

Signal Transformer

Standard and Custom Power Transformers



The Signal Way of Doing Business...

(Often imitated, but *NEVER* equalled)

At Signal Transformer, we are committed to providing the highest grade magnetics for customers who demand total reliability, on-time delivery and competitive pricing. Year after year, independent brand preference studies conducted by leading electronic trade journals, have shown that engineers and buyers consistently vote Signal as the No. 1 preferred source for magnetics.

For almost 40 years, we've led the magnetics industry with innovation, creativity, and reliability by:

- Pioneering and perfecting direct sales of off-the-shelf transformers and chokes to the user.
- Maintaining the largest inventories—over 1,000 different chokes and transformers in ranges from 1 VA to 10 KVA, available off-the-shelf for PRONTO shipment.
- Offering customized J.I.T. programs.
- Providing annual contract programs with the most competitive volume pricing.
- Obtaining the latest safety agency certifications including UL, CSA, VDE, IEC, EN

Delivery Speed Without Equal

PRONTOSM (24-Hour Shipment)

Our PRONTO shipment program is simple. We ship off-the-shelf products within 24 Hours, and, in

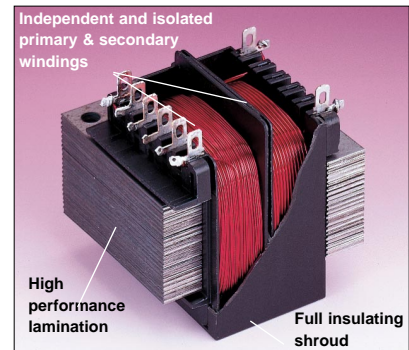


most cases the same day! We are able to make this commitment because we match computerized inventory production schedules with industry requirements. Larger production orders are comfortably scheduled to meet J.I.T. or any delivery scheduling.

In fact, each year over 20,000 orders are shipped to satisfied customers, on-time, every time.

Design and Construction Without Equal

Because we pride ourselves in listening to what our customers say, we at Signal have always been able to develop innovative, quality products that meet changing requirements. Our success is built on continuously addressing all current major concerns i.e. flammability, high temperature materials, and design criteria such as:



Typical example cross section: Model A41

- Smaller size and weight
(For example, see our MPI, HPI & M4L Series)
- Better performance through improved volumetric efficiency (For example, see our M4L series)
- Higher isolation while eliminating crossovers of primary and secondary leads (For example, see our 14A series)
- Superior suppression of radiated magnetic field (For example, see our IF series)

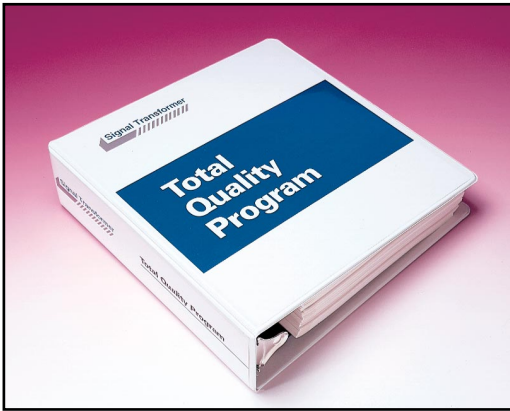
Technical Support Without Equal

With one of the industries largest staff of application engineers, supported by the latest CAD/CAM equipment, our engineering team responds quickly to your specific application needs, custom requirements, and your quotation requests. Please don't hesitate to call, write, or fax us direct.

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All specifications subject to change without notice. Consult factory for latest specifications.

Printed in U.S.A.—Catalog ST-5



Quality Assurance Without Equal

Through years of extensive magnetics manufacturing experience, Signal has developed a unique, world-class Total Quality Program. This program embodies the latest state-of-the-art manufacturing processes and monitoring systems from first article inspection through 100% electrical testing for key performance and safety parameters.



Custom Design Without Equal

At Signal, we've designed thousands of custom products, and may have already solved your problem. If not, we will! To make it easy to identify your specific requirements, we've included a Custom Magnetics Design Data Sheet in our catalog. Our design engineering team welcomes the opportunity to be of service.

Terms and Conditions:

How to Order

Simply call 516-239-5777 and ask to speak to one of our customer service representatives waiting to answer your inquiry. If you wish you may fax your order to our 24-hour fax line (516-239-7208) or mail your purchase order to 500 Bayview Avenue, Inwood, New York, 11096. If faxing or mailing your order please be certain to include your phone number so you can be reached if there are any questions concerning your order.

Terms of Sale

Net 30 days to firms with acceptable D&B rating. Unrated firms, please submit name of your bank and 3 major trade references. Other methods are: C.O.D. for any of our stock transformers, cash in advance for non-stock or custom transformers. We also accept MasterCard and Visa which saves the additional C.O.D. charges.



Prices

Prices are published on our price sheet and are subject to change without notice.

Extra Charges

All non-stock and custom transformer orders are subject to a set-up charge.

Freight Policy

Orders are shipped FOB (point of origin). All UPS shipments are prepaid and freight charges will be added to your invoice. All other carriers are shipped freight collect unless we are otherwise instructed.

Damaged Shipment

Transformers shipped are carefully packed in compliance with carrier requirements. Claims for loss or damage in transit must be made with the carrier by the customer within 15 days of delivery. All shipments should be unpacked and inspected immediately upon receipt. If damage does not become apparent until shipment is unpacked, make a request within 72 hours for inspection by the carrier's agent and file with the carrier. Any evidence of damage to packaging must be noted on the freight bill or carrier's receipt and signed by the carrier's agent. Failure to do this will result in the carrier refusing to honor the claim.

Return Policy

You will find that the quality products purchased from Signal Transformer have been manufactured to give you the high level of quality you expect. Our goal has always been to make sure you are completely satisfied every time you do business with us. If a qualified reason exists, a Return Material Authorization will be given to you promptly and a replacement order will be processed immediately at the time of your call.

Warranty

Signal products are warranted to be free of defects in materials and workmanship when operated within specified operating conditions. Contact Signal for specific warrantee, terms and conditions.



CALL: 516-239-5777 • FAX: (24hrs) 516-239-7208

500 Bayview Avenue, Inwood, New York 11096

Selector Chart

This selector chart was created to assist you in finding the corresponding page for the transformer needed for your application.

- How to use:**
- Select type of unit required, i.e. printed circuit, chassis mount, etc.
 - Select power range (more than one family may be available).
 - Select voltage range (AC or DC voltage).
 - Select agency approvals necessary, i.e., UL, CSA, VDE, UL1585, Class 2.
 - Identify family and turn to corresponding page number.

Printed Circuit Mount

Power Range (VA)	Secondary Voltage Range	Agency Approvals	Family	Page #
2.5-10	5V-36 VCT	UL, CSA, VDE	14A-R	12
20-56	5V-36VCT	UL, CSA, VDE	14A	13
20-56	5VDC & ± 12VDC or ± 15VDC	UL, CSA, VDE	14A Triple Output	14
2-30	5V-230VCT	UL, CSA, VDE	IF	10-11
2-48	5V-230VCT	UL, CSA	LP	15
6-12	5VDC & ± 12VDC or ± 15VDC	UL, CSA	MPL Triple Output	19
1.1-36	5V-120VCT	UL, CSA	ST/DST	16
1.0-24	5V-120VCT	UL, CSA	PC/DPC	17
10-24	5VDC & ± 12VDC or ± 15VDC	UL, CSA	MPC/DMPC Triple Output	18
2.5-50	12V-24V	UL 1585, Class 2	CL2	20

Chassis Mount

Power Range (VA)	Secondary Voltage Range	Agency Approvals	Family	Page #
250-900	5V-230VCT	UL, CSA	MPI	7
2000-3500	115V-230V	UL, CSA, VDE	HPI	5
300-1000	115V	UL, CSA, VDE	M4L	6
25-175	5V-230VCT	UL, CSA, VDE	A41	8
25-80	5VDC & ± 12VDC or ± 15VDC	UL, CSA, VDE	A41 Triple Output	9
2.4-100	10Vct-120Vct	UL, CSA	241/DP241	22
30-100	5VDC & ± 12VDC or ± 15VDC	UL, CSA	MT/DMT Triple Output	23
25-80	12V-24V	UL 1585, Class 2	CL2	21

Supplemental Magnetics

Power Range (VA)	Secondary Voltage Range	Family	Page #
10-2000	5VCT-80VCT	Rectifier Power	24-26
250-10,000	104V-240V	Power Isolation	28-29
100-2000	115V-230V	Auto Transformers	30

Inductance	Current	Family	Page #
.12-1000mH	1.0-200AMPS	Chokes	27

High Power International Transformers



Greater Performance in Less Space and Weight



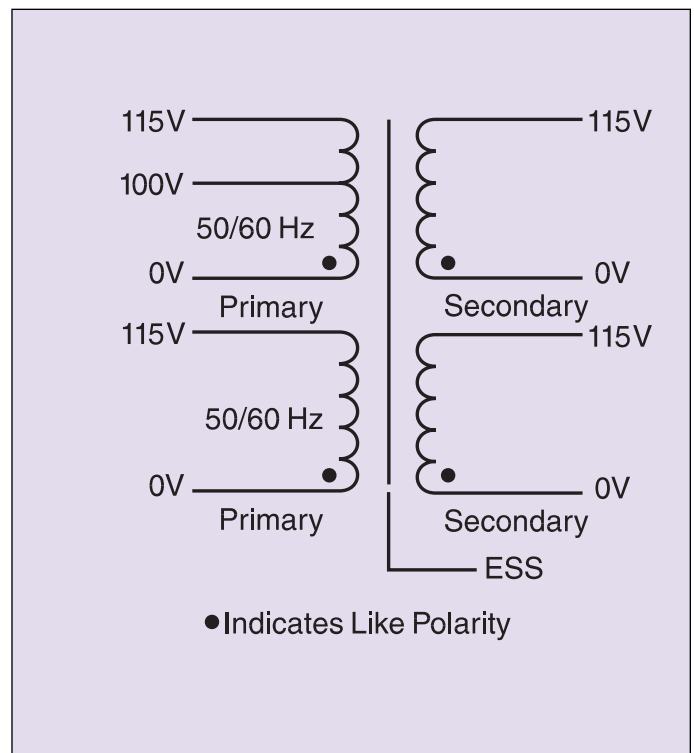
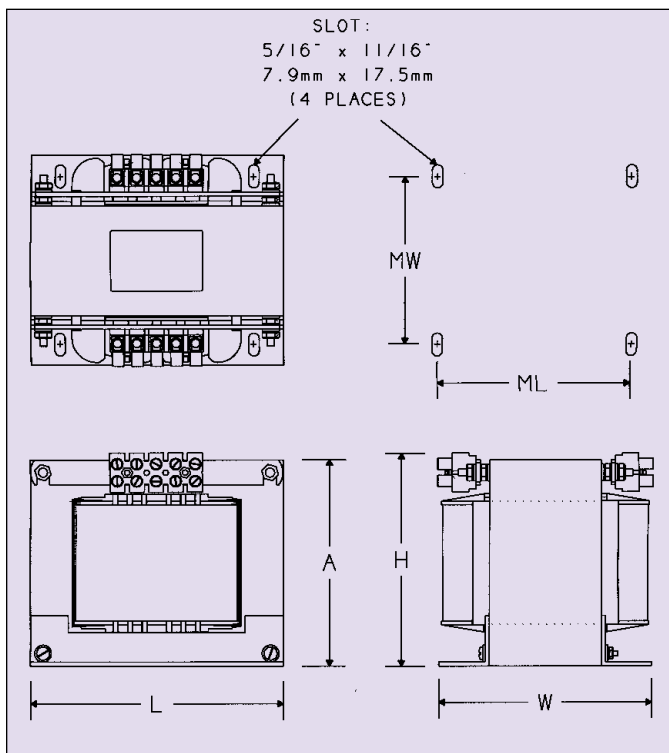
Signal's HPI transformers feature unique coil construction that complies with international safety standards and results in a smaller and lighter transformer.

General Specifications

- **Power** – 2000 VA to 3500 VA
- **Dielectric Strength** – 4000VRMS Hipot
- **Primaries** – Dual/tapped primaries (100V, 115V, 230V - 50/60 Hz)
- **Secondaries** – Series or parallel secondaries (115V or 230V)
- **Electrostatic Shield** – 5 mils thick copper foil
- **Terminals** – Screw type barrier strip
- **Leakage** – Leakage current meets medical applications
- **Insulation** – Class H insulation (180°C)
- **Flammability Rating** – Bobbin material meets UL 94V0

Agency Standards

- UL recognized to UL 506 (File #E63829)
- CSA certified to C22.2 #66 (File #LR 51265)
- VDE certified to VDE 0550 (File #2994)
- TUV certified to IEC 950 (Lic #R9373110.2)

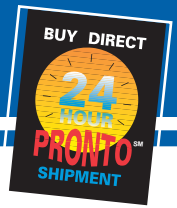


Part No.	VA (Size)	Secondary RMS Rating		Mechanical Dimensions						
		Series	Parallel	L	W	H	A	ML	MW	Wgt
HPI-20	2000	230V @ 8.7A	115V @ 17.4A	7.50" 190.5mm	5.60" 142.2mm	6.56" 166.6mm	6.25" 158.8mm	5.75" 146.1mm	4.35" 110.5mm	41.3 lbs 18.71 kg
HPI-27	2750	230V @ 12.0A	115V @ 24.0A	7.50" 190.5mm	6.23" 158.2mm	6.56" 166.6mm	6.25" 158.8mm	5.75" 146.1mm	4.98" 126.5mm	48.0 lbs 21.77 kg
HPI-35	3500	230V @ 15.2A	115V @ 30.4A	7.50" 190.5mm	7.33" 186.2mm	6.56" 166.6mm	6.25" 158.8mm	5.75" 146.1mm	6.08" 154.4mm	62.4 lbs 28.30 kg

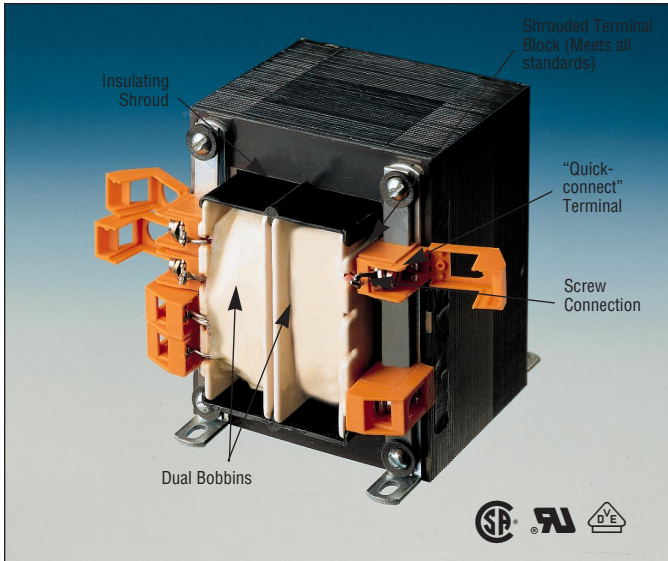
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Greater Performance in Less Space



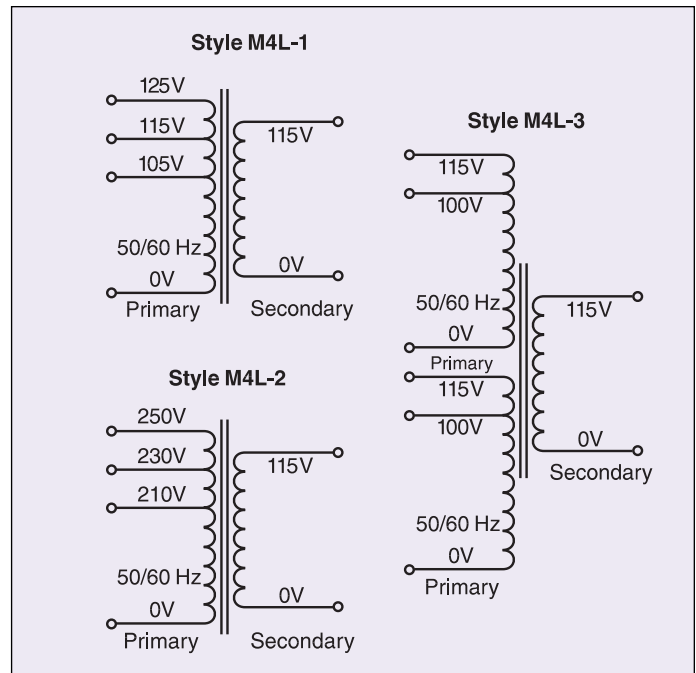
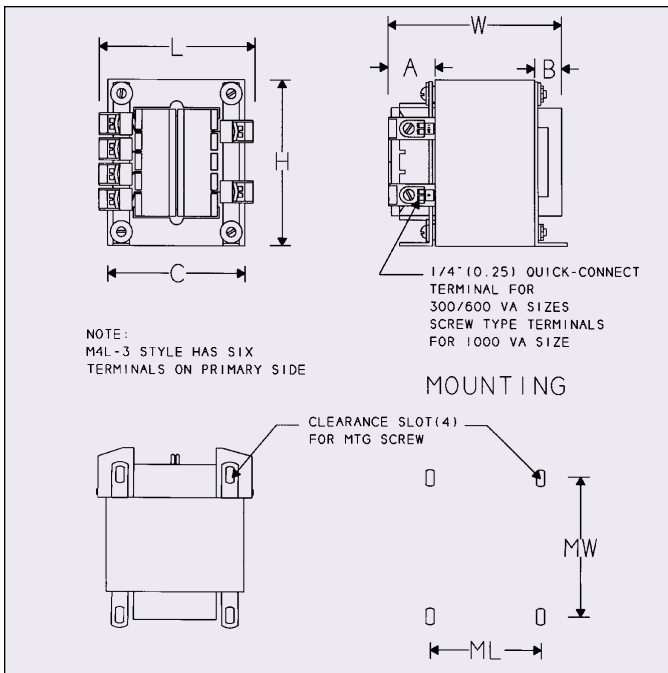
Signal's M4L transformer series is designed using low loss steel, high temperature magnet wire plus high temperature bobbins and shroud. These unique design features result in a smaller and lighter transformer for comparable power sizes.

General Specifications

- Power – 300 VA to 1000 VA
- Dielectric Strength – 4000VRMS Hipot
- Primaries – Style M4L-1 (105V, 115V, 125V - 50/60 Hz)
Style M4L-2 (210V, 230V, 250V - 50/60 Hz)
Style M4L-3 (100V, 115V, 200V, 230V - 50/60 Hz)
- Secondary – Single secondary (115V)
- Terminals – Quick-connect / screw type terminals
- Leakage – Leakage current to meet UL 544
- Insulation – Class F insulation (155°C)
- Flammability Rating – Bobbin and shroud material meet UL 94V0

Agency Standards

- UL recognized to UL 506 (File #E63829)
- UL recognized to UL 544 (File #E63829)
- CSA certified to C22.2 #66 (File #LR 51265)
- VDE certified to VDE 0805 / EN 60950 (File #1447)
- VDE certified to IEC 950



Part Number			VA (Size)	Secondary RMS Rating	L	W	H	A	B	C	Mtg. Dim.		Mtg. Screw	Wgt
115V Nominal	230V Nominal	100-115/200-230V Nominal									ML	MW		
M4L-1-3	M4L-2-3	M4L-3-3	300	115V @ 2.6A	3.50" 88.9mm	3.87" 98.4mm	3.75" 95.3mm	1.12" 28.6mm	.62" 15.9mm	3.12" 79.4mm	2.50" 63.5mm	3.12" 79.4mm	#10	7.0 lbs 3.18 kg
M4L-1-6	M4L-2-6	M4L-3-6	600	115V @ 5.2A	3.87" 98.4mm	4.93" 125.4mm	4.50" 114.3mm	1.18" 30.2mm	.75" 19.1mm	3.75" 95.3mm	3.00" 76.2mm	4.06" 103.2mm	#10	14.3 lbs 6.49 kg
M4L-1-10	M4L-2-10	M4L-3-10	1000	115V @ 8.7A	5.37" 136.5mm	5.87" 149.2mm	5.25" 133.4mm	1.50" 38.1mm	.87" 22.2mm	4.37" 111.1mm	3.50" 88.9mm	4.06" 119.1mm	1/4	22.0 lbs 10.0 kg

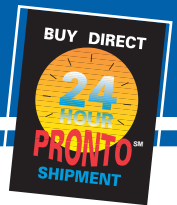
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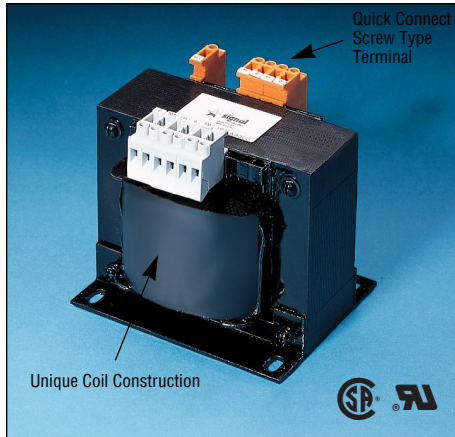
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Multi-Purpose International Transformers



High Performance with Greater Volumetric Efficiency



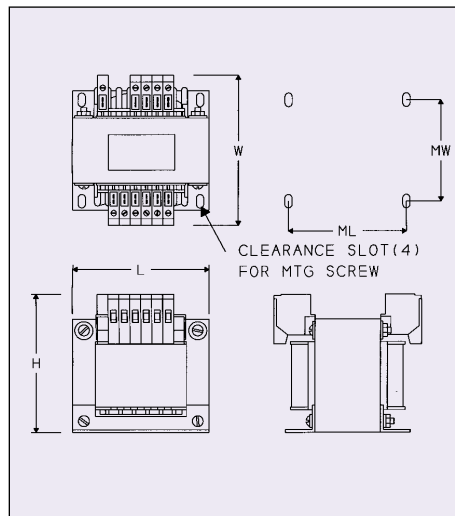
Signal's MPI transformers feature higher volumetric efficiency for improved performance compared to conventional 50/60 Hz transformers. They also incorporate international safety features which make them ideal for worldwide applications.

General Specifications

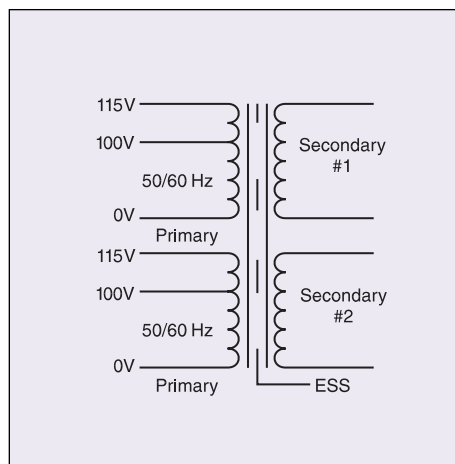
- **Power** – 200 VA to 900 VA
- **Dielectric Strength** – 4000VRMS Hipot
- **Primaries** – Dual/tapped primaries (100V, 115V, 200V, 215V, 230V - 50/60 Hz)
- **Secondaries** – Series or parallel secondaries
- **Electrostatic Shield** – 5 mils thick copper foil
- **Terminals** – Quick-connect/screw type terminals
- **Leakage** – Leakage current meets medical applications
- **Insulation** – Class F insulation (155°C)

Agency Standards

- UL recognized to UL 506 (File #E63829)
- CSA certified to C22.2 #66 (File #LR 51265)
- Designed to meet VDE 0805 and VDE 0550
- Designed to meet IEC 950



Part No.	SECONDARY		Part No.	SECONDARY	
	Series	Parallel		Series	Parallel
MPI-200-10	10VCT @ 20.0A	5V @ 40.0A	MPI-200-28	28VCT @ 7.1A	14V @ 14.2A
MPI-250-10	10VCT @ 25.0A	5V @ 50.0A	MPI-250-28	28VCT @ 8.9A	14V @ 17.9A
MPI-300-10	10VCT @ 30.0A	5V @ 60.0A	MPI-300-28	28VCT @ 10.7A	14V @ 21.4A
MPI-400-10	10VCT @ 40.0A	5V @ 80.0A	MPI-400-28	28VCT @ 14.3A	14V @ 28.6A
MPI-650-10	10VCT @ 65.0A	5V @ 130.0A	MPI-650-28	28VCT @ 23.2A	14V @ 46.4A
MPI-900-10	10VCT @ 90.0A	5V @ 180.0A	MPI-900-28	28VCT @ 32.1A	14V @ 64.2A
MPI-200-12	12VCT @ 16.7A	6V @ 33.3A	MPI-200-36	36VCT @ 5.6A	18V @ 11.2A
MPI-250-12	12VCT @ 20.8A	6V @ 41.7A	MPI-250-36	36VCT @ 6.9A	18V @ 13.8A
MPI-300-12	12VCT @ 25.0A	6V @ 50.0A	MPI-300-36	36VCT @ 8.3A	18V @ 16.7A
MPI-400-12	12VCT @ 33.3A	6V @ 66.6A	MPI-400-36	36VCT @ 11.1A	18V @ 22.2A
MPI-650-12	12VCT @ 54.2A	6V @ 108.4A	MPI-650-36	36VCT @ 18.1A	18V @ 36.2A
MPI-900-12	12VCT @ 75.0A	6V @ 150.0A	MPI-900-36	36VCT @ 25.0A	18V @ 50.0A
MPI-200-16	16VCT @ 12.5A	8V @ 25.0A	MPI-200-40	40VCT @ 5.0A	20V @ 10.0A
MPI-250-16	16VCT @ 15.6A	8V @ 31.2A	MPI-250-40	40VCT @ 6.3A	20V @ 12.6A
MPI-300-16	16VCT @ 18.8A	8V @ 37.6A	MPI-300-40	40VCT @ 7.5A	20V @ 15.0A
MPI-400-16	16VCT @ 25.0A	8V @ 50.0A	MPI-400-40	40VCT @ 10.0A	20V @ 20.0A
MPI-650-16	16VCT @ 40.6A	8V @ 81.2A	MPI-650-40	40VCT @ 16.3A	20V @ 32.6A
MPI-900-16	16VCT @ 56.3A	8V @ 112.5A	MPI-900-40	40VCT @ 22.5A	20V @ 45.0A
MPI-200-20	20VCT @ 10.0A	10V @ 20.0A	MPI-200-48	48VCT @ 4.2A	24V @ 8.3A
MPI-250-20	20VCT @ 12.5A	10V @ 25.0A	MPI-250-48	48VCT @ 5.2A	24V @ 10.4A
MPI-300-20	20VCT @ 15.0A	10V @ 30.0A	MPI-300-48	48VCT @ 6.3A	24V @ 12.6A
MPI-400-20	20VCT @ 20.0A	10V @ 40.0A	MPI-400-48	48VCT @ 8.3A	24V @ 16.7A
MPI-650-20	20VCT @ 32.5A	10V @ 65.0A	MPI-650-48	48VCT @ 13.5A	24V @ 27.1A
MPI-900-20	20VCT @ 45.0A	10V @ 90.0A	MPI-900-48	48VCT @ 18.8A	24V @ 37.5A
MPI-200-24	24VCT @ 8.3A	12V @ 16.7A	MPI-200-230	230VCT @ 0.87A	115V @ 1.7A
MPI-250-24	24VCT @ 10.4A	12V @ 20.8A	MPI-250-230	230VCT @ 1.1A	115V @ 2.2A
MPI-300-24	24VCT @ 12.5A	12V @ 25.0A	MPI-300-230	230VCT @ 1.3A	115V @ 2.6A
MPI-400-24	24VCT @ 16.7A	12V @ 33.3A	MPI-400-230	230VCT @ 1.7A	115V @ 3.4A
MPI-650-24	24VCT @ 27.1A	12V @ 54.2A	MPI-650-230	230VCT @ 2.8A	115V @ 5.6A
MPI-900-24	24VCT @ 37.5A	12V @ 75.0A	MPI-900-230	230VCT @ 3.9A	115V @ 7.8A



VA (Size)	L	W	H	ML	MW	WGT
200	3.750"	4.203"	3.720"	3.250"	2.800"	6.22 lbs
	95.3mm	106.6mm	94.5mm	82.6mm	71.1mm	2.82 kg
250	4.125"	3.898"	4.000"	3.625"	2.601"	6.76 lbs
	104.8mm	99.0mm	101.6mm	92.1mm	66.1mm	3.07 kg
300	4.125"	4.223"	4.000"	3.625"	2.915"	7.80 lbs
	104.8mm	107.3mm	101.6mm	92.1mm	74.0mm	3.54 kg
400	4.125"	4.805"	4.000"	3.625"	3.505"	9.82 lbs
	104.8mm	122.0mm	101.6mm	92.1mm	89.0mm	4.46 kg
650	5.250"	4.430"	4.800"	4.500"	3.415"	14.83 lbs
	133.3mm	112.5mm	121.9mm	114.3mm	86.7mm	6.73 kg
900	5.250"	5.197"	4.800"	4.500"	4.205"	19.84 lbs
	133.3mm	132.0mm	121.9mm	114.3mm	106.8mm	9.01 kg

If you don't see a specific part that meets your requirement, see page 31 for our custom magnetics design data sheet.



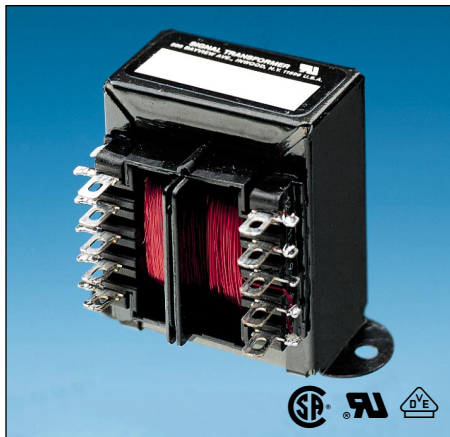
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All-4-One™ International Transformers Chassis Mount



International Standards at Lower Cost and Better Performance



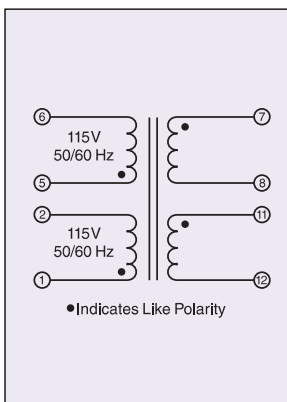
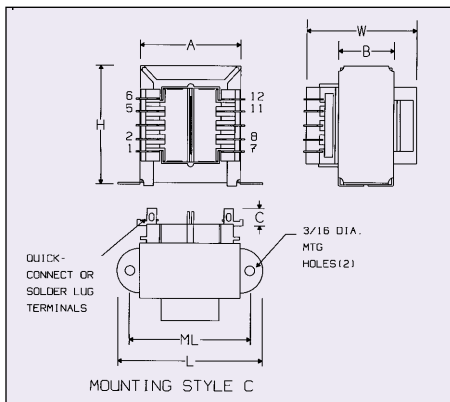
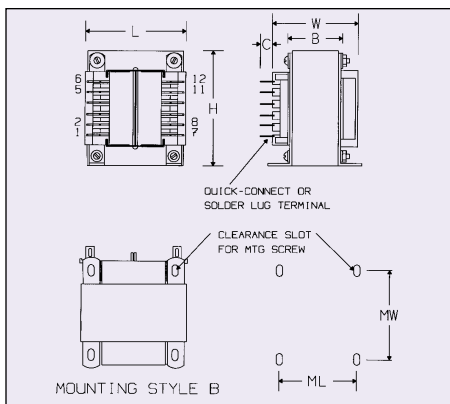
Signal's A41 transformers provide the high isolation, creepage and clearance necessary to comply with international safety standards.

General Specifications

- **Power** – 25 VA to 175 VA
- **Dielectric Strength** – 4000VRMS Hipot
- **Primaries** – Dual primaries (115/230 V - 50/60 Hz)
- **Secondaries** – Series or parallel secondaries
- **Electrostatic Shield** – Not necessary, dual bobbin construction
- **Terminals** – Solder lug / quick-connect type terminals
- **Leakage** – Leakage current to meet UL 544
- **Insulation** – Class F insulation (155°C)
- **Flammability Rating** – Bobbin and shroud material meet UL 94V0

Agency Standards

- UL recognized to UL 506 (File #E63829)
- CSA certified to C22.2 #66 (File #LR 51265)
- VDE certified to VDE 0805 / EN 60950 (File #1448)
- VDE certified to IEC 950



Part No.	VA (Size)	Secondary RMS Rating	
		Series	Parallel
A41-25-10	25	10VCT @ 2.5A	5V @ 5.0A
A41-43-10	43	10VCT @ 4.3A	5V @ 8.6A
A41-80-10	80	10VCT @ 8.0A	5V @ 16.0A
A41-130-10	130	10VCT @ 13.0A	5V @ 26.0A
A41-175-10	175	10VCT @ 17.5A	5V @ 35.0A
A41-25-12	25	12.6VCT @ 2.0A	6.3V @ 4.0A
A41-43-12	43	12.6VCT @ 3.4A	6.3V @ 6.8A
A41-80-12	80	12.6VCT @ 6.3A	6.3V @ 12.6A
A41-130-12	130	12.6VCT @ 10.3A	6.3V @ 20.6A
A41-175-12	175	12.6VCT @ 14.0A	6.3V @ 28.0A
A41-25-16	25	16VCT @ 1.6A	8V @ 3.2A
A41-43-16	43	16VCT @ 2.7A	8V @ 5.4A
A41-80-16	80	16VCT @ 5.0A	8V @ 10.0A
A41-130-16	130	16VCT @ 8.1A	8V @ 16.2A
A41-175-16	175	16VCT @ 11.0A	8V @ 22.0A
A41-25-20	25	20VCT @ 1.25A	10V @ 2.5A
A41-43-20	43	20VCT @ 2.2A	10V @ 4.4A
A41-80-20	80	20VCT @ 4.0A	10V @ 8.0A
A41-130-20	130	20VCT @ 6.5A	10V @ 13.0A
A41-175-20	175	20VCT @ 8.8A	10V @ 17.6A
A41-25-24	25	24VCT @ 1.0A	12V @ 2.0A
A41-43-24	43	24VCT @ 1.8A	12V @ 3.6A
A41-80-24	80	24VCT @ 3.3A	12V @ 6.6A
A41-130-24	130	24VCT @ 5.4A	12V @ 10.8A
A41-175-24	175	24VCT @ 7.3A	12V @ 14.6A
A41-25-28	25	28VCT @ 0.9A	14V @ 1.86A
A41-43-28	43	28VCT @ 1.5A	14V @ 3.0A
A41-80-28	80	28VCT @ 2.8A	14V @ 5.6A
A41-130-28	130	28VCT @ 4.6A	14V @ 9.2A
A41-175-28	175	28VCT @ 6.25A	14V @ 12.5A
A41-25-36	25	36VCT @ 0.7A	18V @ 1.4A
A41-43-36	43	36VCT @ 1.2A	18V @ 2.4A
A41-80-36	80	36VCT @ 2.2A	18V @ 4.4A
A41-130-36	130	36VCT @ 3.6A	18V @ 7.2A
A41-175-36	175	36VCT @ 4.8A	18V @ 9.6A
A41-25-230	25	230VCT @ 0.11A	115V @ 0.22A
A41-43-230	43	230VCT @ 0.19A	115V @ 0.38A
A41-80-230	80	230VCT @ 0.35A	115V @ 0.7A
A41-130-230	130	230VCT @ 0.57A	115V @ 1.14A
A41-175-230	175	230VCT @ 0.76A	115V @ 1.52A

VA (Size)	Dimensions						Terminals	Mtg. Style	Mtg. Dim.		Mtg. Screw	Wgt
	L	W	H	A	B	C			ML	MW		
25	2.81" 71.4mm	1.87" 47.6mm	2.31" 58.7mm	2.00" 50.8mm	1.12" 28.6mm	.31" 7.9mm	.187" 4.75mm	C	2.37" 60.3mm	-	#6	1.25 lbs 0.57 kg
43	3.12" 79.4mm	2.06" 52.3mm	2.68" 68.2mm	2.25" 57.2mm	1.12" 28.6mm	.31" 7.9mm	.187" 4.75mm	C	2.81" 71.4mm	-	#6	1.6 lbs 0.73 kg
80	2.50" 63.5mm	2.37" 60.3mm	3.00" 76.2mm	-	1.37" 35.0mm	.31" 7.9mm	.187" 4.75mm	B	2.00" 50.8mm	2.18" 55.5mm	#6	2.8 lbs 1.27 kg
130	2.81" 71.4mm	2.87" 73.0mm	3.37" 85.7mm	-	1.62" 41.3mm	.37" 9.5mm	0.25" 6.35mm	B	2.25" 57.2mm	2.50" 63.5mm	#8	4.1 lbs 1.86 kg
175	3.12" 79.4mm	2.87" 73.0mm	3.75" 95.3mm	-	1.62" 41.3mm	.37" 9.5mm	0.25" 6.35mm	B	2.50" 63.5mm	2.50" 63.5mm	#8	5.5 lbs 2.49 kg

If you don't see a specific part that meets your requirement, see page 31 for our custom magnetics design data sheet.

Signal Transformer

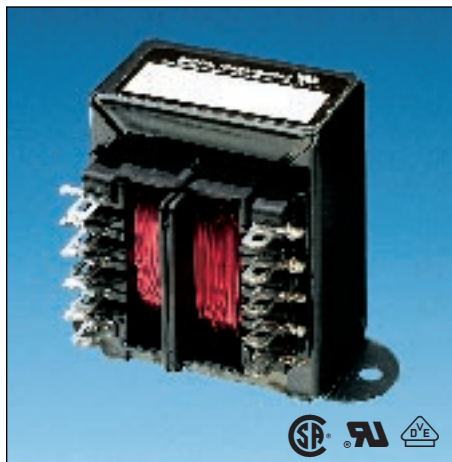
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For 5 VDC and ±12 VDC or ±15 VDC Regulated Power Supplies Which Require International Safety Certification



Signal's A41 triple output transformers have chassis mount capability plus all of the performance features of our split bobbin A41 series.

General Specifications

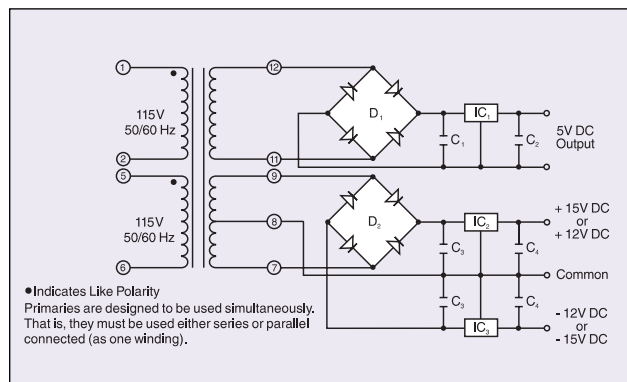
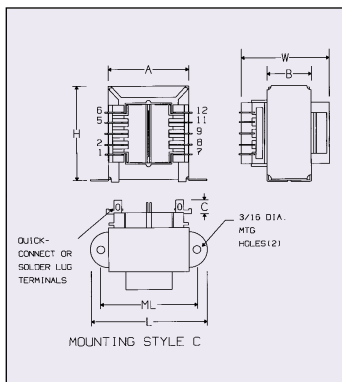
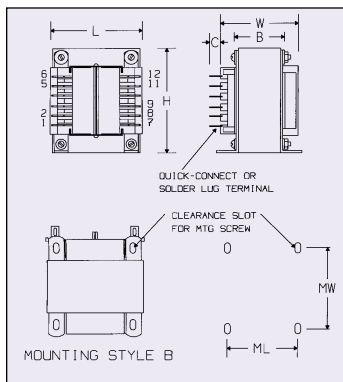
- **Power** — 25 VA to 80 VA
- **Dielectric Strength** — 4000VRMS Hipot
- **Primaries** — Dual primaries (115/230 V - 50/60 Hz)
Input range (100V to 130V or 200V to 260V - 50/60 Hz)
- **Secondaries** — Dual complimentary outputs (5 VDC with ±12 VDC or 5 VDC with ± 15 VDC)
- **Electrostatic Shield** — Not necessary, split bobbin construction
- **Terminals** — Solder lug/quick-connect type terminals
- **Insulation** — Class F insulation (155°C)
- **Flammability Rating** — Bobbin and shroud material meet UL 94V0

Agency Standards

- UL recognized to UL 506 (File #E63829)
- CSA certified to C22.2 #66 (File #LR 51265)
- VDE certified to VDE 0805 / EN 60950 (File #4362)
- VDE certified to IEC 950

Part Number	VA (Size)	DC Output		Suggested Components			C ₂ C ₄ See Note ①			
		Regulator I	Regulator II	C ₁	C ₃	IC1②	IC2③	IC3③	D1④	D2⑤
A41-25-512	25	5V @ 1.25A	±12V @ 150mA	4.1 KMFD @ 15 VDC	600 MFD @ 50 VDC	LM-323K-5	LM-340K-12	LM-320K-12	PE20	PF20
A41-25-515	25	5V @ 1.25A	±15V @ 130mA	15 VDC	50 VDC	LM-323K-5	LM-340K-15	LM-320K-15	PE20	PF20
A41-43-512	43	5V @ 2A	±12V @ 300mA	8 KMFD @ 15 VDC	1.1 KMFD @ 50 VDC	LM-323K-5	LM-340K-12	LM-320K-12	PE20	PF20
A41-43-515	43	5V @ 2A	±15V @ 250mA	15 VDC	50 VDC	LM-323K-5	LM-340K-15	LM-320K-15	PE20	PF20
A41-80-512	80	5V @ 3.5A	±12V @ 600mA	10 KMFD @ 15 VDC	2.1 KMFD @ 50 VDC	LM-338②	LM-340K-12	LM-320K-12	PP20	PF20
A41-80-515	80	5V @ 3.5A	±15V @ 500mA	15 VDC	50 VDC	LM-338②	LM-340K-15	LM-320K-15	PP20	PF20

Note ①: Output capacitors C₂ and C₄ are required to stabilize regulators. Values can be 1MFD min. tantalum or 10MFD min. electrolytic, 20V min.
 Note ②: LM-338 is an adjustable regulator and MFR's specifications (National Semiconductor) should be consulted for values of external components.
 Note ③: All IC's are National Semiconductor types.
 Note ④: All bridges are EDI types



VA (Size)	Dimensions						Terminal	Mtg. Style	Mtg. Dim.		Mtg. Screw	Wgt
	L	W	H	A	B	C			ML	MW		
25	2.81" 71.4mm	1.87" 47.6mm	2.31" 58.7mm	2.00" 50.8mm	1.12" 28.6mm	0.31" 7.9mm	0.187" 4.75mm	C	2.37" 60.3mm	—	#6	1.25 lbs 0.57 kg
43	3.12" 79.4mm	2.06" 52.3mm	2.68" 68.2mm	2.25" 57.2mm	1.12" 28.6mm	0.31" 7.9mm	0.187" 4.75mm	C	2.81" 71.4mm	—	#6	1.6 lbs 0.73 kg
80	2.50" 63.5mm	2.37" 60.3mm	3.00" 76.2mm	—	1.37" 34.9mm	0.31" 7.9mm	0.187" 4.75mm	B	2.00" 50.8mm	2.18" 55.5mm	#6	2.8 lbs 1.27 kg

If you don't see a specific part that meets your requirement, see page 31 for our custom magnetics design data sheet.

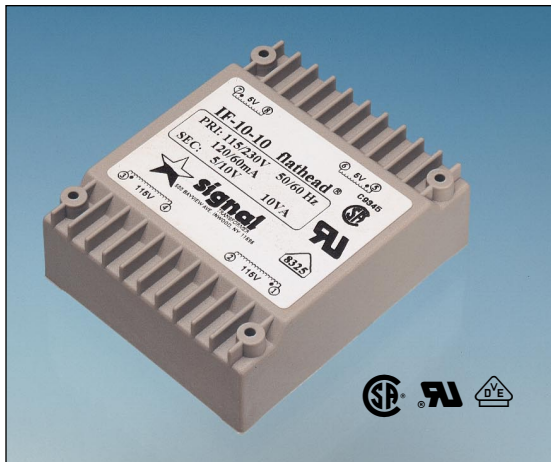


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For Critical Height and International Safety Requirements



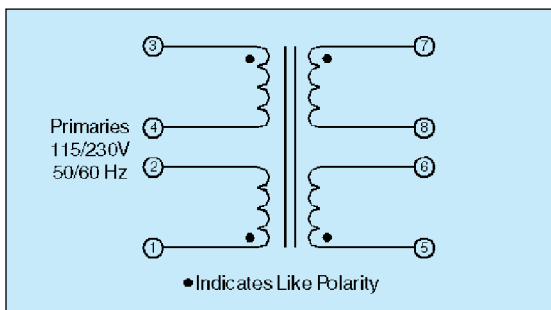
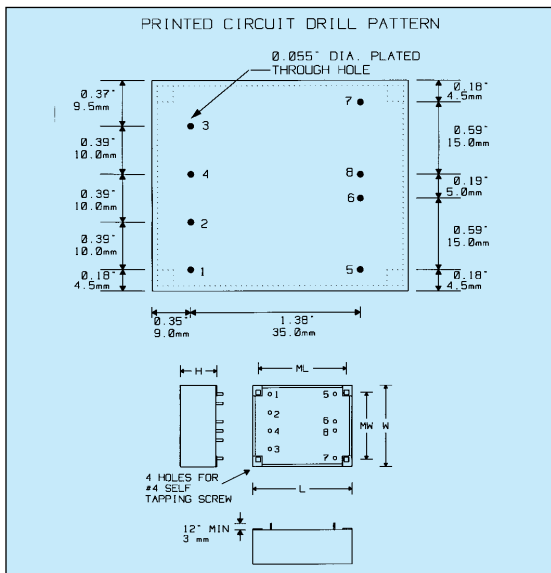
Signal's IF transformers utilize unique insulating techniques, including full encapsulation to meet international safety requirements. These transformers are ideal for low power applications where minimum height is required.

General Specifications

- Power – 2 VA to 30 VA
- Dielectric Strength – 4000VRMS Hipot
- Primaries – Dual primaries (115/230 V - 50/60 Hz)
- Secondaries – Series of parallel secondaries
- Electrostatic Shield – Not necessary, split bobbin construction
- Magnetic Field – Reduced magnetic radiation
- Height – .69 to 1.39 inches (17.5 to 35.3mm) high
- Insulation – Class B insulation (130°C)

Agency Standards

- UL recognized to UL 506 (File #E63829)
- CSA certified to C22.2 #66 (File #LR 51265)
- VDE certified to VDE 0805 / EN 60950 (File #8325)
- VDE certified to IEC 950



Part No.	VA (Size)	Secondary RMS Rating	
		Series	Parallel
IF-2-10	2	10VCT @ 200mA	5V @ 400mA
IF-2-12	2	12VCT @ 170mA	6V @ 340mA
IF-2-16	2	16VCT @ 125mA	8V @ 250mA
IF-2-20	2	20VCT @ 100mA	10V @ 200mA
IF-2-24	2	24VCT @ 85mA	12V @ 170mA
IF-2-30	2	30VCT @ 70mA	15V @ 140mA
IF-2-34	2	34VCT @ 60mA	17V @ 120mA
IF-2-40	2	40VCT @ 50mA	20V @ 100mA
IF-2-56	2	56VCT @ 40mA	28V @ 80mA
IF-2-230	2	230VCT @ 9 mA	115V @ 18mA
IF-4-10	4	10VCT @ 400 mA	5V @ 800mA
IF-4-12	4	12VCT @ 335mA	6V @ 670mA
IF-4-16	4	16VCT @ 250mA	8V @ 500mA
IF-4-20	4	20VCT @ 200mA	10V @ 400mA
IF-4-24	4	24VCT @ 170mA	12V @ 340mA
IF-4-30	4	30VCT @ 135mA	15V @ 270mA
IF-4-34	4	34VCT @ 120mA	17V @ 240mA
IF-4-40	4	40VCT @ 100mA	20V @ 200mA
IF-4-56	4	56VCT @ 70mA	28V @ 140mA
IF-4-230	4	230VCT @ 18mA	115V @ 36mA
IF-6-10	6	10VCT @ 600mA	5V @ 1.20A
IF-6-12	6	12VCT @ 500mA	6V @ 1.00A
IF-6-16	6	16VCT @ 375mA	8V @ 750mA
IF-6-20	6	20VCT @ 300mA	10V @ 600mA
IF-6-24	6	24VCT @ 250mA	12V @ 500mA
IF-6-30	6	30VCT @ 200mA	15V @ 400mA
IF-6-34	6	34VCT @ 180mA	17V @ 360mA
IF-6-40	6	40VCT @ 150mA	20V @ 300mA
IF-6-56	6	56VCT @ 110mA	28V @ 220mA
IF-6-230	6	230VCT @ 25mA	115V @ 50mA

VA (Size)	L	W	H	ML	MW	Wgt
2	2.09"	1.73"	0.69"	1.87"	1.48"	4.6 oz
	53.0mm	44.0mm	17.6mm	47.5mm	37.5mm	0.13 kg
4	2.09"	1.73"	0.77"	1.87"	1.48"	5.4 oz
	53.0mm	44.0mm	19.6mm	47.5mm	37.5mm	0.15 kg
6	2.09"	1.73"	0.89"	1.87"	1.48"	6.9 oz
	53.0mm	44.0mm	22.6mm	47.5mm	37.5mm	0.20 kg

If you don't see a specific part that meets your requirement, see page 31 for our custom magnetics design data sheet.

Signal Transformer

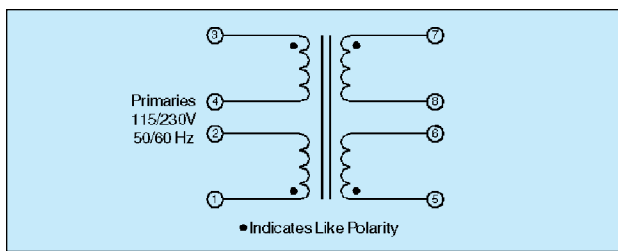
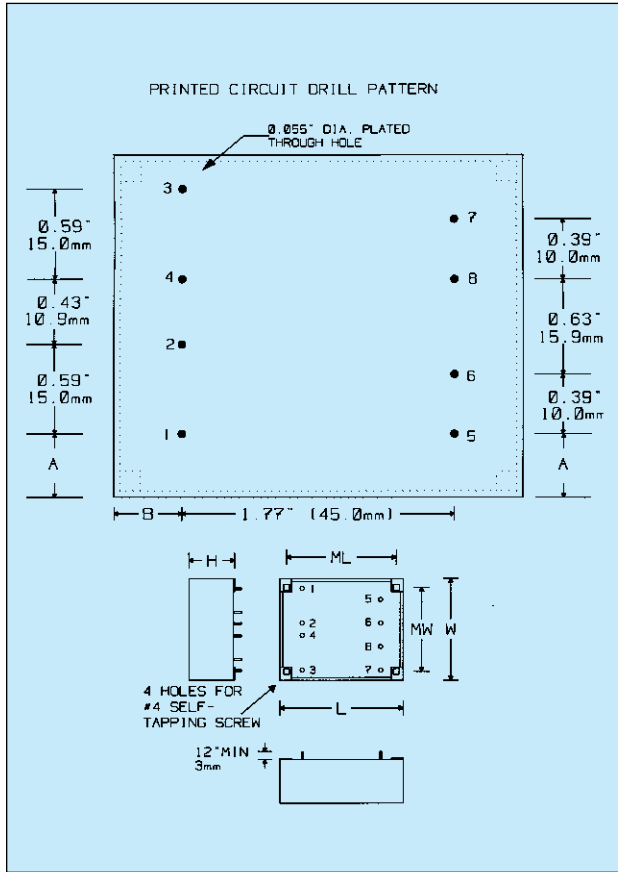
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For Critical Height and International Safety Requirements (continued)



Part No.	VA (Size)	Secondary RMS Rating	
		Series	Parallel
IF-10-10	10	10VCT @ 1.00A	5V @ 2.00A
IF-10-12	10	12VCT @ 835mA	6V @ 1.67A
IF-10-16	10	16VCT @ 625mA	8V @ 1.25A
IF-10-20	10	20VCT @ 500mA	10V @ 1.00A
IF-10-24	10	24VCT @ 420mA	12V @ 840mA
IF-10-30	10	30VCT @ 335mA	15V @ 670mA
IF-10-34	10	34VCT @ 300mA	17V @ 600mA
IF-10-40	10	40VCT @ 250mA	20V @ 500mA
IF-10-56	10	56VCT @ 180mA	28V @ 360mA
IF-10-230	10	230VCT @ 45mA	115V @ 90mA
IF-14-10	14	10VCT @ 1.40A	5V @ 2.80A
IF-14-12	14	12VCT @ 1.20A	6V @ 2.40A
IF-14-16	14	16VCT @ 875mA	8V @ 1.75A
IF-14-20	14	20VCT @ 700mA	10V @ 1.40A
IF-14-24	14	24VCT @ 600mA	12V @ 1.20A
IF-14-30	14	30VCT @ 470mA	15V @ 940mA
IF-14-34	14	34VCT @ 415mA	17V @ 830mA
IF-14-40	14	40VCT @ 350mA	20V @ 700mA
IF-14-56	14	56VCT @ 250mA	28V @ 500mA
IF-14-230	14	230VCT @ 60mA	115V @ 120mA
IF-18-10	18	10VCT @ 1.80A	5V @ 3.60A
IF-18-12	18	12VCT @ 1.50A	6V @ 3.00A
IF-18-16	18	16VCT @ 1.15A	8V @ 2.30A
IF-18-20	18	20VCT @ 900mA	10V @ 1.80A
IF-18-24	18	24VCT @ 750mA	12V @ 1.50A
IF-18-30	18	30VCT @ 600mA	15V @ 1.20A
IF-18-34	18	34VCT @ 530mA	17V @ 1.06A
IF-18-40	18	40VCT @ 450mA	20V @ 900mA
IF-18-56	18	56VCT @ 320mA	28V @ 640mA
IF-18-230	18	230VCT @ 80mA	115V @ 160mA
IF-24-10	24	10VCT @ 2.40A	5V @ 4.80A
IF-24-12	24	12VCT @ 2.00A	6V @ 4.00A
IF-24-16	24	16VCT @ 1.50A	8V @ 3.00A
IF-24-20	24	20VCT @ 1.20A	10V @ 2.40A
IF-24-24	24	24VCT @ 1.00A	12V @ 2.00A
IF-24-30	24	30VCT @ 800mA	15V @ 1.60A
IF-24-34	24	34VCT @ 700mA	17V @ 1.40A
IF-24-40	24	40VCT @ 600mA	20V @ 1.20A
IF-24-56	24	56VCT @ 430mA	28V @ 860mA
IF-24-230	24	230VCT @ 105mA	115V @ 210mA
IF-30-10	30	10VCT @ 3.00A	5V @ 6.00A
IF-30-12	30	12VCT @ 2.50A	6V @ 5.00A
IF-30-16	30	16VCT @ 1.90A	8V @ 3.80A
IF-30-20	30	20VCT @ 1.50A	10V @ 3.00A
IF-30-24	30	24VCT @ 1.25A	12V @ 2.50A
IF-30-30	30	30VCT @ 1.00A	15V @ 2.00A
IF-30-34	30	34VCT @ 900mA	17V @ 1.80A
IF-30-40	30	40VCT @ 750mA	20V @ 1.50A
IF-30-56	30	56VCT @ 550mA	28V @ 1.10A
IF-30-230	30	230VCT @ 130mA	115V @ 260mA

VA (Size)	L	W	H	ML	MW	A	B	Wgt
10	2.66" 67.6mm	2.24" 57.0mm	0.89" 22.6mm	2.46" 62.5mm	1.97" 50.0mm	0.42" 10.6mm	0.45" 11.3mm	10.3 oz 0.29 kg
14	2.66" 67.6mm	2.24" 57.0mm	0.96" 24.3mm	2.46" 62.5mm	1.97" 50.0mm	0.42" 10.6mm	0.45" 11.3mm	11.9 oz 0.34 kg
18	2.66" 67.6mm	2.24" 57.0mm	1.09" 27.6mm	2.46" 62.5mm	1.97" 50.0mm	0.42" 10.6mm	0.45" 11.3mm	14.1 oz 0.40 kg
24	2.68" 68.0mm	2.26" 57.5mm	1.23" 31.3mm	2.46" 62.5mm	1.97" 50.0mm	0.43" 10.9mm	0.46" 11.5mm	16.5 oz 0.47 kg
30	2.68" 68.0mm	2.26" 57.5mm	1.39" 35.3mm	2.46" 62.5mm	1.97" 50.0mm	0.43" 10.9mm	0.46" 11.5mm	19.7 oz 0.58 kg

If you don't see a specific part that meets your requirement, see page 31 for our custom magnetics design data sheet.

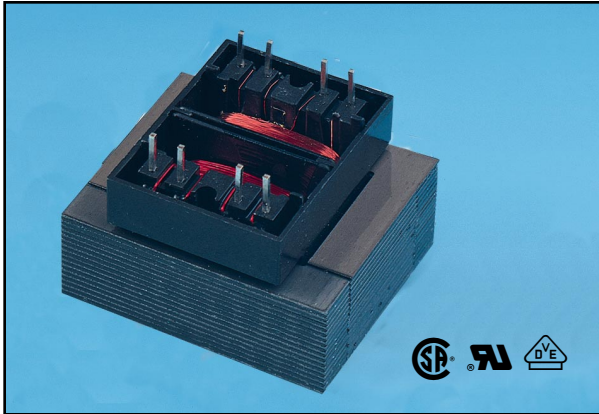


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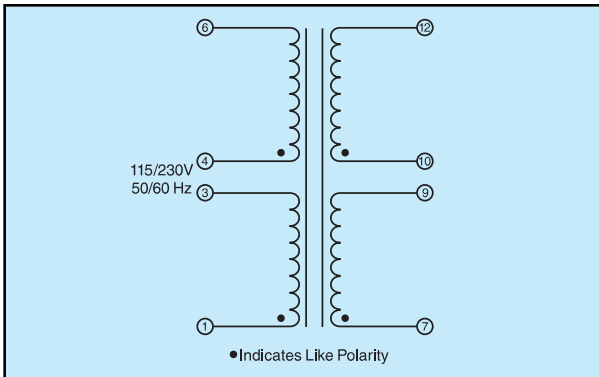
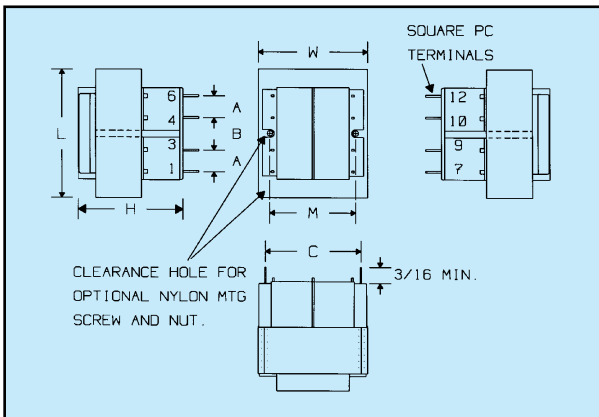
Signal's 14A transformers are used in low power applications and provide the high isolation, creepage and clearance necessary to comply with international safety standards.

General Specifications

- Power – 2.5 VA to 10 VA
- Dielectric Strength – 4000VRMS Hipot
- Primaries – Dual primaries (115/230V - 50/60 Hz)
- Secondaries – Series or parallel secondaries
- Electrostatic Shield – Not necessary, split or dual bobbin construction
- Insulation – Class F insulation (155°C)
- Flammability – Bobbin and wrap around shroud material meet UL 94V0

Agency Standards

- UL recognized to UL 506 (File #E63829)
- CSA certified to C22.2 #66 (File #LR 51265)
- VDE certified to VDE 0805 / EN 60950 (File #1446)
- VDE certified to IEC 950



Part No.	VA (Size)	Secondary RMS Rating	
		Series	Parallel
14A-2.5R-10	2.5	10VCT @ 0.25A	5V @ 0.50A
14A-5.0R-10	5.0	10VCT @ 0.50A	5V @ 1.00A
14A-10R-10	10.0	10VCT @ 1.00A	5V @ 2.00A
14A-2.5R-12	2.5	12.6VCT @ 0.20A	6.3V @ 0.40A
14A-5.0R-12	5.0	12.6VCT @ 0.40A	6.3V @ 0.80A
14A-10R-12	10.0	12.6VCT @ 0.80A	6.3V @ 1.60A
14A-2.5R-16	2.5	16VCT @ 0.15A	8V @ 0.30A
14A-5.0R-16	5.0	16VCT @ 0.31A	8V @ 0.62A
14A-10R-16	10.0	16VCT @ 0.62A	8V @ 1.25A
14A-2.5R-20	2.5	20VCT @ 0.12A	10V @ 0.24A
14A-5.0R-20	5.0	20VCT @ 0.25A	10V @ 0.50A
14A-10R-20	10.0	20VCT @ 0.50A	10V @ 1.00A
14A-2.5R-24	2.5	24VCT @ 0.10A	12V @ 0.20A
14A-5.0R-24	5.0	24VCT @ 0.21A	12V @ 0.42A
14A-10R-24	10.0	24VCT @ 0.42A	12V @ 0.84A
14A-2.5R-28	2.5	28VCT @ 0.09A	14V @ 0.18A
14A-5.0R-28	5.0	28VCT @ 0.18A	14V @ 0.36A
14A-10R-28	10.0	28VCT @ 0.36A	14V @ 0.72A
14A-2.5R-36	2.5	36VCT @ 0.07A	18V @ 0.14A
14A-5.0R-36	5.0	36VCT @ 0.14A	18V @ 0.28A
14A-10R-36	10.0	36VCT @ 0.28A	18V @ 0.56A

VA (Size)	Dimensions						Sq. Pin Dimensions	Mtg. Dim. M	Mtg. Screw		Wgt
	L	W	H	A	B	C			Size	Qty	
2.5	1.62" 41.3mm	1.43" 36.5mm	1.12" 28.6mm	0.200" 5.08mm	0.250" 6.35mm	1.000" 25.4mm	0.025" 0.635mm	1.06" 26.9mm	#4	2	0.25 lbs 0.113 kg
5.0	1.62" 41.3mm	1.43" 36.5mm	1.37" 34.9mm	0.200" 5.08mm	0.400" 10.16mm	1.000" 25.4mm	0.025" 0.635mm	1.06" 26.9mm	#4	2	0.37 lbs 0.168 kg
10.0	1.87" 47.6mm	1.56" 39.7mm	1.37" 34.9mm	0.200" 5.08mm	0.400" 10.16mm	1.140" 29.0mm	0.038" 0.965mm	1.25" 31.7mm	#4	2	0.53 lbs 0.240 kg

*NOTE: Previously this dimension was 1.31"; now it is 1.43".

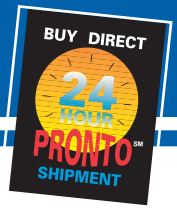
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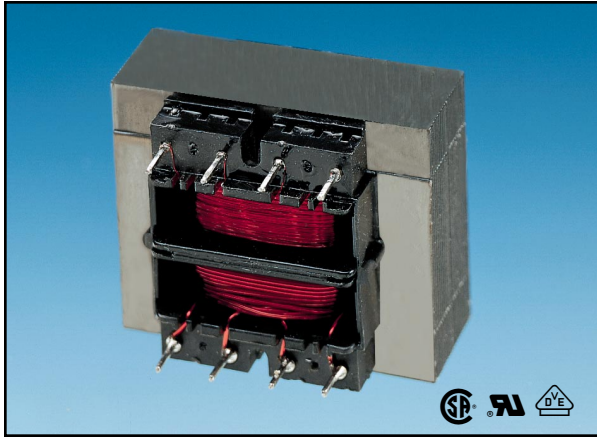
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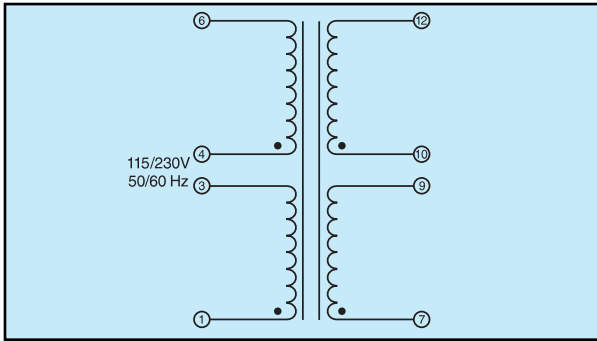
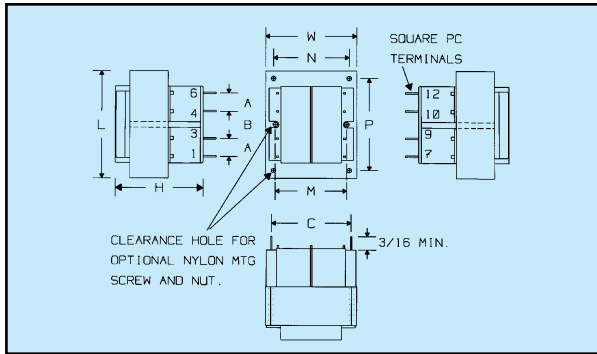
Signal's 14A transformers are used in low power applications and provide the high isolation, creepage and clearance necessary to comply with international safety standards.

General Specifications

- **Power** – 20 VA to 56 VA
- **Dielectric Strength** – 4000VRMS Hipot
- **Primaries** – Dual primaries (115/230V - 50/60 Hz)
- **Secondaries** – Series or parallel secondaries
- **Electrostatic Shield** – Not necessary, split or dual bobbin construction
- **Insulation** – Class F insulation (155°C)
- **Flammability Rating** – Bobbin and wrap around shroud material meet UL 94V0

Agency Standards

- UL recognized to UL 506 (File #E63829)
- CSA certified to C22.2 #66 (File #LR 51265)
- VDE certified to VDE 0805 / EN 60950 (File #1446)
- VDE certified to IEC 950



Part No.	VA (Size)	Secondary RMS Rating	
		Series	Parallel
14A-20-10	20	10VCT @ 2.0A	5V @ 4.0A
14A-30-10	30	10VCT @ 3.0A	5V @ 6.0A
14A-56-10	56	10VCT @ 5.6A	5V @ 11.2A
14A-20-12	20	12.6VCT @ 1.6A	6.3V @ 3.2A
14A-30-12	30	12.6VCT @ 2.4A	6.3V @ 4.8A
14A-56-12	56	12.6VCT @ 4.4A	6.3V @ 8.8A
14A-20-16	20	16VCT @ 1.25A	8V @ 2.5A
14A-30-16	30	16VCT @ 1.9A	8V @ 3.8A
14A-56-16	56	16VCT @ 3.5A	8V @ 7.0A
14A-20-20	20	20VCT @ 1.0A	10V @ 2.0A
14A-30-20	30	20VCT @ 1.5A	10V @ 3.0A
14A-56-20	56	20VCT @ 2.8A	10V @ 5.6A
14A-20-24	20	24VCT @ 0.83A	12V @ 1.66A
14A-30-24	30	24VCT @ 1.25A	12V @ 2.50A
14A-56-24	56	24VCT @ 2.33 A	12V @ 4.66A
14A-20-28	20	28VCT @ 0.72A	14V @ 1.44A
14A-30-28	30	28VCT @ 1.06A	14V @ 2.12A
14A-56-28	56	28VCT @ 2.0A	14V @ 4.0A
14A-20-36	20	36VCT @ 0.56A	18V @ 1.12A
14A-30-36	30	36VCT @ 0.82A	18V @ 1.64A
14A-56-36	56	36VCT @ 1.56A	18V @ 3.12A

VA (Size)	Dimensions						Sq. Pin Dimensions	Mtg. Dim.			Mtg. Screw		Wgt
	L	W	H	A	B	C		M	N	P	Size	Qty	
20	2.25" 57.2mm	1.87" 47.6mm	1.62" 41.3mm	0.400" 10.2mm	0.400" 10.2mm	1.460" 37.1mm	0.038" 0.97mm	1.50" 38.1mm	-	-	#4	2	0.90 lbs 0.41 kg
30	2.62" 66.7mm	1.18" 55.5mm	1.56" 39.7mm	0.550" 13.9mm	0.275" 7.0mm	1.680" 42.7mm	0.045" 1.14 mm	-	1.75" 44.4mm	2.18" 55.5mm	#6	4	1.15 lbs 0.52 kg
56	3.00" 76.2mm	2.50" 63.5mm	1.81" 46.0mm	0.600" 15.2mm	0.300" 7.6mm	1.900" 48.3mm	0.045" 1.14mm	-	2.00" 50.8mm	2.50" 6.35mm	#6	4	1.70 lbs 0.77 kg

If you don't see a specific part that meets your requirement, see page 31 for our custom magnetics design data sheet.

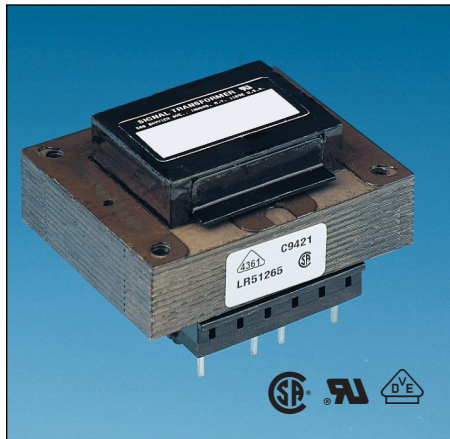


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One-4-All™ International Triple Output Transformers • Printed Circuit Mount



For 5 VDC and ±12 VDC or ±15 VDC Regulated Power Supplies Which Require International Safety Certification



Signal's 14A triple output transformers have pc board mount capability plus all of the performance features of our split bobbin 14A series.

General Specifications

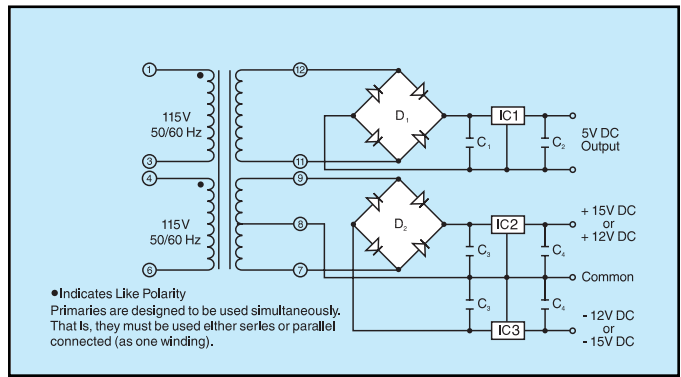
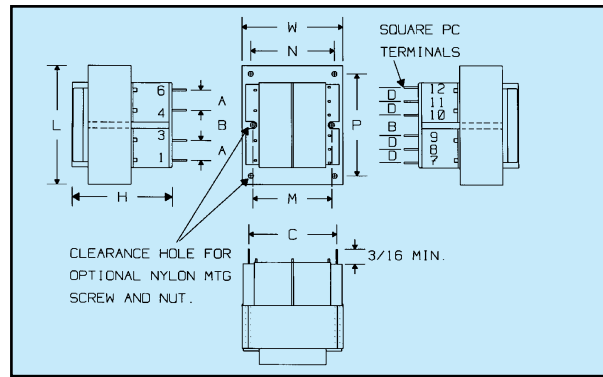
- **Power** — 20 VA to 56 VA
- **Dielectric Strength** – 4000VRMS Hipot
- **Primaries** – Dual primaries (115/230V - 50/60 Hz)
Input range (100V to 130V or 200V to 260V - 50/60 Hz)
- **Secondaries** – Dual complimentary outputs (5 VDC with ±12 VDC or 5 VDC with ±15 VDC)
- **Electrostatic Shield** – Not necessary, split bobbin construction
- **Insulation** – Class F insulation (155°C)
- **Flammability Rating** – Bobbin and shroud material meet UL 94V0

Agency Standards

- UL recognized to UL 506 (File #E63829)
- CSA certified to C22.2 #66 (File #LR 51265)
- VDE certified to VDE 0805 / EN 60950 (File #4361)
- VDE certified to IEC 950

Part Number	VA (Size)	DC Output		Suggested Components						C ₂ C ₄ See Note ①	
		Regulator I	Regulator II	C ₁	C ₃	IC1③	IC2③	IC3③	D1④	D2④	
14A-20-512	20	5V @ 750mA	±12V @ 200mA	2.3 KMFD @ 50 VDC	600 MFD @ 50 VDC	LM-323K-5	LM-340K-12	LM-320K-12	PE20	PF20	
14A-20-515	20	5V @ 750mA	±15V @ 175mA	50 VDC	50 VDC	LM-323K-5	LM-340K-15	LM-320K-15	PE20	PF20	
14A-30-512	30	5V @ 1.25A	±12V @ 250mA	4.1 KMFD @ 50 VDC	1.1 KMFD @ 50 VDC	LM-323K-5	LM-340K-12	LM-320K-12	PE20	PF20	
14A-30-515	30	5V @ 1.25A	±15V @ 200mA	15 VDC	600 MFD @ 50 VDC	LM-323K-5	LM-340K-15	LM-320K-15	PE20	PF20	
14A-56-512	56	5V @ 3A	±12V @ 300mA	10.0 KMFD @ 15 VDC	1.1 KMFD @ 50 VDC	LM-338②	LM-340K-12	LM-320K-12	PP20	PF20	
14A-56-515	56	5V @ 3A	±15V @ 250mA	15 VDC	50 VDC	LM-338②	LM-340K-15	LM-320K-15	PP20	PF20	

Note ①: Output capacitors C₂ and C₄ are required to stabilize regulators. Values can be 1MFD min. tantalum or 10MFD min. electrolytic, 20V min.
 Note ②: LM-338 is an adjustable regulator and MFR's specifications (National Semiconductor) should be consulted for values of external components.
 Note ③: All IC's are National Semiconductor types.
 Note ④: All bridges are EDI types



VA (Size)	Dimensions								Sq. Pin Dimensions	Mtg. Dim.			Mtg. Screw		Wgt
	L	W	H	A	B	C	D	M		N	P	Size	Qty		
20	2.25" 57.2mm	1.87" 47.6mm	1.62" 41.3mm	0.400" 10.2mm	0.400" 10.2mm	1.460" 37.1mm	0.200" 5.1mm	0.038" 0.97mm	1.50" 38.1mm	-	-	#4	2	0.90 lbs 0.41 kg	
30	2.62" 66.7mm	2.18" 55.5mm	1.56" 39.7mm	0.550" 13.9mm	0.275" 7.0mm	1.680" 42.7mm	0.275" 7.0mm	0.045" 1.14mm	-	1.75" 44.5mm	2.18" 55.4mm	#6	4	1.15 lbs 0.52 kg	
56	3.00" 76.2mm	2.50" 63.5mm	1.81" 46.0mm	0.600" 15.2mm	0.300" 7.6mm	1.900" 48.3mm	0.300" 7.6mm	0.045" 1.14mm	-	2.00" 50.8mm	2.50" 63.5mm	#6	4	1.70 lbs 0.77 kg	

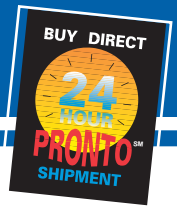
If you don't see a specific part that meets your requirement, see page 31 for our custom magnetics design data sheet.

Signal Transformer

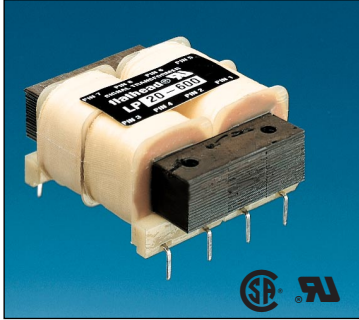
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Flathead™ Low Profile Transformers Printed Circuit Mount



For Low Power and Critical Height Applications



Signal's LP transformers use hum-bucking (semi toroidal) construction that minimizes radiated magnetic fields. These transformers are ideal for critical low height pc board applications.

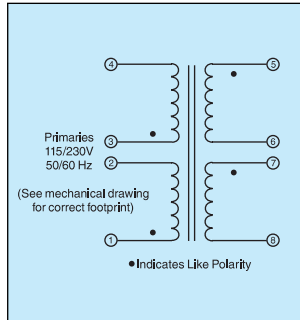
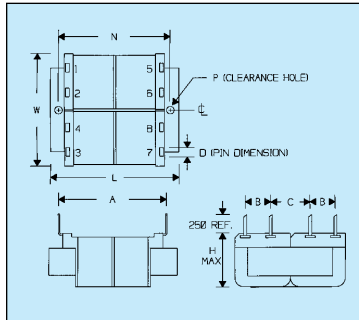
General Specifications

- **Power** – 2 VA to 48 VA
- **Dielectric Strength** – 1500VRMS Hipot
- **Primaries** – Dual primaries (115V / 230V - 50/60 Hz)
- **Secondaries** – Series or parallel secondaries
- **Electrostatic Shield** – Not necessary, split bobbin construction
- **Magnetic Field** – Reduced magnetic radiation
- **Height** – .65 to 1.375 inches high
- **Insulation** – Class B insulation (130°C)

Agency Standards

- UL recognized to UL 506 (File #E63829)
- CSA certified to C22.2 #66 (File #LR 51265)

Part No.	VA (Size)	Secondary RMS Rating	
		Series	Parallel
LP-10-250	2	10VCT @ 250mA	5V @ 500mA
LP-10-600	6	10VCT @ 600mA	5V @ 1.2A
LP-10-1200	12	10VCT @ 1200mA	5V @ 2.4A
LP-10-2400	24	10VCT @ 2.40A	5V @ 4.80A
LP-10-4800	48	10VCT @ 4.80A	5V @ 9.60A
LP-12-200	2	12.6VCT @ 200mA	6.3V @ 400mA
LP-12-450	6	12.6VCT @ 450mA	6.3V @ 900mA
LP-12-900	12	12.6VCT @ 900mA	6.3V @ 1.8A
LP-12-1900	24	12.6VCT @ 1.90A	6.3V @ 3.80A
LP-12-3800	48	12.6VCT @ 3.80A	6.3V @ 7.60A
LP-16-150	2	16VCT @ 150mA	8V @ 300mA
LP-16-350	6	16VCT @ 350mA	8V @ 700mA
LP-16-700	12	16VCT @ 700mA	8V @ 1.4A
LP-16-1500	24	16VCT @ 1.50A	8V @ 3.00A
LP-16-3000	48	16VCT @ 3.00A	8V @ 6.00A
LP-20-125	2	20VCT @ 125mA	10V @ 250mA
LP-20-300	6	20VCT @ 300mA	10V @ 600mA
LP-20-600	12	20VCT @ 600mA	10V @ 1.2A
LP-20-1200	24	20VCT @ 1.20A	10V @ 2.40A
LP-20-2400	48	20VCT @ 2.40A	10V @ 4.80A
LP-24-100	2	24VCT @ 100mA	12V @ 200mA
LP-24-250	6	24VCT @ 250mA	12V @ 500mA
LP-24-500	12	24VCT @ 500mA	12V @ 1A
LP-24-1000	24	24VCT @ 1.00A	12V @ 2.00A
LP-24-2000	48	24VCT @ 2.00A	12V @ 4.00A
LP-30-85	2	30VCT @ 85mA	15V @ 170mA
LP-30-200	6	30VCT @ 200mA	15V @ 400mA
LP-30-400	12	30VCT @ 400mA	15V @ 800mA
LP-30-800	24	30VCT @ 800mA	15V @ 1.60A
LP-30-1600	48	30VCT @ 1.60A	15V @ 3.20A
LP-34-75	2	34VCT @ 75mA	17V @ 150mA
LP-34-170	6	34VCT @ 170mA	17V @ 340mA
LP-34-340	12	34VCT @ 340mA	17V @ 680mA
LP-34-700	24	34VCT @ 700mA	17V @ 1.40A
LP-34-1400	48	34VCT @ 1.40A	17V @ 2.80A
LP-40-60	2	40VCT @ 60mA	20V @ 120mA
LP-40-150	6	40VCT @ 150mA	20V @ 300mA
LP-40-300	12	40VCT @ 300mA	20V @ 600mA
LP-40-600	24	40VCT @ 600mA	20V @ 1.20A
LP-40-1200	48	40VCT @ 1.20A	20V @ 2.40A
LP-56-45	2	56VCT @ 45mA	28V @ 90mA
LP-56-100	6	56VCT @ 100mA	28V @ 200mA
LP-56-200	12	56VCT @ 200mA	28V @ 400mA
LP-56-425	24	56VCT @ 425mA	28V @ 850mA
LP-56-850	48	56VCT @ 850mA	28V @ 1.70A
LP-88-28	2	88VCT @ 28mA	44V @ 56mA
LP-88-65	6	88VCT @ 65mA	44V @ 130mA
LP-88-130	12	88VCT @ 130mA	44V @ 260mA
LP-120-20	2	120VCT @ 20mA	60V @ 40mA
LP-120-50	6	120VCT @ 50mA	60V @ 100mA
LP-120-100	12	120VCT @ 100mA	60V @ 200mA
LP-230-10	2	230VCT @ 10mA	115V @ 20mA
LP-230-25	6	230VCT @ 25mA	115V @ 50mA
LP-230-50	12	230VCT @ 50mA	115V @ 100mA



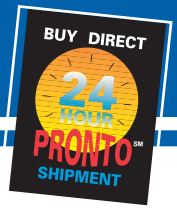
VA (Size)	A	B	C	L	W	H	N	D	P	Wgt
2	1.600" 40.6mm	0.375" 9.5mm	0.375" 9.5mm	1.87" 47.5mm	1.56" 39.6mm	0.650" 16.5mm	–	.041 x .020" 1.04 x 0.51mm	–	5 oz 0.14 kg
6	1.600" 40.6mm	0.375" 9.5mm	0.375" 9.5mm	1.87" 47.5mm	1.56" 39.6mm	0.850" 21.6mm	–	.041 x .020" 1.04 x 0.51mm	–	7 oz 0.20 kg
12	2.000" 50.8mm	0.500" 12.7mm	0.500" 12.7mm	2.50" 63.5mm	2.00" 50.8mm	1.065" 27.1mm	–	.041 x .020" 1.04 x 0.51mm	–	11 oz 0.31 kg
24	1.900" 48.3mm	0.600" 15.2mm	0.530" 13.5mm	2.87" 72.9mm	2.25" 57.2mm	1.250" 31.8mm	2.41" 61.2mm	.041(SQ pin) 1.04SQmm	Clearance Hole for #4 Screw	15 oz 0.43 kg
48	2.180" 55.4mm	0.600" 15.2mm	0.660" 16.8mm	3.12" 79.2mm	2.50" 63.5mm	1.375" 34.9mm	2.62" 66.5mm	.041(SQ pin) 1.04SQmm	Clearance Hole for #6 Screw	21 oz 0.60 kg

If you don't see a specific part that meets your requirement, see page 31 for our custom magnetics design data sheet.

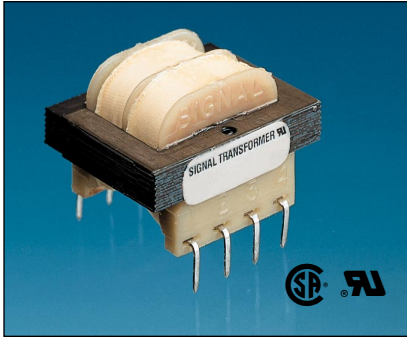


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Split/Tran™ Low Power Transformers



Printed Circuit Mount — Split Bobbin with High Isolation



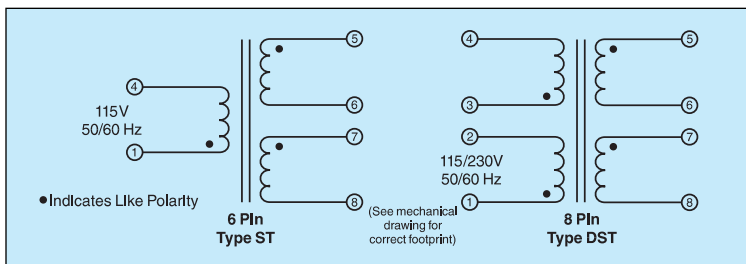
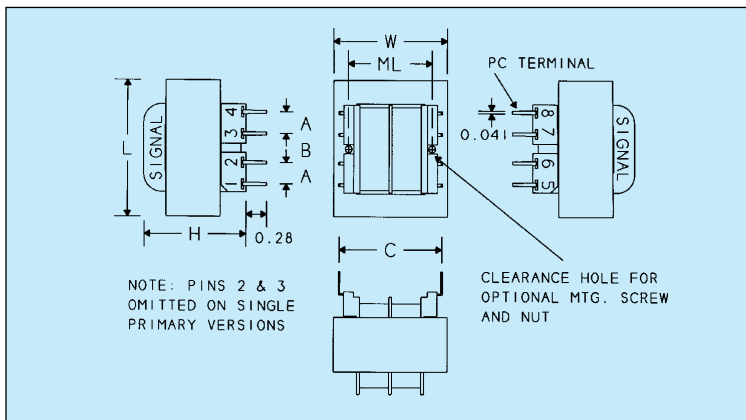
Signal's ST and DST transformers use a split bobbin that provides superior isolation and low capacitive coupling.

General Specifications

- Power – 1.1 VA to 36 VA
- Dielectric Strength – 2500VRMS Hipot
- Primaries – Single or dual primaries (115V or 115/230V -50/60 Hz)
- Secondaries – Series or parallel secondaries
- Electrostatic Shield – Not necessary, split bobbin construction
- Insulation – Class B insulation (130°C)
- Mounting Hardware – See chart

Agency Standards

- UL recognized to UL 506 (File #E63829)
- CSA certified to C22.2 #66 (File #LR 51265)



Part Number		Secondary RMS Rating	
Single 115V 6 Pin	Dual 115/230V 8 Pin	Series	Parallel
ST-2-10	DST-2-10	10VCT @ 0.11A	5V @ 0.22A
ST-3-10	DST-3-10	10VCT @ 0.25A	5V @ 0.5A
ST-4-10	DST-4-10	10VCT @ 0.6A	5A @ 1.2A
ST-5-10	DST-5-10	10VCT @ 1.2A	5V @ 2.4A
ST-6-10	DST-6-10	10VCT @ 2.0A	5V @ 4.0A
ST-7-10	DST-7-10	10VCT @ 3.6A	5V @ 7.2A
ST-2-12	DST-2-12	12.6VCT @ 0.09A	6.3V @ 0.18A
ST-3-12	DST-3-12	12.6VCT @ 0.2A	6.3V @ 0.4A
ST-4-12	DST-4-12	12.6VCT @ 0.5A	6.3V @ 1.0A
ST-5-12	DST-5-12	12.6VCT @ 1.0A	6.3V @ 2.0A
ST-6-12	DST-6-12	12.6VCT @ 1.6A	6.3V @ 3.2A
ST-7-12	DST-7-12	12.6VCT @ 2.85A	6.3V @ 5.7A
ST-2-16	DST-2-16	16VCT @ 0.07A	8V @ 0.14A
ST-3-16	DST-3-16	16VCT @ 0.15A	8V @ 0.3A
ST-4-16	DST-4-16	16VCT @ 0.4A	8V @ 0.8A
ST-5-16	DST-5-16	16VCT @ 0.8A	8V @ 1.6A
ST-6-16	DST-6-16	16VCT @ 1.25A	8V @ 2.5A
ST-7-16	DST-7-16	16VCT @ 2.25A	8V @ 4.5A
ST-2-20	DST-2-20	20VCT @ 0.055A	10V @ 0.11A
ST-3-20	DST-3-20	20VCT @ 0.12A	10V @ 0.24A
ST-4-20	DST-4-20	20VCT @ 0.3A	10V @ 0.6A
ST-5-20	DST-5-20	20VCT @ 0.6A	10V @ 1.2A
ST-6-20	DST-6-20	20VCT @ 1.0A	10V @ 2.0A
ST-7-20	DST-7-20	20VCT @ 1.8A	10V @ 3.6A
ST-2-24	DST-2-24	24VCT @ 0.045A	12V @ 0.09A
ST-3-24	DST-3-24	24VCT @ 0.1A	12V @ 0.2A
ST-4-24	DST-4-24	24VCT @ 0.25A	12V @ 0.5A
ST-5-24	DST-5-24	24VCT @ 0.5A	12V @ 1.0A
ST-6-24	DST-6-24	24VCT @ 0.8A	12V @ 1.6A
ST-7-24	DST-7-24	24VCT @ 1.5A	12V @ 3.0A
ST-2-28	DST-2-28	28VCT @ 0.04A	14V @ 0.08A
ST-3-28	DST-3-28	28VCT @ 0.085A	14V @ 0.17A
ST-4-28	DST-4-28	28VCT @ 0.2A	14V @ 0.4A
ST-5-28	DST-5-28	28VCT @ 0.42A	14V @ 0.84A
ST-6-28	DST-6-28	28VCT @ 0.7A	14V @ 1.4A
ST-7-28	DST-7-28	28VCT @ 1.3A	14V @ 2.6A
ST-2-36	DST-2-36	36VCT @ 0.03A	18V @ 0.06A
ST-3-36	DST-3-36	36VCT @ 0.065A	18V @ 0.13A
ST-4-36	DST-4-36	36VCT @ 0.17A	18V @ 0.34A
ST-5-36	DST-5-36	36VCT @ 0.35A	18V @ 0.7A
ST-6-36	DST-6-36	36VCT @ 0.55A	18V @ 1.1A
ST-7-36	DST-7-36	36VCT @ 1.0A	18V @ 2.0A
ST-2-48	DST-2-48	48VCT @ 0.023A	24V @ 0.046A
ST-3-48	DST-3-48	48VCT @ 0.05A	24V @ 0.1A
ST-4-48	DST-4-48	48VCT @ 0.125A	24V @ 0.25A
ST-5-48	DST-5-48	48VCT @ 0.25A	24V @ 0.5A
ST-6-48	DST-6-48	48VCT @ 0.4A	24V @ 0.8A
ST-7-48	DST-7-48	48VCT @ 0.75A	24V @ 1.5A
ST-2-56	DST-2-56	56VCT @ 0.02A	28V @ 0.04A
ST-3-56	DST-3-56	56VCT @ 0.045A	28V @ 0.09A
ST-4-56	DST-4-56	56VCT @ 0.11A	28V @ 0.22A
ST-5-56	DST-5-56	56VCT @ 0.22A	28V @ 0.44A
ST-6-56	DST-6-56	56VCT @ 0.35A	28V @ 0.7A
ST-7-56	DST-7-56	56VCT @ 0.65A	28V @ 1.3A
ST-2-120	DST-2-120	120VCT @ 0.01A	60V @ 0.02A
ST-3-120	DST-3-120	120VCT @ 0.02A	60V @ 0.04A
ST-4-120	DST-4-120	120VCT @ 0.05A	60V @ 0.1A
ST-5-120	DST-5-120	120VCT @ 0.1A	60V @ 0.2A
ST-6-120	DST-6-120	120VCT @ 0.16A	60V @ 0.32A
ST-7-120	DST-7-120	120VCT @ 0.3A	60V @ 0.6A

Size	VA	L	W	H	ML	A	B	C	Optional Mtg. Screw & Nut*	Wgt
2	1.1	1.37" 34.9mm	1.12" 28.6mm	1.31" 23.8mm	—	.250" 6.4mm	.250" 6.4mm	1.200" 30.5mm	None	0.17 lbs 0.08 kg
3	2.4	1.37" 34.9mm	1.12" 28.6mm	1.18" 30.1mm	—	.250" 6.4mm	.250" 6.4mm	1.200" 30.5mm	None	0.25 lbs 0.11 kg
4	6	1.62" 41.3mm	1.31" 33.3mm	1.31" 33.3mm	1.06 26.9mm	.250" 6.4mm	.350" 8.9mm	1.280" 32.5mm	4-40 x 1.37 Nylon	0.44 lbs 0.20 kg
5	12	1.87" 47.6mm	1.56" 39.7mm	1.43" 36.5mm	1.25 31.8mm	.300" 7.6mm	.400" 10.2mm	1.410" 35.8mm	4-40 x 1.37 Nylon 4-40 x 34.9mm	0.70 lbs 0.32 kg
6	20	2.25" 57.2mm	1.87" 47.6mm	1.43" 36.5mm	1.30" 38.1mm	.300" 7.6mm	.400" 10.2mm	1.600" 40.6mm	4-40 x 1.37 Nylon 4-40 x 34.9mm	0.80 lbs 0.36 kg
7	36	2.62" 66.7mm	2.18" 55.5mm	1.56" 39.7mm	†	.400" 10.2mm	.400" 10.2mm	1.850" 47.0mm	†	1.1 lbs 0.50 kg

* Available from Signal: Part No. ST-MS (Screw) & Part No. ST-MN (Nut).
† Size 7 has 4 mtg. holes on 2.18 x 1.75 centers for a #6 screw. Need not be nylon.

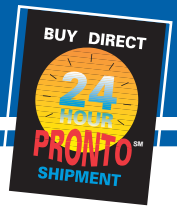
If you don't see a specific part that meets your requirement, see page 31 for our custom magnetics design data sheet.

Signal Transformer

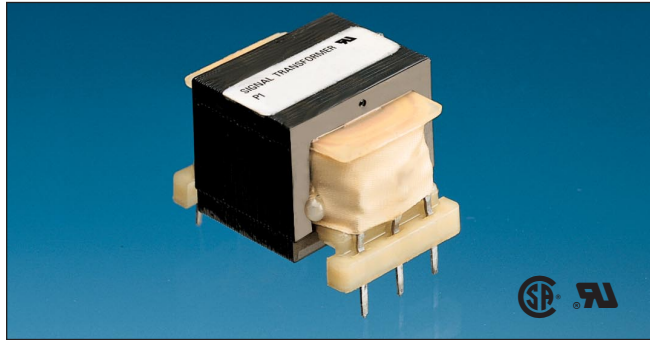
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500 Bayview Avenue, Inwood, New York 11096

Printed Circuit Power Transformers Printed Circuit Mount



Miniature Low Power Transformers



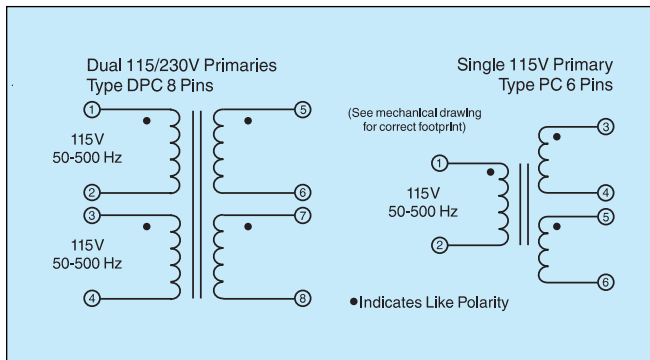
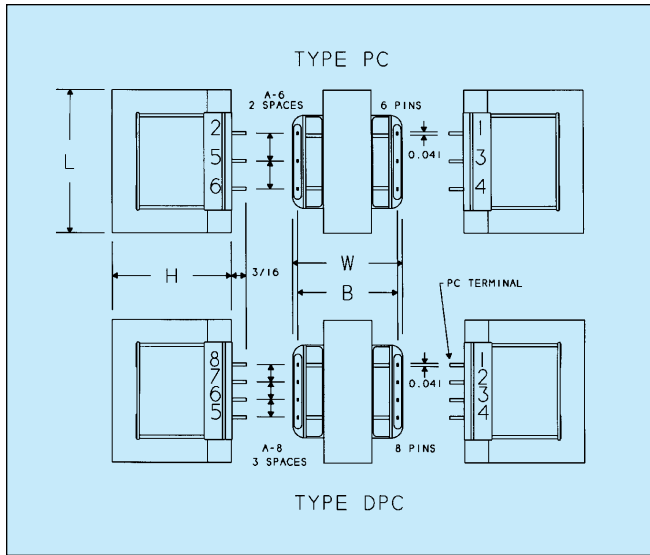
Signal's PC low power transformers are designed to operate between 50 and 500 Hz without any degradation in output voltage.

General Specifications

- Power – 1.0 VA to 24 VA
- Dielectric Strength – 1500VRMS Hipot
- Primaries – Single or dual primaries (115V or 115/230V - 50-500 Hz)
- Secondaries – Series or parallel secondaries
- Insulation – Class B insulation (130°C)
- Mounting Brackets – See chart

Agency Standards

- UL recognized to UL 506 (File #E63829)
- CSA certified to C22.2 #66 (File #LR 51265)



Primary 50/500 Hz		VA (Size)	Secondary RMS Rating	
Single 115V (6 Pin)	Dual 115/230V (8 Pin)		Series	Parallel
PC-10-90	DPC-10-90	1.0	10VCT @ 90mA	5V @ 180mA
PC-10-120	DPC-10-120	1.2	10VCT @ 120mA	5V @ 240mA
PC-10-440	DPC-10-440	4.4	10VCT @ 440mA	5V @ 880mA
PC-10-1000	DPC-10-1000	10.0	10VCT @ 1.0A	5V @ 2.0A
PC-10-2400	DPC-10-2400	24.0	10VCT @ 2.4A	5V @ 4.8A
PC-12-70	DPC-12-70	1.0	12.6VCT @ 70mA	6.3V @ 140mA
PC-12-100	DPC-12-100	1.2	12.6VCT @ 100mA	6.3V @ 200mA
PC-12-350	DPC-12-350	4.4	12.6VCT @ 350mA	6.3V @ 700mA
PC-12-800	DPC-12-800	10.0	12.6VCT @ 800mA	6.3V @ 1.6A
PC-12-2000	DPC-12-2000	24.0	12.6VCT @ 2.0A	6.3V @ 4.0A
PC-16-55	DPC-16-55	1.0	16VCT @ 55mA	8V @ 110mA
PC-16-75	DPC-16-75	1.2	16VCT @ 75mA	8V @ 150mA
PC-16-260	DPC-16-260	4.4	16VCT @ 260mA	8V @ 520mA
PC-16-640	DPC-16-640	10.0	16VCT @ 640mA	8V @ 1.28A
PC-16-1500	DPC-16-1500	24.0	16VCT @ 1.50A	8V @ 3.0A
PC-20-45	DPC-20-45	1.0	20VCT @ 45mA	10V @ 90mA
PC-20-60	DPC-20-60	1.2	20VCT @ 60mA	10V @ 120mA
PC-20-220	DPC-20-220	4.4	20VCT @ 220mA	10V @ 440mA
PC-20-500	DPC-20-500	10.0	20VCT @ 500mA	10V @ 1.0A
PC-20-1200	DPC-20-1200	24.0	20VCT @ 1.20A	10V @ 2.40A
PC-24-35	DPC-24-35	1.0	24VCT @ 35mA	12V @ 70mA
PC-24-50	DPC-24-50	1.2	24VCT @ 50mA	12V @ 100mA
PC-24-180	DPC-24-180	4.4	24VCT @ 180mA	12V @ 360mA
PC-24-450	DPC-24-450	10.0	24VCT @ 450mA	12V @ 900mA
PC-24-1000	DPC-24-1000	24.0	24VCT @ 1.0A	12V @ 2.0A
PC-28-30	DPC-28-30	1.0	28VCT @ 30mA	14V @ 60mA
PC-28-40	DPC-28-40	1.2	28VCT @ 40mA	14V @ 80mA
PC-28-160	DPC-28-160	4.4	28VCT @ 160mA	14V @ 320mA
PC-28-360	DPC-28-360	10.0	28VCT @ 360mA	14V @ 720mA
PC-28-800	DPC-28-800	24.0	28VCT @ 800mA	14V @ 1.60A
PC-34-25	DPC-34-25	1.0	34VCT @ 25mA	17V @ 50mA
PC-34-35	DPC-34-35	1.2	34VCT @ 35mA	17V @ 70mA
PC-34-125	DPC-34-125	4.4	34VCT @ 125mA	17V @ 250mA
PC-34-300	DPC-34-300	10.0	34VCT @ 300mA	17V @ 600mA
PC-34-700	DPC-34-700	24.0	34VCT @ 700mA	17V @ 1.40A
PC-40-20	DPC-40-20	1.0	40VCT @ 20mA	20V @ 40mA
PC-40-30	DPC-40-30	1.2	40VCT @ 30mA	20V @ 60mA
PC-40-110	DPC-40-110	4.4	40VCT @ 110mA	20V @ 220mA
PC-40-250	DPC-40-250	10.0	40VCT @ 250mA	20V @ 500mA
PC-40-600	DPC-40-600	24.0	40VCT @ 600mA	20V @ 1.20A
PC-56-15	DPC-56-15	1.0	56VCT @ 15mA	28V @ 30mA
PC-56-20	DPC-56-20	1.2	56VCT @ 20mA	28V @ 40mA
PC-56-80	DPC-56-80	4.4	56VCT @ 80mA	28V @ 160mA
PC-56-180	DPC-56-180	10.0	56VCT @ 180mA	28V @ 360mA
PC-56-420	DPC-56-420	24.0	56VCT @ 420mA	28V @ 840mA
PC-120-8	DPC-120-8	1.0	120VCT @ 8mA	60V @ 16mA
PC-120-10	DPC-120-10	1.2	120VCT @ 10mA	60V @ 20mA
PC-120-35	DPC-120-35	4.4	120VCT @ 35mA	60V @ 70mA
PC-120-85	DPC-120-85	10.0	120VCT @ 85mA	60V @ 170mA

See Table on page 38 for method of determining RMS secondary current ratings.

VA (Size)	L	W	H	A-6 (6 Pin)	A-8 (8 Pin)	B	Wgt	OPTIONAL BRACKET*		
								No.	MW	MD
1.0	1.00" 25.4mm	1.37" 34.92mm	0.83" 21.08mm	0.250" 6.35mm	0.200" 5.08mm	1.230" 31.2mm	2.5 oz 0.07 kg	-	-	-
1.2	1.37" 34.9mm	1.12" 28.6mm	1.18" 30.15mm	0.312" 7.92mm	0.200" 5.08mm	1.030" 26.2mm	3 oz 0.08 kg	-	-	-
4.4	1.62" 41.3mm	1.25" 31.8mm	1.37" 34.92mm	0.400" 10.16mm	0.250" 6.35mm	1.130" 28.7mm	5 oz 0.14 kg	-	-	-
10.0	1.87" 47.6mm	1.43" 36.5mm	1.62" 41.27mm	0.400" 10.16mm	0.250" 6.35mm	1.330" 38.8mm	9 oz 0.23 kg	10-BR	1.64" 41.7mm	1.12" 28.6mm
24.0	1.62" 41.3mm	2.25" 57.2mm	1.37" 34.93mm	0.400" 10.16mm	0.250" 6.35mm	2.130" 54.1mm	12 oz 0.34 kg	24-BR	1.37" 34.9mm	2.00" 50.8mm

*An optional "Slide On" Mounting Bracket is available for sizes 10 & 24. The brackets do not use up any extra "Floor Space" but add 1/32" to the height of the transformer.

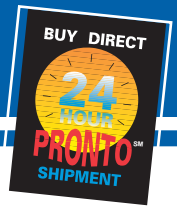
If you don't see a specific part that meets your requirement, see page 31 for our custom magnetics design data sheet.

Signal Transformer

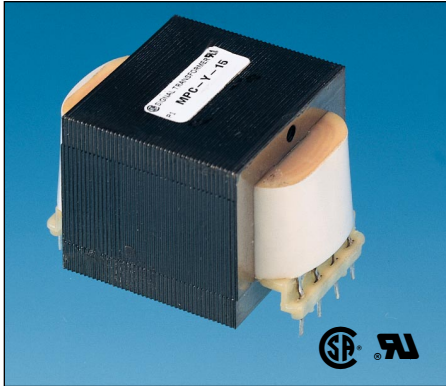
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500 Bayview Avenue, Inwood, New York 11096

Printed Circuit Triple Output Transformers Printed Circuit Mount



For 5 VDC and ± 12 VDC or ± 15 VDC Regulated Power Supplies



Signal's MPC, DMPC and MPL transformer series have all of the performance features of our PC and LP series.

MPC and DMPC Series

General Specifications

- **Power** – 10 VA and 24 VA
- **Dielectric Strength** – 1500VRMS Hipot
- **Primaries** – Single or dual primaries (115V or 115/230V nominal - 50-500 Hz)
Input range (100V to 130V or 200V to 260V - 50/60 Hz)
- **Secondaries** – Dual complimentary outputs (5 VDC with ± 12 VDC or 5 VDC with ± 15 VDC)
- **Insulation** – Class B insulation (130°C)
- **Brackets** – Available for 10 & 24 VA sizes (PN 10-BR & 24-BR)

Agency Standards

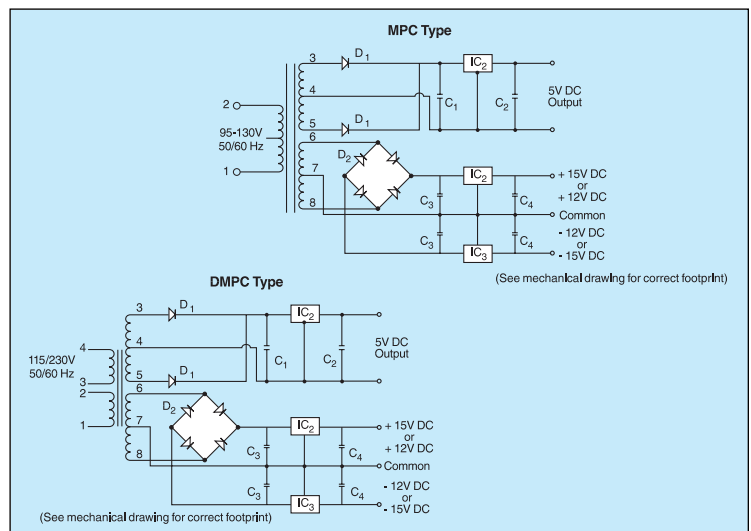
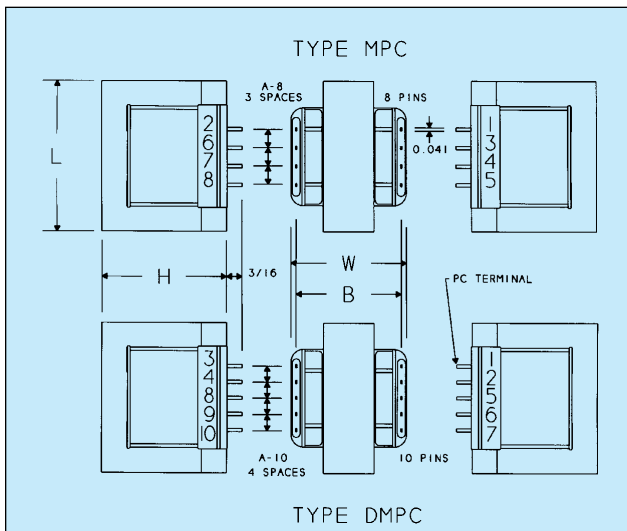
- UL recognized to UL 506 (File #E63829)
- CSA certified to C22.2 #66 (File #LR 51265)

MPC & DMPC TYPES

Part Number Primary 50/60 Hz		DC Output		Size	Suggested Components							
115V (8 Pin)	115/230V (10) Pin	Regulator I	Regulator II		C ₁	C ₂	C ₃	C ₄	D ₁ (2)	D ₂ (4)	IC ₁ *	IC ₂ *
MPC-X-12	DMPC-X-12	5 VDC 360mA	± 12 VDC 60mA	X	2100MFD 30V	2.7MFD 20V	250MFD 50V	10MFD 20V	1N4001	1N4002	LM341P-5.0	LM326N
MPC-X-15	DMPC-X-15	5 VDC 360mA	± 15 VDC 50mA	X	2100MFD 30V	2.7MFD 20V	250MFD 50V	10MFD 20V	1N4001	1N4002	LM341P-5.0	LM325N
MPC-Y-12	DMPC-Y-12	5 VDC 835mA	± 12 VDC 150mA	Y	4000MFD 20V	2.7MFD 20V	1000MFD 50V	2.7MFD 20V	1N4001	1N4002	LM340K-5.0	LM326N
MPC-Y-15	DMPC-Y-15	5 VDC 835mA	± 15 VDC 130mA	Y	4000MFD 20V	2.7MFD 20V	1000MFD 50V	2.7MFD 20V	1N4001	1N4002	LM340K-5.0	LM325N

* National Semiconductor

(Size)	L	W	H	A-8 (8 Pin)	A-10 (10 Pin)	B	Wgt	Optional Bracket		
								No.	MW	MD
X	1.87" 47.6mm	1.43" 36.5mm	1.62" 41.3mm	.250" 6.4mm	.200" 5.1mm	1.300" 33.0mm	.56 lbs .25 kg	10-BR	1.64" 41.6mm	1.12" 28.6mm
Y	1.62" 41.3mm	2.25" 57.2mm	1.37" 34.9mm	.250" 6.4mm	.200" 5.1mm	2.100" 53.3mm	.75 lbs .34 kg	24-BR	1.37" 34.9mm	2.00 50.8mm



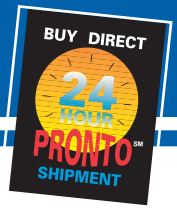
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Signal Transformer

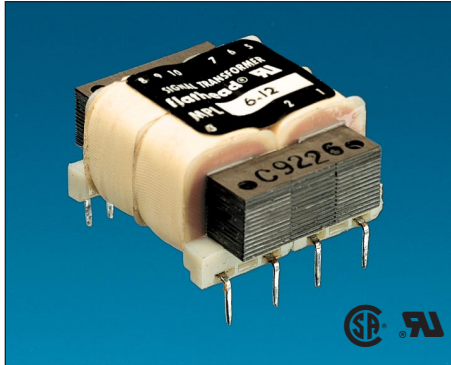
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500 Bayview Avenue, Inwood, New York 11096

Printed Circuit Triple Output Transformers Low Profile Printed Circuit Mount



For 5 VDC and ± 12 VDC or ± 15 VDC Regulated Power Supplies



MPL Series

General Specifications

- **Power** – 6 VA and 12 VA
- **Dielectric Strength** – 1500VRMS Hipot
- **Primaries** – Dual primaries (115/230V nominal - 50/60 Hz)
Input range (100V to 130V or 200V to 260V - 50/60 Hz)
- **Secondaries** – Dual complimentary outputs (5 VDC with ± 12 VDC or 5 VDC with ± 15 VDC)
- **Electrostatic Shield** – Not necessary, split bobbin construction
- **Magnetic Field** – Reduced magnetic radiation
- **Height** – .85 and 1.065 inches high
- **Insulation** – Class B insulation (130°C)

Agency Standards

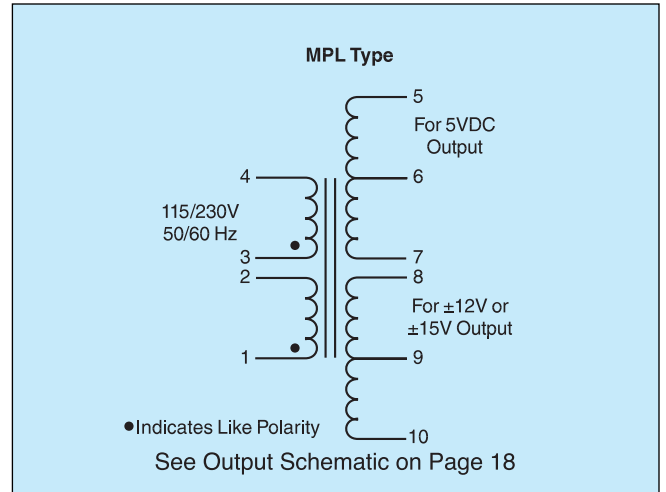
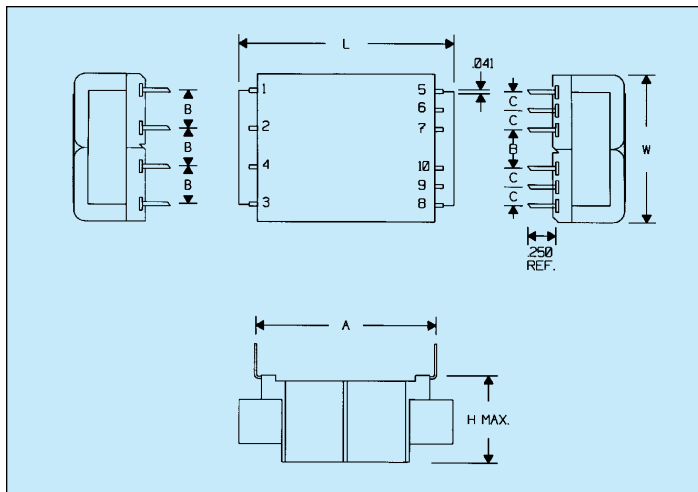
- UL recognized to UL 506 (File #E63829)
- CSA certified to C22.2 #66 (File #LR 51265)

MPL TYPES (Dual 115/230V Primary is Standard)

Part Number Primary 50/60 Hz	DC Output		VA (Size)	Suggested Components							
	Regulator I	Regulator II		C ₁	C ₂	C ₃	C ₄	D ₁ (2)	D ₂ (4)	IC ₁ *	1C ₂ *
MPL-6-12	5 VDC 135mA	± 12 VDC 40mA	6	1000MFD 20V	2.7MFD 20V	150MFD 50V	10MFD 20V	1N4001	1N4002	LM342P-5.0	LM326N
MPL-6-15	5 VDC 135mA	± 15 VDC 35mA	6	1000MFD 20V	2.7MFD 20V	150MFD 50V	10MFD 20V	1N4001	1N4002	LM342P-5.0	LM325N
MPL-12-12	5 VDC 270mA	± 12 VDC 85mA	12	2100MFD 30V	2.7MFD 20V	250MFD 50V	10MFD 20V	1N4001	1N4002	LM341P-5.0	LM326N
MPL-12-15	5 VDC 270mA	± 15 VDC 70mA	12	2100MFD 30V	2.7MFD 20V	250MFD 50V	10MFD 20V	1N4001	1N4002	LM341P-5.0	LM325N

*National Semiconductor

VA (Size)	L	W	H	A	B	C	Wgt
6	1.87" 47.6mm	1.56" 39.7mm	0.850" 21.6mm	1.600" 40.6mm	0.375" 9.5mm	0.187" 4.7mm	0.43 lbs 0.20 kg
12	2.50" 63.5mm	2.00" 50.8mm	1.065" 27.1mm	2.000" 50.8mm	0.500" 12.7mm	0.250" 6.4mm	0.68 lbs 0.31kg



If you don't see a specific part that meets your requirement, see page 31 for our custom magnetics design data sheet.

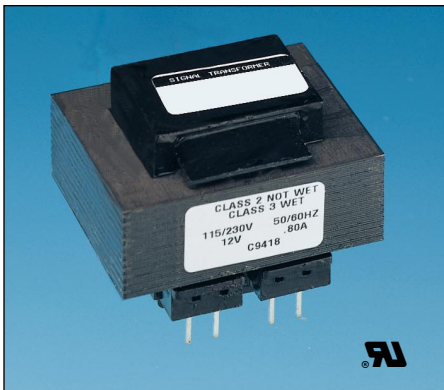


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Inherently or Non-inherently Limited



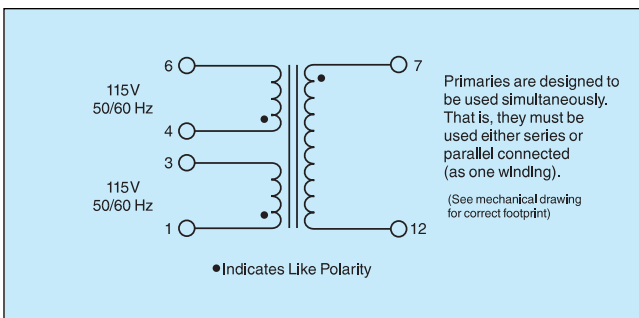
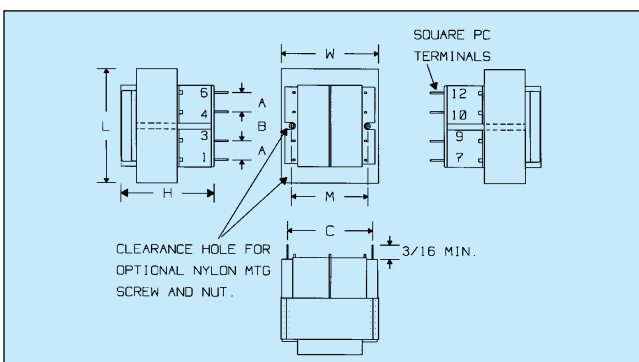
Signal's CL2 transformers are available in printed circuit and chassis mount versions. They are supplied as inherently or non-inherently limited units that are UL 1585 recognized.

General Specifications

- Power – 2.5 VA to 50 VA
- Dielectric Strength – 4000VRMS Hipot
- Primaries – Dual primaries (115/230V - 50/60 Hz)
- Secondary – Single secondary
- Class 2 Rating – Inherently or non-inherently limited
See secondary fuse requirements in tables below
- Electrostatic Shield – Not necessary, split or dual bobbin construction
- Insulation – Class F insulation (155°C)
- Flammability Rating – Bobbin and shroud material meet UL 94V0

Agency Standards

- UL recognized to UL 1585 Class 2 (File #E116583)



Part No.	Secondary RMS Rating	Secondary Fuse Req'd.
CL2-2.5-12	12V @ .20A	N/A*
CL2-2.5-24	24V @ .10A	N/A*
CL2-5.0-12	12V @ .42A	N/A*
CL2-5.0-24	24V @ .20A	N/A*
CL2-10-12	12V @ .83A	N/A*
CL2-10-24	24V @ .42A	N/A*
CL2-20-12	12V @ 1.66A	N/A*
CL2-20-24	24V @ .833A	N/A*
CL2-30-12	12V @ 2.50A	3.0A**
CL2-30-24	24V @ 1.25A	N/A*
CL2-50-12	12V @ 4.20A	5.0A**
CL2-50-24	24V @ 2.10A	2.5A**

* Inherently limited
 ** Non-inherently limited
 Maximum secondary fuse value specified
 All primaries are 115/230 volt 50/60 Hz

VA (Size)	Dimensions						Sq. Pin Dimension	Mtg. Dim.			Mtg. Screw		Wgt
	L	W	H	A	B	C		M	N	P	Size	Qty	
2.5	1.62" 41.3mm	1.31" 33.3mm	1.12" 28.6mm	.200" 5.1mm	.250" 6.4mm	1.000" 25.4mm	0.025" 0.64mm	1.06" 26.9mm	-	-	#4	2	0.25 lbs 0.11 kg
5.0	1.62" 41.3mm	1.31" 33.3mm	1.37" 34.9mm	.200" 5.1mm	.400" 10.2mm	1.000" 25.4mm	0.025" 0.64mm	1.06" 26.9mm	-	-	#4	2	0.37 lbs 0.17 kg
10.0	1.87" 47.6mm	1.56" 39.7mm	1.37" 34.9mm	.200" 5.1mm	.400" 10.2mm	1.140" 29.0mm	0.038" 0.97mm	1.25" 31.8mm	-	-	#4	2	0.53 lbs 0.24 kg
20.0	2.25" 57.2mm	1.87" 47.6mm	1.62" 41.3mm	.400" 10.2mm	.400" 10.2mm	1.460" 37.1mm	0.038" 0.97mm	1.50" 38.1mm	-	-	#4	2	0.90 lbs 0.41 kg
30.0	2.62" 66.7mm	2.18" 55.5mm	1.56" 39.7mm	.550" 14.0mm	.275" 7.0mm	1.680" 42.7mm	0.405" 1.14mm	-	1.75" 44.5mm	2.18" 55.5mm	#6	4	1.15 lbs 0.52 kg
50.0	3.00" 76.2mm	2.50" 63.5mm	1.81" 46.0mm	.600" 15.2mm	.300" 7.6mm	1.900" 48.3mm	0.405" 1.14mm	-	2.00" 50.8mm	2.50" 63.5mm	#6	4	1.70 lbs 0.77 kg

If you don't see a specific part that meets your requirement, see page 31 for our custom magnetics design data sheet.



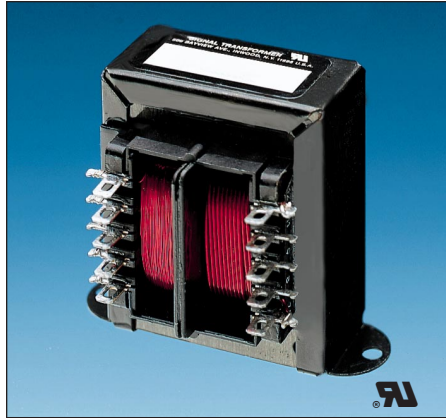
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500 Bayview Avenue, Inwood, New York 11096

Class 2 Transformers Chassis Mount



Inherently or Non-inherently Limited



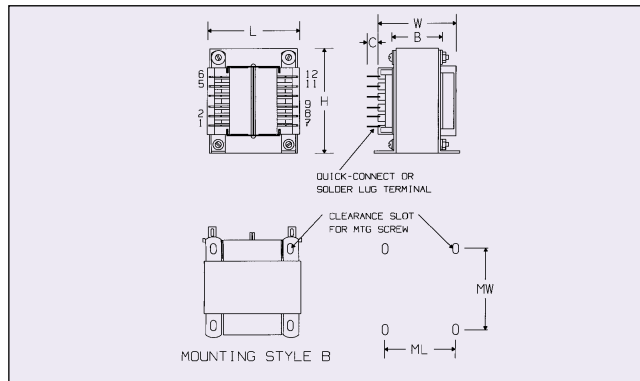
Signal's CL2 transformers are available in printed circuit and chassis mount versions. They are supplied as inherently or non-inherently limited units that are UL 1585 recognized.

General Specifications

- Power – 25 VA to 80 VA
- Dielectric Strength – 4000VRMS Hipot
- Primaries – Dual primaries (115/230V - 50/60 Hz)
- Secondary – Single secondary
- Class 2 Rating – Inherently or non-inherently limited
See secondary fuse requirements in tables below
- Electrostatic Shield – Not necessary, split or dual bobbin construction
- Terminals – Solder lug / quick-connect type terminals
- Insulation – Class F insulation (155°C)
- Flammability Rating – Bobbin and shroud material meet UL 94V0

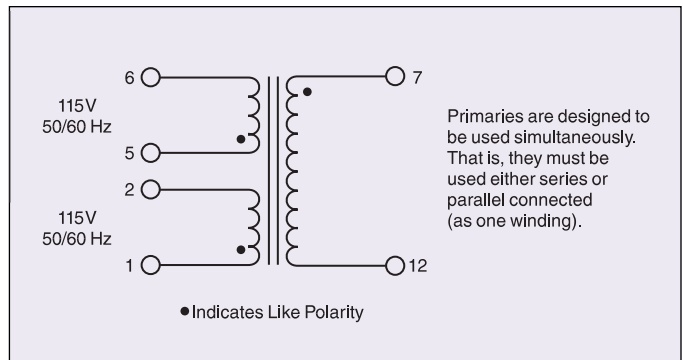
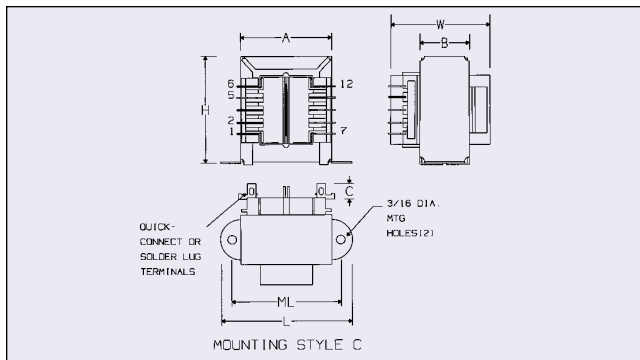
Agency Standards

- UL recognized to UL 1585 Class 2 (File #E116583)



Part No.	Secondary RMS Rating	Secondary Fuse Req'd.
CL2-25-12	12V @ 2.10A	2.5A**
CL2-25-24	24V @ 1.05A	N/A*
CL2-40-12	12V @ 3.33A	4.0A**
CL2-40-24	24V @ 1.66A	2.0A**
CL2-80-24	24V @ 3.33A	4.0A**

* Inherently limited
 ** Non-inherently limited
 Maximum secondary fuse value specified
 All primaries are 115/230 volt 50/60 Hz



VA (Size)	Dimensions						Terminals	Mtg. Style	Mtg. Dim.		Mtg. Screw	Wgt
	L	W	H	A	B	C			ML	MW		
25	2.81" 71.4mm	1.87" 47.6mm	2.31" 58.7mm	2.00" 50.8mm	1.12" 28.6mm	.31" 7.92	.187" 4.75mm	C	2.37" 60.3mm	—	#6	1.25 lbs 0.57kg
40	3.12" 79.4mm	2.06" 57.3mm	2.68" 68.2mm	2.25" 57.2mm	1.12" 28.6mm	.31" 7.92mm	.187" 4.75mm	C	2.81" 71.4mm	—	#6	1.6 lbs 0.73 kg
80	2.50" 63.5mm	2.37" 60.3mm	3.00" 76.2mm	—	1.37" 34.9mm	.31" 7.92mm	.187" 4.75mm	B	2.00" 50.8mm	2.18" 55.5mm	#6	2.8 lbs 1.27 kg

If you don't see a specific part that meets your requirement, see page 31 for our custom magnetics design data sheet.



CALL: 516-239-5777 • FAX: (24hrs) 516-239-7208
 500 Bayview Avenue, Inwood, New York 11096

Two-4-One™ Power Transformers Chassis Mount



Split Bobbin with High Isolation



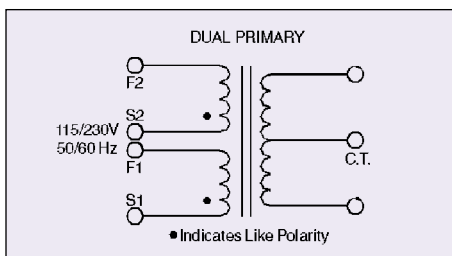
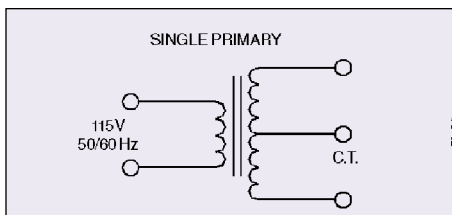
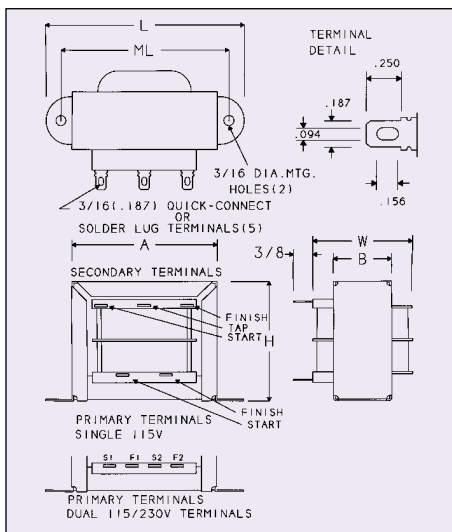
Signal's 241 transformers use a split bobbin that provides superior isolation and low capacitive coupling.

General Specifications

- Power – 2.4 VA to 100 VA
- Dielectric Strength – 2500VRMS Hipot
- Primaries – Single or dual primaries (115V or 115/230V - 50/60 Hz)
- Secondary – Single center tapped secondary
- Electrostatic Shield – Not necessary, split bobbin construction
- Terminals – Solder lug / quick-connect type terminals
- Insulation – Class B insulation (130°C)

Agency Standards

- UL recognized to UL 506 (File #E63829)
- CSA certified to C22.2 #66 (File #LR 51265)



Part Number		Secondary RMS Rating	Part Number		Secondary RMS Rating
Single 115V	Dual 115/230V		Single 115V	Dual 115/230V	
241-3-10	Not Available	10VCT @ 0.25A	241-3-28	Not Available	28VCT @ 0.085A
241-4-10	DP-241-4-10	10VCT @ 0.60A	241-4-28	DP-241-4-28	28VCT @ 0.20A
241-5-10	DP-241-5-10	10VCT @ 1.2A	241-5-28	DP-241-5-28	28VCT @ 0.42A
241-6-10	DP-241-6-10	10VCT @ 3.0A	241-6-28	DP-241-6-28	28VCT @ 1.1A
241-7-10	DP-241-7-10	10VCT @ 5.0A	241-7-28	DP-241-7-28	28VCT @ 2.0A
241-8-10	DP-241-8-10	10VCT @ 10A	241-8-28	DP-241-8-28	28VCT @ 3.6A
241-3-12	Not Available	12.6VCT @ 0.20A	241-3-36	Not Available	36VCT @ 0.065A
241-4-12	DP-241-4-12	12.6VCT @ 0.50A	241-4-36	DP-241-4-36	36VCT @ 0.17A
241-5-12	DP-241-5-12	12.6VCT @ 1.0A	241-5-36	DP-241-5-36	36VCT @ 0.35A
241-6-12	DP-241-6-12	12.6VCT @ 2.5A	241-6-36	DP-241-6-36	36VCT @ 0.85A
241-7-12	DP-241-7-12	12.6VCT @ 4.0A	241-7-36	DP-241-7-36	36VCT @ 1.5A
241-8-12	DP-241-8-12	12.6VCT @ 8.0A	241-8-36	DP-241-8-36	36VCT @ 2.8A
241-3-16	Not Available	16VCT @ 0.15A	241-3-48	Not Available	48VCT @ 0.05A
241-4-16	DP-241-4-16	16VCT @ 0.40A	241-4-48	DP-241-4-48	48VCT @ 0.125A
241-5-16	DP-241-5-16	16VCT @ 0.80A	241-5-48	DP-241-5-48	48VCT @ 0.25A
241-6-16	DP-241-6-16	16VCT @ 2.0A	241-6-48	DP-241-6-48	48VCT @ 0.63A
241-7-16	DP-241-7-16	16VCT @ 3.5A	241-7-48	DP-241-7-48	48VCT @ 1.2A
241-8-16	DP-241-8-16	16VCT @ 6.25A	241-8-48	DP-241-8-48	48VCT @ 2.0A
241-3-20	Not Available	20VCT @ 0.12A	241-3-56	Not Available	56VCT @ 0.045A
241-4-20	DP-241-4-20	20VCT @ 0.30A	241-4-56	DP-241-4-56	56VCT @ 0.11A
241-5-20	DP-241-5-20	20VCT @ 0.60A	241-5-56	DP-241-5-56	56VCT @ 0.22A
241-6-20	DP-241-6-20	20VCT @ 1.5A	241-6-56	DP-241-6-56	56VCT @ 0.54A
241-7-20	DP-241-7-20	20VCT @ 2.8A	241-7-56	DP-241-7-56	56VCT @ 1.00A
241-8-20	DP-241-8-20	20VCT @ 5.0A	241-8-56	DP-241-8-56	56VCT @ 1.8A
241-3-24	Not Available	24VCT @ 0.10A	241-3-120	Not Available	120VCT @ 0.02A
241-4-24	DP-241-4-24	24VCT @ 0.25A	241-4-120	DP-241-4-120	120VCT @ 0.05A
241-5-24	DP-241-5-24	24VCT @ 0.50A	241-5-120	DP-241-5-120	120VCT @ 0.10A
241-6-24	DP-241-6-24	24VCT @ 1.25A	241-6-120	DP-241-6-120	120VCT @ 0.25A
241-7-24	DP-241-7-24	24VCT @ 2.4A	241-7-120	DP-241-7-120	120VCT @ 0.50A
241-8-24	DP-241-8-24	24VCT @ 4.0A	241-8-120	DP-241-8-120	120VCT @ 0.85A

See page 38 for method of determining RMS secondary current ratings.

Dimensions								
Size	VA	L	W	H	A	B	ML	Wgt
3	2.4	2.06" 52.3mm	1.06" 26.9mm	1.18" 30.1mm	1.62" 41.3mm	0.56" 14.3mm	1.75" 44.5mm	0.25 lbs 0.11 kg
4	6	2.37" 60.3mm	1.25" 31.8mm	1.37" 34.9mm	1.68" 42.8mm	0.68" 17.4mm	2.00" 50.8mm	0.44 lbs 0.20 kg
5	12	2.81" 71.4mm	1.37" 34.9mm	1.62" 41.3mm	1.93" 49.2mm	0.81" 20.6mm	2.37" 60.3mm	0.7 lbs 0.32 kg
6	30	3.25" 82.6mm	1.68" 42.8mm	1.93" 49.2mm	2.31" 58.7mm	1.06" 26.9mm	2.81" 71.4mm	1.1 lbs 0.50 kg
7	56	3.68" 93.7mm	1.81" 46.0mm	2.25" 57.2mm	2.68" 68.2mm	1.06" 26.9mm	3.12" 79.4mm	1.7 lbs 0.77 kg
8	100	4.03" 102.4mm	2.25" 57.2mm	2.56" 65.1mm	3.06" 77.7mm	1.31" 33.3mm	3.50" 90.5mm	2.75 lbs 1.25 kg

If you don't see a specific part that meets your requirement, see page 31 for our custom magnetics design data sheet.

Signal Transformer

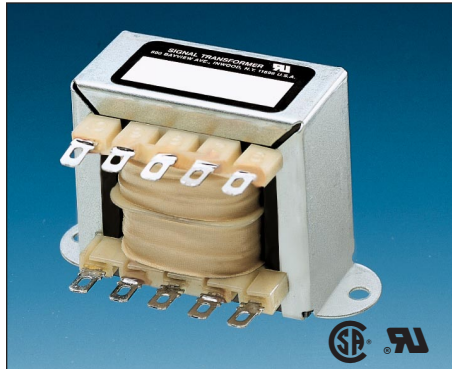
CALL: 516-239-5777 • FAX: (24hrs) 516-239-7208

500 Bayview Avenue, Inwood, New York 11096

Two-4-One™ Triple Output Transformers • Chassis Mount



For 5 VDC and ±12 VDC or ±15 VDC Regulated Power Supplies



Signal's MT and DMT transformers have all of the performance features of our 241 series.

General Specifications

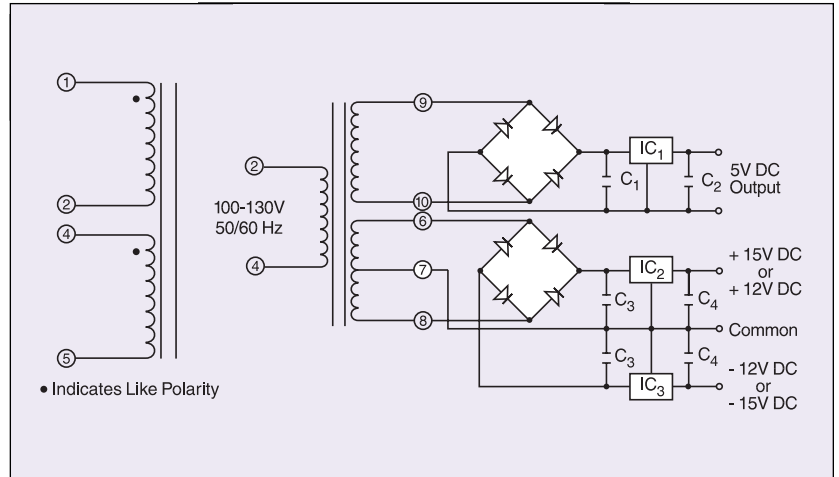
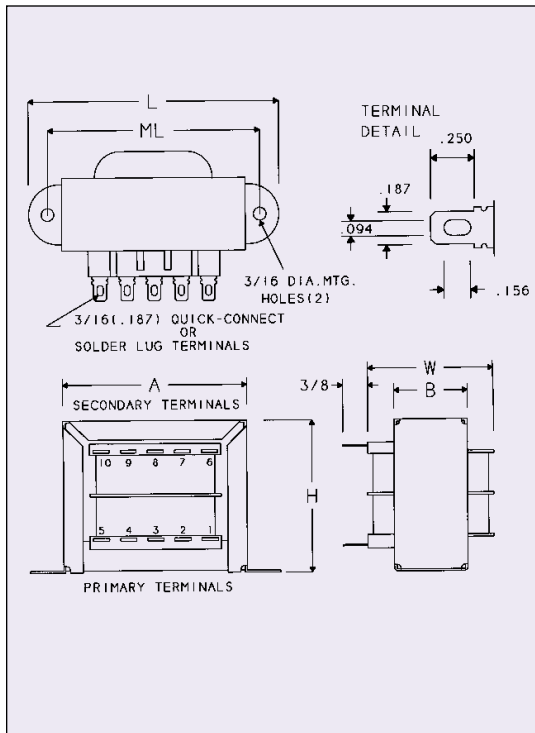
- **Power** – 30 VA, 56 VA, and 100 VA
- **Dielectric Strength** – 2500VRMS Hipot
- **Primaries** – Single or dual primaries (115V or 115/230V nominal - 50/60Hz)
Input range (100V to 130V or 200V to 260V - 50/60 Hz)
- **Secondaries** – Dual complimentary outputs (5 VDC with ±12 VDC or 5 VDC with ±15 VDC)
- **Electrostatic Shield** – Not necessary, split bobbin construction
- **Terminals** – Solder lug / quick-connect type terminals
- **Insulation** – Class B insulation (130°C)

Agency Standards

- UL recognized to UL 506 (File #E63829)
- CSA certified to C22.2 #66 (File # LR 51265)

Part Number Primary 50/60 Hz		DC Output		Size	Suggested Components					C ₂ C ₄ See Note ①	
115V	115/230V	Regulator I	Regulator II		C ₁	C ₃	1C ₁ ③	IC ₂ ③	IC ₃ ③	D1④	D2④
MT-6-12	DMT-6-12	5V @ 1.75A	±12V @ 210mA	6	10 KMFD @ 20 VDC	1.5 KMFD @ 50 VDC	LM-323K-5	LM-340K-12	LM-320K-12	3N253	3N247
MT-6-15	DMT-6-15	5V @ 1.75A	±15V @ 175mA	6	@ 20 VDC	@ 50 VDC	LM-323K-5	LM-340K-15	LM-320K-15	3N253	3N247
MT-7-12	DMT-7-12	5V @ 2.8A	±12V @ 350mA	7	15 KMFD @ 20 VDC	2 KMFD @ 50 VDC	LM-323K-5	LM-340K-12	LM-320K-12	MDA-400	3N247
MT-7-15	DMT-7-15	5V @ 2.8A	±15V @ 280mA	7	@ 20 VDC	@ 50 VDC	LM-323K-5	LM-340K-15	LM-320K-15	MDA-400	3N247
MT-8-12	DMT-8-12	5V @ 4A	±12V @ 600mA	8	26 KMFD @ 20 VDC	3.1 KMFD @ 50 VDC	LM-338②	LM-340K-12	LM-320K-12	MDA-800	3N247
MT-8-15	DMT-8-15	5V @ 4A	±15V @ 500mA	8	@ 20 VDC	@ 50 VDC	LM-338②	LM-340K-15	LM-320K-15	MDA-800	3N247

Note ①: Output capacitors C₂ and C₄ are required to stabilize regulators. Values can be 1MFD min. tantalum or 10MFD min. electrolytic, 20 V min.
 Note ②: LM-338 is an adjustable regulator and MFR's specifications (National Semiconductor) should be consulted for values of external components.
 Note ③: All IC's are National Semiconductor types.
 Note ④: All diodes are Motorola types.



VA (Size)	Dimensions						Wgt
	L	W	H	A	B	ML	
6	3.25" 82.6mm	1.75" 31.8mm	1.93" 49.2mm	2.31" 58.7mm	1.06" 26.9mm	2.81" 71.4mm	1.1 lbs 0.50 kg
7	3.68" 93.6mm	1.81" 46.0mm	2.25" 57.2mm	2.68" 68.2mm	1.06" 26.9mm	3.12" 79.4mm	1.7 lbs 0.77 kg
8	4.03" 102.4mm	2.25" 57.2mm	2.56" 65.1mm	3.06" 77.7mm	1.31" 33.3mm	3.56" 90.5mm	2.75 lbs 1.25 kg

If you don't see a specific part that meets your requirement, see page 31 for our custom magnetics design data sheet.



CALL: 516-239-5777 • FAX: (24hrs) 516-239-7208
 500 Bayview Avenue, Inwood, New York 11096

Conventional Rectifier Power Transformers • Chassis Mount



Signal's Rectifier Power transformers provide a wide variety of outputs. This series of conservatively designed transformers are manufactured using traditional materials and layer wound techniques.

General Specifications

- **Power** – 10 VA to 2800 VA
- **Dielectric Strength** – 1500VRMS Hipot
- **Primaries** – Single, tapped, or dual primaries (105V, 115V, 125V, 230V - 50-500 Hz)
- **Secondaries** – Center-tapped series or center-tapped parallel secondaries
- **Insulation** – Class A insulation (105°C)

Primary 50/60 HZ		Secondary RMS Rating		Mtg. Style	L	W	H	ML	MW	Mtg. Screw	Wgt
Single 115V	Dual* 115/230V	Series	Parallel								
10-1	DL-10-1	10VCT @ 1A	5VCT @ 2A	C	2.87" 73.0mm	1.75" 44.5mm	2.31" 58.7mm	2.37" 60.3mm	-	#8	1.0 lbs .45 kg
10-2	DL-10-2	10VCT @ 2A	5VCT @ 4A	C	3.12" 79.4mm	2.12" 53.9mm	2.75" 69.9mm	2.81" 71.4mm	-	#8	1.5 lbs .68 kg
10-4	DL-10-4	10VCT @ 4A	5VCT @ 8A	C	3.56" 90.5mm	2.37" 60.3mm	3.06" 77.7mm	3.12" 79.4mm	-	#8	2.3 lbs 1.04 kg
10-6	DL-10-6	10VCT @ 6A	5VCT @ 12A	B	3.37" 85.7mm	2.75" 69.9mm	2.81" 71.4mm	2.81" 71.4mm	2.12" 53.9mm	#8	3.3 lbs 1.50 kg
10-8	DL-10-8	10VCT @ 8A	5VCT @ 16A	B	3.37" 85.7mm	3.12" 79.4mm	2.81" 71.4mm	2.81" 71.4mm	2.50" 63.5mm	#8	4.0 lbs 1.81 kg
10-12	DL-10-12	10VCT @ 12A	5VCT @ 24A	B	3.75" 95.3mm	3.25" 82.6mm	3.12" 79.4mm	3.12" 79.4mm	2.50" 63.5mm	#8	5.0 lbs 2.27 kg
10-25	DL-10-25	10VCT @ 25A	5VCT @ 50A	B	4.50" 114.3mm	3.75" 95.3mm	3.75" 95.3mm	3.75" 95.3mm	2.75" 69.9mm	#10	8.7 lbs 3.95 kg
10-50‡	DL-10-50	10VCT @ 50A	5VCT @ 100A	B	5.25" 133.4mm	5.50" 139.7mm	4.37" 111.1mm	4.37" 111.1mm	3.62" 92.1mm	1/4	17.0 lbs 7.71 kg
10-100‡	DL-10-100	10VCT @ 100A	5VCT @ 200A	B	6.37" 162.0mm	7.25" 184.2mm	5.31" 134.9mm	5.31" 134.9mm	4.37" 111.1mm	1/4	34.5 lbs 15.65 kg
12.8-1	DL-12.8-1	12.8VCT @ 1A	6.4VCT @ 2A	C	2.87" 73.0mm	2.00" 50.8mm	2.31" 58.7mm	2.37" 60.3mm	-	#8	1.2 lbs .54 kg
12.8-2	DL-12.8-2	12.8VCT @ 2A	6.4VCT @ 4A	B	3.00" 76.2mm	2.50" 63.5mm	2.50" 63.5mm	2.50" 63.5mm	2.00" 50.8mm	#8	2.3 lbs 1.04 kg
12.8-4	DL-12.8-4	12.8VCT @ 4A	6.4VCT @ 8A	B	3.00" 76.2mm	2.87" 73.0mm	2.50" 63.5mm	2.50" 63.5mm	2.37" 60.3mm	#8	2.8 lbs 1.27 kg
12.8-6	DL-12.8-6	12.8VCT @ 6A	6.4VCT @ 12A	B	3.37" 85.7mm	3.06" 77.7mm	2.81" 71.4mm	2.81" 71.4mm	2.50" 63.5mm	#8	4.0 lbs 1.81 kg
12.8-8	DL-12.8-8	12.8VCT @ 8A	6.4VCT @ 16A	B	3.75" 95.3mm	3.12" 79.4mm	3.12" 79.4mm	3.12" 79.4mm	2.25" 57.2mm	#8	4.5 lbs 2.04 kg
12.8-12	DL-12.8-12	12.8VCT @ 12A	6.4VCT @ 24A	B	4.12" 104.8mm	3.25" 82.6mm	3.43" 87.3mm	3.43" 87.3mm	2.37" 60.3mm	#10	6.0 lbs 2.72 kg
12.8-25	DL-12.8-25	12.8VCT @ 25A	6.4VCT @ 50A	B	5.25" 133.4mm	4.25" 108.0mm	4.37" 111.1mm	4.37" 111.1mm	2.87" 73.0mm	#10	12.5 lbs 5.69 kg
12.8-50‡	DL-12.8-50	12.8VCT @ 50A	6.4VCT @ 100A	B	5.25" 133.4mm	6.00" 152.4mm	4.37" 111.1mm	4.37" 111.1mm	4.12" 104.8mm	1/4	20.7 lbs 9.39 kg
12.8-100‡	DL-12.8-100	12.8VCT @ 100A	6.4VCT @ 200A	B	6.37" 162.0mm	7.25" 184.2mm	5.31" 134.9mm	5.31" 134.9mm	4.37" 111.1mm	1/4	34.5 lbs 15.65 kg
16-1	DL-16-1	16VCT @ 1A	8VCT @ 2A	C	2.87" 73.0mm	2.00" 50.8mm	2.31" 58.7mm	2.37" 60.3mm	-	#8	1.2 lbs .54 kg
16-2	DL-16-2	16VCT @ 2A	8VCT @ 4A	C	3.12" 79.4mm	2.25" 57.2mm	2.75" 69.9mm	2.81" 71.4mm	-	#8	1.7 lbs .77 kg
16-4	DL-16-4	16VCT @ 4A	8VCT @ 8A	B	3.37" 85.7mm	2.75" 69.9mm	2.81" 71.4mm	2.81" 71.4mm	2.12" 53.9mm	#8	3.3 lbs 1.50 kg
16-6	DL-16-6	16VCT @ 6A	8VCT @ 12A	B	3.75" 95.3mm	3.12" 79.4mm	3.12" 79.4mm	3.12" 79.4mm	2.25" 57.2mm	#10	4.5 lbs 2.04 kg
16-8	DL-16-8	16VCT @ 8A	8VCT @ 16A	B	3.75" 95.3mm	3.50" 89.0mm	3.12" 79.4mm	3.12" 79.4mm	2.62" 66.7mm	#10	5.4 lbs 2.45 kg
16-12	DL-16-12	16VCT @ 12A	8VCT @ 24A	B	4.12" 104.8mm	3.87" 98.4mm	3.43" 87.3mm	3.43" 87.3mm	3.00" 76.2mm	#10	7.9 lbs 3.58 kg
16-25	DL-16-25	16VCT @ 25A	8VCT @ 50A	B	4.50" 114.3mm	5.37" 136.5mm	3.75" 95.3mm	3.75" 95.3mm	4.00" 101.6mm	#10	14.5 lbs 6.58 kg
16-50‡	DL-16-50	16VCT @ 50A	8VCT @ 100A	B	6.37" 162.0mm	5.70" 146.1mm	5.31" 134.9mm	5.31" 134.9mm	3.75" 95.3mm	1/4	26.5 lbs 12.02 kg
16-100‡	DL-16-100	16VCT @ 100A	8VCT @ 200A	B	7.50" 190.5mm	7.50" 190.5mm	6.37" 162.0mm	6.75" 171.5mm	4.62" 117.5mm	1/4	50.0 lbs 22.68 kg

Δ Available with dual primary only. Therefore, prefix "DL" is not required.
‡ Nominal 115V primary has added taps, I.E., 105/115/125V; Dual (DL) version is 115/230V only.

* Items are not normally in stock. They are standard designs generally available in 3-4 weeks.

See page 38 for determining RMS secondary current ratings.

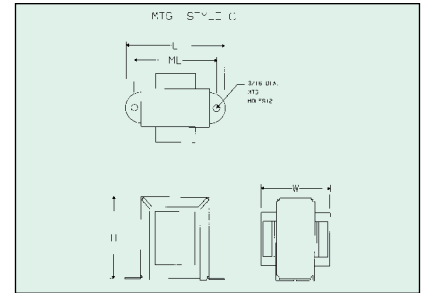
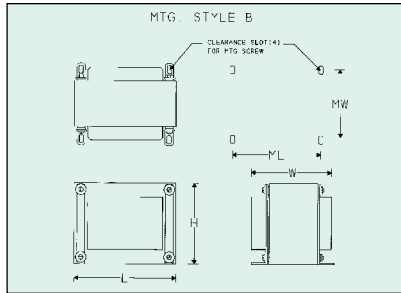
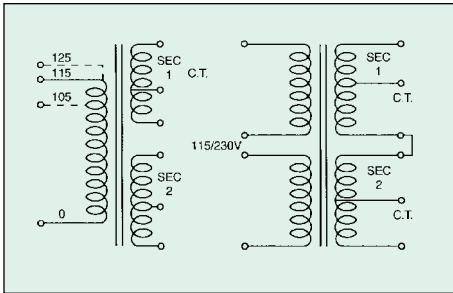
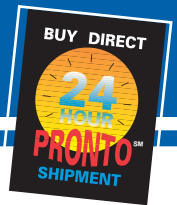
If you don't see a specific part that meets your requirement, see page 31 for our custom magnetics design data sheet.

Signal Transformer

CALL: 516-239-5777 • FAX: (24hrs) 516-239-7208

500 Bayview Avenue, Inwood, New York 11096

Conventional Rectifier Power Transformers • Chassis Mount (continued)



Primary 50/60 HZ		Second RMS Rating		Mtg. Style	L	W	H	ML	MW	Mtg. Screw	Wgt
Single 115V	Dual* 115/230V	Series	Parallel								
24-1	DL-24-1	24VCT @ 1A	12VCT @ 2A	B	3.00" 76.2mm	2.50" 63.5mm	2.50" 63.5mm	2.50" 63.5mm	2.00" 50.8mm	#8	2.3 lbs 1.04 kg
24-2	DL-24-2	24VCT @ 2A	12VCT @ 4A	B	3.00" 76.2mm	2.87" 73.0mm	2.50" 63.5mm	2.50" 63.5mm	2.37" 60.3mm	#8	2.9 lbs 1.32 kg
24-4	DL-24-4	24VCT @ 4A	12VCT @ 8A	B	3.75" 95.3mm	3.12" 79.4mm	3.12" 79.4mm	3.12" 79.4mm	2.25" 57.2mm	#8	4.5 lbs 2.04 kg
24-6	DL-24-6	24VCT @ 6A	12V.C.T. @ 12A	B	4.12" 104.8mm	3.25" 82.6mm	3.43" 87.3mm	3.43" 87.3mm	2.37" 60.3mm	#10	5.8 lbs 2.63 kg
24-8	DL-24-8	24VCT @ 8A	12VCT @ 16A	B	4.12" 104.8mm	3.87" 98.4mm	3.43" 87.3mm	3.43" 87.3mm	3.00" 76.2mm	#10	7.9 lbs 3.58 kg
24-12‡	DL-24-12	24VCT @ 12A	12VCT @ 24A	B	4.50" 114.3mm	4.50" 114.3mm	3.75" 95.3mm	3.75" 95.3mm	3.37" 85.7mm	#10	11.0 lbs 4.99 kg
24-20‡	DL-24-20	24VCT @ 20A	12VCT @ 40A	B	5.25" 133.4mm	4.75" 120.7mm	4.37" 111.1mm	4.37" 111.1mm	3.37" 85.7mm	1/4	15.3 lbs 6.95 kg
24-25‡	DL-24-25	24VCT @ 25A	12VCT @ 50A	B	5.25" 133.4mm	5.62" 142.9mm	4.37" 111.1mm	4.37" 111.1mm	4.12" 104.8mm	1/4	19.5 lbs 8.85 kg
24-50‡	DL-24-50	24VCT @ 50A	12VCT @ 100A	B	6.37" 162.0mm	6.25" 158.8mm	5.31" 134.9mm	5.31" 134.9mm	4.37" 111.1mm	1/4	31.3 lbs 14.20 kg
—	24-100Δ	24VCT @ 100A	12VCT @ 200A	B	7.50" 190.5mm	7.00" 177.8mm	6.37" 162.0mm	6.37" 162.0mm	4.12" 104.8mm	1/4	43.0 lbs 19.5 kg
36-1	DL-36-1	36VCT @ 1A	18VCT @ 2A	B	3.00" 76.2mm	2.75" 69.9mm	2.50" 63.5mm	2.50" 63.5mm	2.25" 57.2mm	#8	2.6 lbs 1.18 kg
36-2	DL-36-2	36VCT @ 2A	18VCT @ 4A	B	3.37" 85.7mm	2.93" 74.6mm	2.81" 71.4mm	2.81" 71.4mm	2.37" 60.3mm	#8	3.8 lbs 1.72 kg
36-4	DL-36-4	36VCT @ 4A	18VCT @ 8A	B	4.12" 104.8mm	3.37" 85.7mm	3.43" 87.3mm	3.43" 87.3mm	2.62" 66.7mm	#10	6.8 lbs 3.08 kg
36-6	DL-36-6	36VCT @ 6A	18VCT @ 12A	B	4.50" 114.3mm	3.75" 95.3mm	3.75" 95.3mm	3.75" 95.3mm	2.75" 69.9mm	#10	8.7 lbs 3.95 kg
36-8‡	DL-36-8	36VCT @ 8A	18VCT @ 16A	B	4.50" 114.3mm	4.50" 114.3mm	3.75" 95.3mm	3.75" 95.3mm	3.37" 85.7mm	#10	11.0 lbs 4.99 kg
36-12‡	DL-36-12	36VCT @ 12A	18VCT @ 24A	B	5.25" 133.4mm	5.00" 127.0mm	4.37" 111.1mm	4.37" 111.1mm	3.37" 85.7mm	1/4	15.0 lbs 6.80 kg
36-20‡	DL-36-20	36VCT @ 20A	18VCT @ 40A	B	6.37" 162.0mm	5.37" 136.5mm	5.31" 134.9mm	5.31" 134.9mm	3.37" 85.7mm	1/4	22.8 lbs 10.34 kg
36-25‡	DL-36-25	36VCT @ 25A	18VCT @ 50A	B	6.37" 162.0mm	5.75" 146.1mm	5.31" 134.9mm	5.31" 134.9mm	3.75" 95.3mm	1/4	26.5 lbs 12.02 kg
36-30‡	DL-36-30	36VCT @ 30A	18VCT @ 60A	B	6.37" 162.0mm	6.00" 152.4mm	5.31" 134.9mm	5.31" 134.9mm	4.37" 111.1mm	1/4	31.5 lbs 14.28 kg
—	36-50Δ	36VCT @ 50A	18VCT @ 100A	B	6.37" 162.0mm	7.25" 184.2mm	5.31" 134.9mm	5.31" 134.9mm	5.12" 130.2mm	1/4	40.0 lbs 18.14 kg

Δ Available with dual primary only. Therefore, prefix "DL" is not required.
‡ Nominal 115V primary has added taps, I.E., 105/115/125V; Dual (DL) version is 115/230V only.

* Items are not normally in stock. They are standard designs generally available in 3-4 weeks.

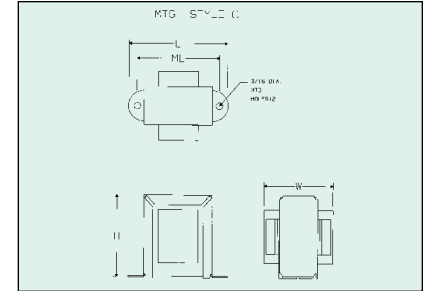
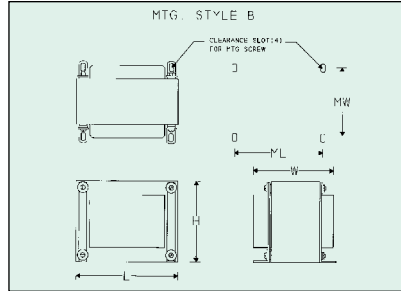
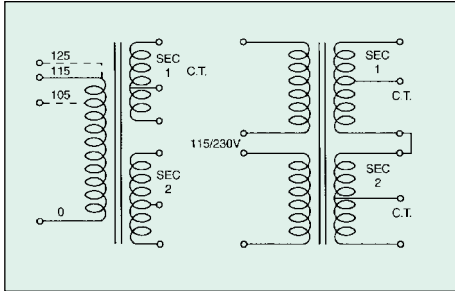
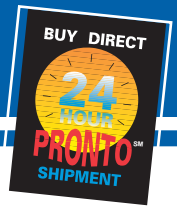
See page 38 for determining RMS secondary current ratings.

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Conventional Rectifier Power Transformers • Chassis Mount (continued)



Primary 50/60 HZ		Second RMS Rating		Mtg. Style	L	W	H	ML	MW	Mtg. Screw	Wgt
Single 115V	Dual* 115/230V	Series	Parallel								
56-1	DL-56-1	56VCT @ 1A	28VCT @ 2A	B	3.37" 85.7mm	2.87" 73.0mm	2.81" 71.4mm	2.81" 71.4mm	2.25" 57.2mm	#8	3.5 lbs 1.59 kg
56-2	DL-56-2	56VCT @ 2A	28 VCT @ 4A	B	3.75" 95.3mm	3.25" 82.6mm	3.12" 79.4mm	3.12" 79.4mm	2.50" 63.5mm	#8	5.0 lbs 2.27 kg
56-4	DL-56-4	56VCT @ 4A	28VCT @ 8A	B	4.12" 104.8mm	3.75" 95.3mm	3.43" 87.3mm	3.43" 87.3mm	3.00" 76.2mm	#10	7.7 lbs 3.49 kg
56-6	DL-56-6	56VCT @ 6A	28VCT @ 12A	B	5.25" 133.4mm	4.25" 108.0mm	4.37" 111.1mm	4.37" 111.1mm	2.87" 73.0mm	#10	12.0 lbs 5.44 kg
56-8‡	DL-56-8	56VCT @ 8A	28VCT @ 16A	B	5.25" 133.4mm	5.00" 127.0mm	4.37" 111.1mm	4.37" 111.1mm	3.62" 92.1mm	#1/4	17.0 lbs 7.71 kg
56-12‡	DL-56-12	56VCT @ 12A	28VCT @ 24A	B	6.37" 162.0mm	5.25" 133.4mm	5.31" 134.9mm	5.31" 134.9mm	3.37" 85.7mm	1/4	22.0 lbs 9.98 kg
56-25‡	DL-56-25	56VCT @ 25A	28VCT @ 50A	B	6.37" 162.0mm	7.12" 181.0mm	5.31" 134.9mm	5.31" 134.9mm	5.12" 130.2mm	1/4	38.0 lbs 17.24 kg
—	56-50Δ	56VCT @ 50A	28VCT @ 100A	B	7.50" 190.5mm	7.50" 190.5mm	6.24" 158.8mm	6.75" 171.5mm	4.87" 123.8mm	1/4	56.3 lbs 25.54 kg
68-1	DL-68-1	68VCT @ 1A	34VCT @ 2A	B	3.37" 85.7mm	2.93" 74.6mm	2.81" 71.4mm	2.81" 71.4mm	2.37" 60.3mm	#8	3.8 lbs 1.72 kg
68-2	DL-68-2	68VCT @ 2A	34VCT @ 4A	B	4.12" 104.8mm	3.37" 85.7mm	3.43" 87.3mm	3.43" 87.3mm	2.62" 66.7mm	#10	6.8 lbs 3.08 kg
68-4	DL-68-4	68VCT @ 4A	34VCT @ 8A	B	4.50" 114.3mm	4.50" 114.3mm	3.75" 95.3mm	3.75" 95.3mm	3.37" 85.7mm	#10	11.5 lbs 5.22 kg
68-6‡	DL-68-6	68VCT @ 6A	34VCT @ 12A	B	5.25" 133.4mm	5.00" 127.0mm	4.37" 111.1mm	4.37" 111.1mm	3.37" 85.7mm	1/4	15.0 lbs 6.80 kg
68-8‡	DL-68-8	68VCT @ 8A	34VCT @ 16A	B	5.25" 133.4mm	5.50" 139.7mm	4.37" 111.1mm	4.37" 111.1mm	3.87" 98.4mm	1/4	19.0 lbs 8.62 kg
68-12‡	DL-68-12	68VCT @ 12A	34VCT @ 24A	B	6.37" 162.0mm	5.75" 146.1mm	5.31" 134.9mm	5.31" 134.9mm	3.75" 95.3mm	1/4	26.5 lbs 12.02 kg
—	68-25Δ	68VCT @ 25A	34VCT @ 50A	B	6.37" 162.0mm	7.25" 184.2mm	5.31" 134.9mm	5.31" 134.9mm	5.12" 130.2mm	1/4	39.7 lbs 18.01 kg
80-1	DL-80-1	80VCT @ 1A	40VCT @ 2A	B	3.37" 85.7mm	3.06" 77.7mm	2.81" 71.4mm	2.81" 71.4mm	2.50" 63.5mm	#8	4.0 lbs 1.81 kg
80-2	DL-80-2	80VCT @ 2A	40VCT @ 4A	B	4.12" 104.8mm	3.37" 85.7mm	3.43" 87.3mm	3.43" 87.3 mm	2.62" 66.7mm	#10	6.8 lbs 3.08 kg
80-4	DL-80-4	80VCT @ 4A	40VCT @ 8A	B	5.25" 133.4mm	4.25" 108.0mm	4.37" 111.1mm	4.37" 111.1mm	2.87" 73.0mm	1/4	12.3 lbs 5.58 kg
80-6‡	DL-80-6	80VCT @ 6A	40VCT @ 12A	B	5.25" 133.4mm	5.50" 139.7mm	4.37" 111.1mm	4.37" 111.1mm	3.87" 98.4mm	1/4	19.0 lbs 8.62 kg
80-8‡	DL-80-8	80VCT @ 8A	40VCT @ 16A	B	6.37" 162.0mm	5.25" 133.4mm	5.31" 134.9mm	5.31" 134.9mm	3.25" 82.6mm	1/4	20.5 lbs 9.30 kg
80-12‡	DL-80-12	80VCT @ 12A	40VCT @ 24A	B	6.37" 162.0mm	6.00" 152.4mm	5.31" 134.9mm	5.31" 134.9mm	4.12" 104.8mm	1/4	29.0 lbs 13.15 kg
—	80-25Δ	80VCT @ 25A	40VCT @ 50A	B	7.50" 190.5mm	6.50" 165.1mm	6.25" 158.8mm	6.75" 171.5mm	3.87" 98.4mm	1/4	40.3 lbs 18.28 kg

Δ Available with dual primary only. Therefore, prefix "DL" is not required.
‡ Nominal 115V primary has added taps, I.E., 105/115/125V; Dual (DL) version is 115/230V only.

* Items are not normally in stock. They are standard designs generally available in 3-4 weeks.

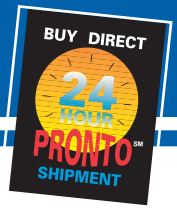
See page 38 for determining RMS secondary current ratings.

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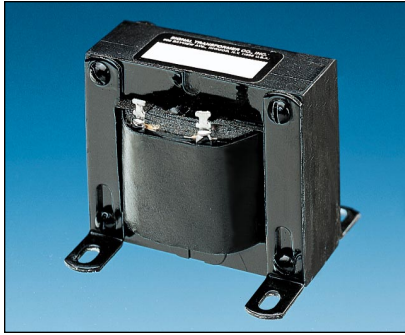


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Filter and Dual Chokes Chassis Mount

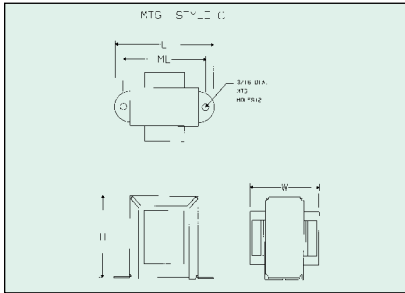
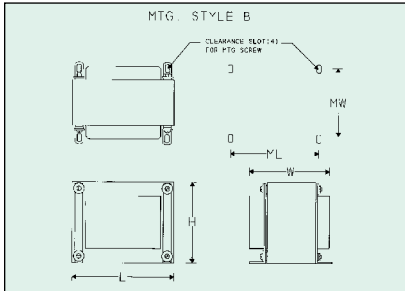


Available in Single and Dual Windings

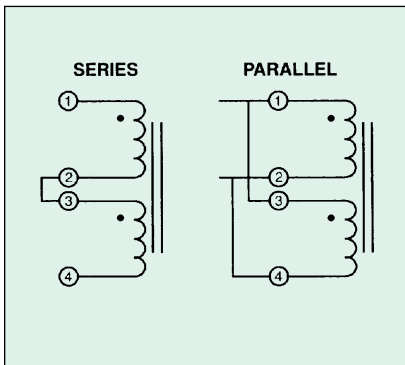


Signal's CH and CL chokes are designed to compliment the rectifier power transformers so that a set may be specified for DC power supplies using inductive filters.

- General Specifications
- Inductance – 0.12 MHY to 100 MHY
 - DC Current – 1.0 ADC to 200 ADC
 - Insulation – Class A insulation (105°C)



Part No.	Inductance (MHY)	Current (Amps)	Resistance (Ohms)	Mtg. Style	L	W	H	ML	MW	Mtg. Screw	Wgt
CH-1	100	1	1.5	B	3.00" 76.2mm	2.50" 63.5mm	2.50" 63.5mm	2.50" 63.5mm	2.00" 50.8mm	#8	2.3 lbs 1.04 kg
CH-2	70	2	0.9	B	3.37" 85.7mm	2.75" 69.9mm	2.87" 73.0mm	2.81" 71.4mm	2.12" 53.9mm	#8	3.2 lbs 1.45 kg
CH-4	70	4	0.6	B	3.75" 95.3mm	3.12" 79.4mm	3.25" 82.6mm	3.12" 79.4mm	2.50" 63.5mm	#8	5.3 lbs 2.40 kg
CH-6	40	6	0.4	B	3.75" 95.3mm	3.62" 92.1mm	3.25" 82.6mm	3.12" 79.4mm	3.00" 76.2mm	#8	6.5 lbs 2.95 kg
CH-8	30	8	0.3	B	4.12" 104.8mm	3.62" 92.1mm	3.50" 88.9mm	3.43" 87.3mm	3.00" 76.2mm	#10	8 lbs 3.63 kg
CH-12	15	12	0.1	B	5.25" 133.4mm	4.00" 101.6mm	4.43" 112.7mm	4.37" 111.1mm	3.12" 79.4mm	#10	13.7 lbs 6.21 kg
CH-16	15	16	0.08	B	5.25" 133.4mm	4.62" 117.5mm	4.43" 112.7mm	4.37" 111.1mm	3.62" 92.0mm	#10	17.5 lbs 7.94 kg
CH-20	7	20	0.05	B	5.25" 133.4mm	4.00" 101.6mm	4.43" 112.7mm	4.37" 111.1mm	3.12" 98.4mm	#10	13.3 lbs 6.03 kg
CH-25	5	25	0.025	B	5.25" 133.4mm	4.75" 120.7mm	4.43" 112.7mm	4.37" 111.1mm	3.87" 98.4mm	#10	17.8 lbs 8.07 kg
CH-30	4	30	0.01	B	6.37" 161.9mm	5.00" 127.0mm	5.37" 136.5mm	5.31" 134.9mm	3.37" 85.7mm	1/4	24.4 lbs 11.07 kg
CH-50	1.4	50	0.01	B	6.37" 161.9mm	5.25" 133.4mm	5.37" 136.5mm	5.31" 134.9mm	3.75" 95.3mm	1/4	26.7 lbs 12.11 kg
CH-100	0.5	100	0.005	B	6.37" 161.9mm	6.25" 158.8mm	5.37" 136.5mm	5.31" 134.9mm	4.12" 104.8mm	1/4	31.4 lbs 14.24 kg
CH-200	0.3	200	0.001	B	7.50" 190.5mm	7.50" 190.5mm	6.25" 158.8mm	6.75" 171.5mm	4.12" 104.8mm	1/4	48.0 lbs 21.77 kg



Part No.	Series Connected			Parallel Connected			Mtg. Style	Dimensions					Mtg. Screw	Wgt
	Ind. (MHY)	Curr. (Amps)	Res. Ω	Ind. (MHY)	Curr. (Amps)	Res. Ω		L	W	H	ML	MW		
CL-1-2	72	1	1.4	18	2	0.35	C	2.87" 73.0mm	1.75" 44.5mm	2.31" 58.7mm	2.37" 60.3mm	—	#8	0.9 lbs 0.41 kg
CL-2-4	40	2	0.7	10	4	0.18	C	3.12" 79.4mm	2.12" 53.9mm	2.75" 69.9mm	2.81" 71.4mm	—	#8	1.5 lbs 0.68 kg
CL-4-8	20	4	0.3	5	8	0.075	B	3.00" 76.2mm	2.87" 73.0mm	2.50" 63.5mm	2.50" 63.5mm	2.50" 63.5mm	#8	3.0 lbs 1.36 kg
CL-6-12	12	6	0.15	3	12	0.038	B	3.37" 85.7mm	3.06" 77.7mm	2.81" 71.4mm	2.81" 71.4mm	2.50" 63.5mm	#8	4.0 lbs 1.81 kg
CL-12-24	4.8	12	0.052	1.2	24	0.013	B	3.37" 85.7mm	3.56" 90.5mm	2.81" 71.4mm	2.81" 71.4mm	3.00" 76.2mm	#8	5.3 lbs 2.40 kg
CL-25-50	1.2	25	0.012	0.3	50	0.003	B	3.75" 98.3mm	3.37" 85.7mm	3.37" 85.7mm	3.12" 79.4mm	2.75" 69.9mm	#8	6.0 lbs 2.72 kg
CL-50-100	0.5	50	0.0043	0.12	100	0.0011	B	4.50" 114.3mm	3.75" 95.3mm	3.75" 95.3mm	3.75" 95.3mm	2.50" 63.5mm	#8	8.0 lbs 3.63 kg

Signal's Dual Chokes are supplied with 2 windings which may be series or parallel connected with rating shown on chart. This line is basically designed for application requiring lower inductance value at high currents, such as low voltage, DC supplies or SCR filters.

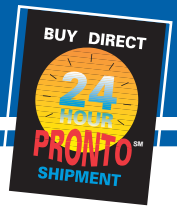
See page 38 for determining RMS secondary current ratings.

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500 Bayview Avenue, Inwood, New York 11096



Industrial Grade Step-Up or Step-Down Transformers



Signal's DU and SU transformers have been designed to provide a multitude of step-up or step-down voltages to accommodate the various input voltages available throughout the world.

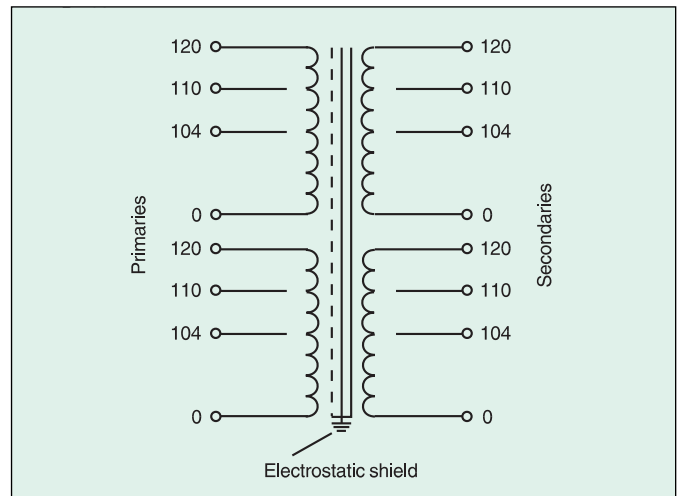
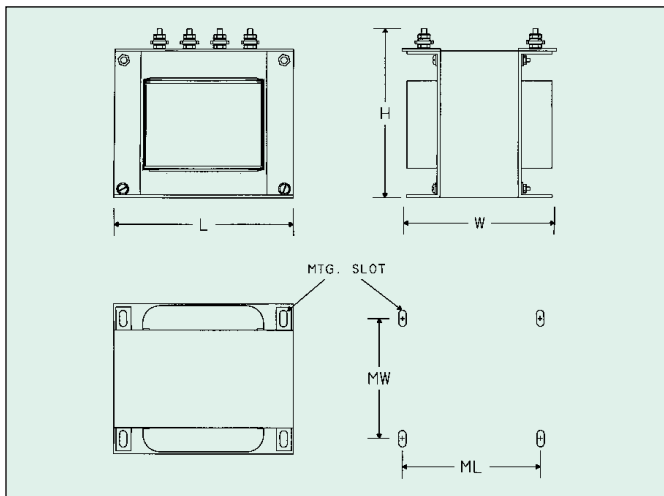
General Specifications

- **Power** – 250 VA to 10 KVA (500 VA to 20 KVA possible if used as auto-transformer)
- **Dielectric Strength** – 2500VRMS Hipot
- **Primaries** – Dual/tapped primaries: Parallel connected (104V, 110V, 120V - 50-500 Hz)
Series connected (208V, 220V, 230V, 240V - 50-500 Hz)
- **Secondaries** – Dual/tapped secondaries: **DU Series**
Parallel connected (104V, 110V, 120V - 50-500 Hz)
Series connected (208V, 220V, 230V, 240V - 50-500 Hz)
- **Electrostatic Shield** – 2 mil thick copper foil connected to ground. The connection may be opened if an ungrounded shield is desired.
- **Terminals** – Plated brass screw type terminals
- **Insulation** – Class A insulation (105°C)

As shown on the schematic diagram the "DU" line is designed with dual primaries and secondaries. All four windings are identically rated at 0/104/110/120 volts. This permits series or parallel connections on either primary or secondary. Therefore, a nominal 110 to 110 volt, 220 to 220 volt, 110 to 220 volt, or 220 to 110 volt transformer can be set up. The winding taps permit intermediate series ratings such as 208, 214, or 230 volts. It is also possible to make auto-transformer connections by connecting a primary group in series with a secondary group. Such nominal ratings as 440 to 220 volts or 220 to 440 volts can be set up, in addition to the standard ratings described above. A further advantage to auto-transformer connection is the fact that the KVA rating of a particular type is doubled.

Part No.	KVA	Series Secondaries		Parallel Secondaries		Mechanical Dimensions					Mtg. & Term. Screw	Wgt
		Volts	Max. Amps	Volts	Max. Amps	L †	W *	H *	ML †	MW ‡		
DU-1/4	1/4	0/208/220/240	1.1	0/104/110/120	2.2	5.31" 134.9mm	4.25" 107.9mm	5.25" 133.4mm	4.37" 111.1mm	2.50" 63.5mm	#10	12 lbs 5.44 kg
DU-1/2	1/2	0/208/220/240	2.3	0/104/110/120	4.6	5.31" 134.9mm	5.31" 134.9mm	5.25" 133.4mm	4.37" 111.1mm	3.62" 92.1mm	#10	18 lbs 8.16 kg
DU-1	1	0/208/220/240	4.5	0/104/110/120	9	7.56" 192.1mm	6.25" 158.8mm	7.37" 187.3mm	6.75" 171.5mm	4.12" 104.8mm	1/4	33 lbs 14.97 kg
DU-2	2	0/208/220/240	9	0/104/110/120	18	7.56" 192.1mm	8.25" 209.6mm	7.37" 187.3mm	6.75" 171.5mm	6.00" 152.4mm	1/4	56 lbs 25.40 kg
DU-3	3	0/208/220/240	14	0/104/110/120	28	7.56" 192.1mm	9.25" 234.9mm	7.37" 187.3mm	6.75" 171.5mm	7.00" 177.8mm	1/4	70 lbs 31.75 kg
DU-5	5	0/208/220/240	23	0/104/110/120	46	7.56" 192.1mm	10.75" 273.1mm	7.37" 187.3mm	6.75" 171.5mm	8.50" 215.9mm	1/4	89 lbs 40.37 kg
DU-7.5	7.5	0/208/220/240	31	0/104/110/120	62	9.00" 228.6mm	10.75" 273.1mm	8.00" 203.2mm	7.50" 190.5mm	6.50" 165.1mm	1/4	105 lbs 47.63 kg
DU-10	10	0/208/220/240	41	0/104/110/120	82	9.00" 228.6mm	13.00" 330.2mm	8.00" 203.2mm	7.50" 190.5mm	9.00" 228.6mm	1/4	150 lbs 68.04 kg

*Maximum † ± 0.6" (1.6mm) ‡ ± .12" (3.2mm)

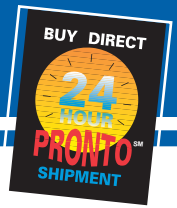


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Industrial Grade Step-Up or Step-Down Transformers



Signal's DU and SU transformers have been designed to provide a multitude of step-up or step-down voltages to accommodate the various input voltages available throughout the world.

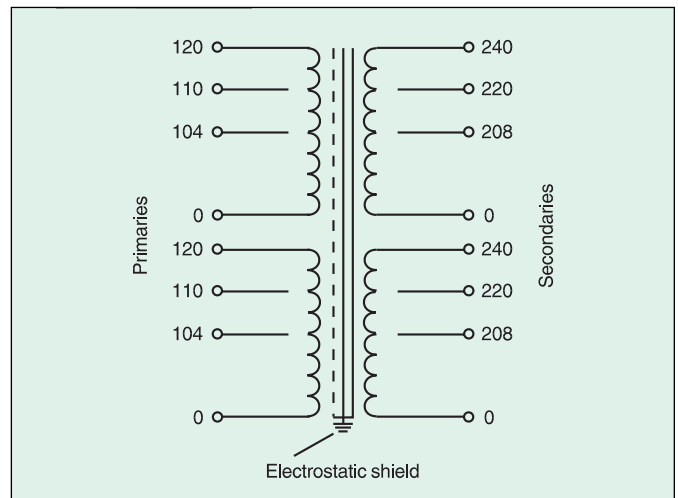
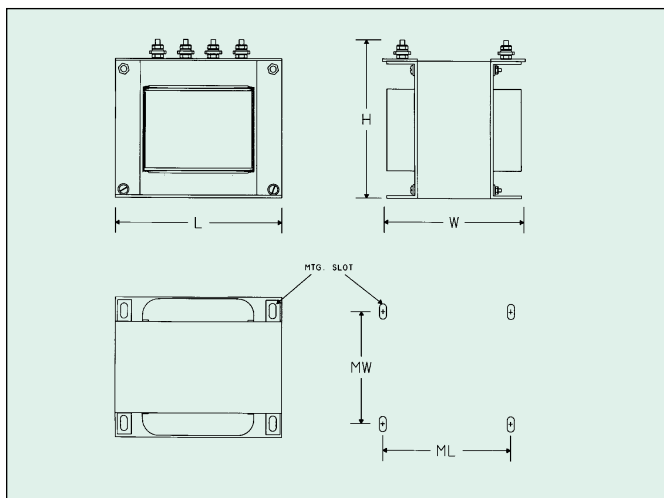
General Specifications

- **Power** – 250 VA to 10 KVA (500 VA to 20 KVA possible if used as auto-transformer)
- **Dielectric Strength** – 2500VRMS Hipot
- **Primaries** – Dual/tapped primaries: Parallel connected (104V, 110V, 120V - 50-500 Hz)
Series connected (208V, 220V, 230V, 240V - 50-500 Hz)
- **Secondaries** – Dual/tapped secondaries: **SU Series**
Parallel connected (208V, 220V, 240V - 50-500 Hz)
Series connected (416V, 440V, 460V, 480V - 50-500Hz)
- **Electrostatic Shield** – 2 mil thick copper foil connected to ground. The connection may be opened if an ungrounded shield is desired.
- **Terminals** – Plated brass screw type terminals
- **Insulation** – Class A insulation (105°C)

As shown on the schematic diagram the "SU" line is designed with dual primaries and secondaries. Two primary windings are identically rated at 0/104/110/120. Two secondary windings are identically rated at 0/208/220/240. This permits series or parallel connections on either primary or secondary. Therefore a nominal 110 to 220 volt, 220 to 440 volt, 110 to 440 volt, or 440 to 110 volt transformer can be set up. The winding tape permits intermediate series ratings such as 416, 428, and 460 volts. It is also possible to make auto-transformer connections by connecting a primary group in series with a secondary group. Such nominal ratings as 660 to 330 volts or 330 to 660 volts can be set up, in addition to the standard ratings described above. A further advantage to auto-transformer connection is the fact that the KVA rating of a particular type is doubled.

Part No.	KVA	Series Secondaries		Parallel Secondaries		Mechanical Dimensions					Mtg. & Term. Screw	Wgt
		Volts	Max. Amps	Volts	Max. Amps	L*	W*	H*	ML†	MW‡		
SU-1/4	1/4	0/416/440/480	0.55	0/208/220/240	1.1	5.31" 134.9mm	4.25" 107.9mm	5.25" 133.4mm	4.37" 111.1mm	2.50" 63.5mm	#10	12 lbs 5.44 kg
SU-1/2	1/2	0/416/440/480	1.15	0/208/220/240	2.3	5.31" 134.9mm	5.31" 134.9mm	5.25" 133.4mm	4.37" 111.1mm	3.62" 92.1mm	#10	18 lbs 8.16 kg
SU-1	1	0/416/440/480	2.25	0/208/220/240	4.5	7.56" 192.1mm	6.25" 158.8mm	7.37" 187.3mm	6.75" 171.5mm	4.12" 104.8mm	1/4	33 lbs 14.97 kg
SU-2	2	0/416/440/480	4.5	0/208/220/240	9	7.56" 192.1mm	8.25" 209.6mm	7.37" 187.3mm	6.75" 171.5mm	6.00" 152.4mm	1/4	56 lbs 25.40 kg
SU-3	3	0/416/440/480	7	0/208/220/240	14	7.56" 192.1mm	9.25" 234.9mm	7.37" 187.3mm	6.75" 171.5mm	7.00" 177.8mm	1/4	70 lbs 31.75 kg
SU-5	5	0/416/440/480	11.5	0/208/220/240	23	7.56" 192.1mm	10.75" 273.1mm	7.37" 187.3mm	6.75" 171.5mm	8.50" 215.9mm	1/4	89 lbs 40.37 kg
SU-7.5	7.5	0/416/440/480	15.5	0/208/220/240	31	9.00" 228.6mm	10.75" 273.1mm	8.00" 203.2mm	7.50" 190.5mm	6.50" 165.1mm	1/4	105 lbs 47.63 kg
SU-10	10	0/416/440/480	20.5	0/208/220/240	41	9.00" 228.6mm	13.00" 330.2mm	8.00" 203.2mm	7.50" 190.5mm	9.00" 228.6mm	1/4	150 lbs 68.04 kg

*Maximum $\pm 0.6"$ (1.6mm) $\pm .12"$ (3.2mm)



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General Specifications

- **Power** – 100 VA to 2000 VA
- **Voltage** – EB version (230V to 115V - 50/60 Hz)
OF version (230V to 115V or 115V to 230V - 50/60 Hz)
- **Connections** – EB version (receptacle and 2-prong line cord)
OF version (8 inch long leads)
- **Insulation** – Class A insulation (105°C)



Part. No.	VA (Size)	Width	Depth	Height	Mtg. Centers	Wgt
110	100	1.87" 47.6mm	2.37" 60.3mm	2.50" 63.5mm	1.50 x 1.68" 38.1 x 42.8mm	1.5 lbs 0.68 kg
112	120	2.87" 73.0mm	2.12" 54.0mm	3.50" 88.9mm	2.25 x 1.75" 57.2 x 44.5mm	3.0 lbs 1.36 kg
115	150	2.87" 73.0mm	3.37" 85.7mm	3.50" 88.9mm	2.25 x 2.00" 57.2 x 50.8mm	3.5 lbs 1.59 kg
120	200	2.87" 73.0mm	3.50" 88.9mm	3.50" 88.9mm	2.25 x 2.12" 57.2 x 54.0mm	4.0 lbs 1.81 kg
125	250	2.87" 73.0mm	3.87" 98.4mm	3.50" 88.9mm	2.25 x 2.50" 57.2 x 63.5mm	4.8 lbs 2.18 kg
130	300	3.25" 82.6mm	3.87" 98.4mm	3.87" 98.4mm	2.50 x 2.43" 63.5 x 61.9mm	5.5 lbs 2.49 kg
150	500	3.25" 82.6mm	4.87" 123.8mm	3.87" 98.4mm	2.50 x 3.43" 63.5 x 87.3mm	8 lbs 3.63 kg
175	750	3.25" 82.6mm	5.87" 149.2mm	3.87" 98.4mm	2.50 x 4.43" 63.5 x 112.7mm	11 lbs 5.00 kg
1100	1000	4.50" 114.3mm	5.12" 130.2mm	5.50" 139.7mm	3.50 x 3.50" 88.9 x 88.9mm	14 lbs 6.35 kg
1150	1500	4.50" 114.3mm	6.12" 155.6mm	5.50" 139.7mm	3.50 x 4.50" 88.9 x 114.3mm	20 lbs 9.07 kg
1200	2000	4.50" 114.3 mm	7.12" 181.0mm	5.50" 139.7mm	3.50 x 5.50" 88.9 x 139.7mm	26 lbs 11.79 kg

Part. No.	VA (Size)	Width	Depth	Height	Mtg. Centers	Wgt
110-OF	100	2.25" 57.2mm	2.00" 50.8mm	1.93" 49.2mm	2.81" 71.4mm	1.3 lbs 0.59 kg
112-OF	120	3.37" 85.7mm	2.50" 63.5mm	2.87" 73.0mm	2.81 x 1.87" 71.4 x 47.6mm	2.5 lbs 1.13 kg
115-OF	150	3.37" 85.7mm	2.75" 69.9mm	2.87" 73.0mm	2.81 x 2.12" 71.4 x 54.0mm	3.0 lbs 1.36 kg
120-OF	200	3.37" 85.7mm	2.87" 73.0mm	2.87" 73.0mm	2.81 x 2.25" 71.4 x 57.2mm	3.5 lbs 1.59 kg
125-OF	250	3.37" 85.7mm	3.25" 82.6mm	2.87" 73.0mm	2.81 x 2.62" 71.4 x 66.7mm	4.2 lbs 1.90 kg
130-OF	300	3.75" 95.3mm	3.25" 82.6mm	3.12" 79.4mm	3.12 x 2.50" 79.4 x 63.5mm	5.0 lbs 2.27 kg
150-OF	500	3.75" 95.3mm	4.25" 107.9mm	3.12" 79.4mm	3.12 x 3.50" 79.4 x 88.9mm	8.0 lbs 3.63 kg
175-OF	750	3.75" 95.3mm	5.25" 133.4mm	3.12" 79.4mm	3.12 x 4.50" 79.4 x 114.3mm	11 lbs 5.00 kg
1100-OF	1000	5.25" 133.4mm	4.50" 114.3mm	4.37" 111.1mm	4.37 x 3.12" 111.1 x 79.4mm	14 lbs 6.35 kg
1150-OF	1500	5.25" 133.4mm	5.50" 139.7mm	4.37" 111.1mm	4.37 x 4.12" 111.1 x 104.8mm	19 lbs 8.62 kg
1200-OF	2000	5.25" 133.4mm	6.50" 165.1mm	4.37" 111.1mm	4.37 x 5.12" 111.1 x 130.2mm	25 lbs 11.34 kg

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Custom Magnetics Design Data Sheet

Application: Power transformer (50/60/400 Hz) _____

Switching mode power conversion _____ (Topology _____)

Other _____

Frequency: _____

Voltage(s):

Primary _____

Secondary _____ At current(s) _____

Above values are: AC _____ DC _____

Name _____
Address _____

Contact _____
Phone _____
Fax _____

Type of Rectification (or Secondary Loading): _____

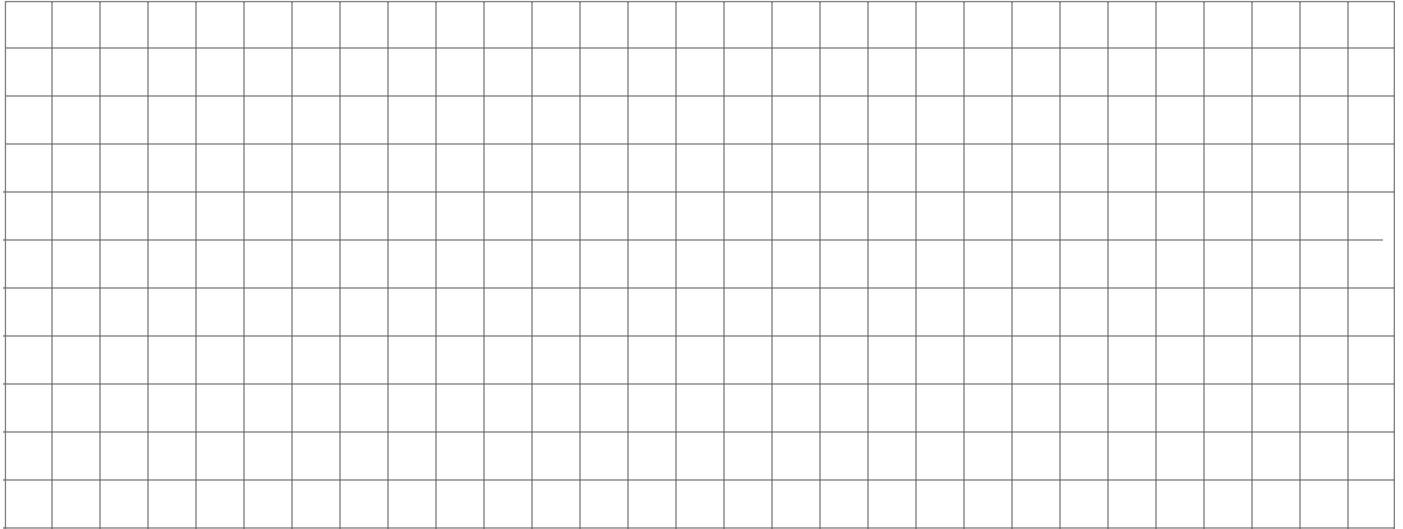
Duty Cycle (0 to 100%): _____

Dielectric Withstanding Voltage (Isolation Voltage): _____

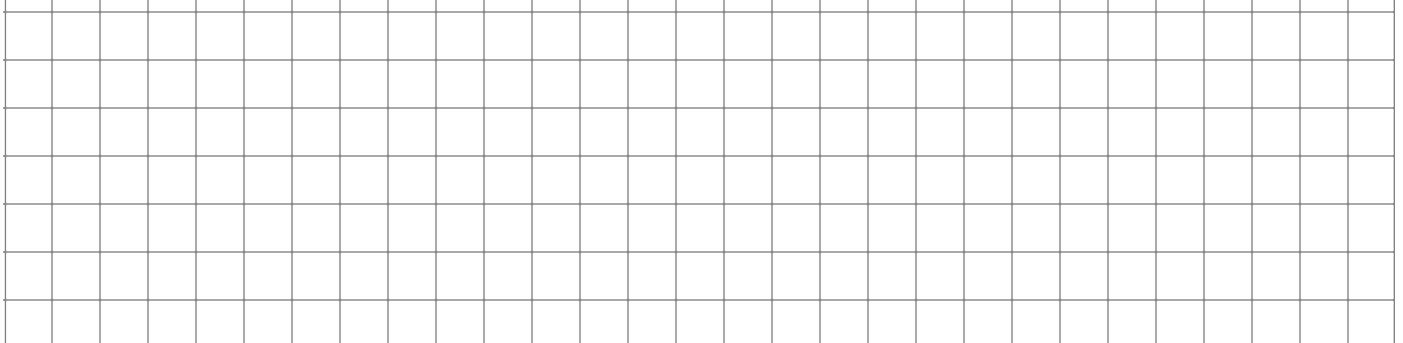
Other Requirements: _____

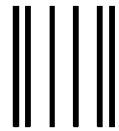
Quote Price & Delivery on Quantity of: _____

Schematic:



Mechanical Requirements:

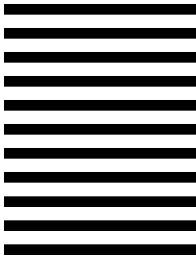




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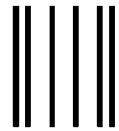
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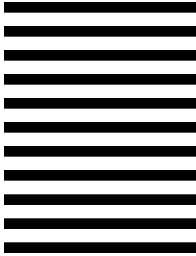
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How to specify power transformer & filter ratings

The purpose of this section is to provide a practical guide for the selection of a power supply transformer and filter components. A number of basic assumptions are made to avoid an academic discussion of unnecessary material. For those interested in a rigorous theoretical analysis, there are a number of fine references available. Additionally, circuit analysis using appropriate analysis software (SPICE or its equivalent) is recommended in the rare circumstances where a better understanding of a particular situation is needed, or when it becomes necessary to optimize some aspect of the design. Computer analysis is particularly useful in understanding areas that are difficult to approach using traditional circuit analysis methods, areas such as capacitor RMS ripple current.

One of the more esoteric problems encountered by the circuit designer is the selection of power transformer ratings for a particular DC power supply. The designer is immediately confronted with a number of rectifier circuits and filter configurations. For the sake of simplicity, we will make some assumptions which should be valid for 99% of the average designer's applications and present some useful rules of thumb appropriate for conservative design.

Filters

We will immediately discard the consideration of choke input filters and confine our choice to capacitor input filters because of the following:

1. It is desirable to eliminate the weight and cost of chokes.
2. It can be assumed that if a regulator is used it will provide sufficient extra ripple reduction so that an L-C section is not required. In addition, the regulator will compensate for the poor output voltage regulation with load, inherent in capacitor input systems.

The remaining disadvantages of the capacitive input filter system are caused by the discontinuous secondary current flow (high peak-to-average ratio of forward diode current). Current is drawn in short, high amplitude pulses to replace the charge of the filter capacitor which discharges into the load during diode off time. This results in higher effective RMS values of transformer secondary current. However, the transformer average VA rating is the same as the choke input filter because the higher DC output voltage obtained at the capacitor compensates for this effect. In addition, except perhaps for supplies handling very high currents, average semiconductor diodes will meet most of the peak or surge current requirements of capacitive filters.

Rectifier Circuit

The remaining choice is that of a rectifier circuit configuration. The most common single phase circuits are:

1. Half-Wave (single diode)
2. Full-Wave Center-Tapped (two diodes)
3. Full-Wave Bridge (four diodes)

4. Dual Complementary Supply — “Full-Wave Center-Tap” (four diodes)

The only advantages of the half-wave rectifier are its simplicity and the savings in cost of one diode. Its disadvantages are many:

1. Extremely high current spikes are drawn during the capacitor charging interval (only one current surge per cycle). This current is limited only by the effective transformer and rectifier series impedance, but it must not be too high or it will result in rectifier damage. This short once-per-cycle current spike also results in very high secondary RMS currents.
2. The unidirectional DC current in the transformer secondary biases the transformer core with a component of DC flux density. As a result, more “iron” is needed to avoid core saturation.

About the only time it would pay to consider using the half-wave rectifier is for very low DC power levels of about $\frac{1}{2}$ watt or less. At these levels a power transformer cannot be reduced very much in size (at reasonable cost) and a small filter capacitor will be large enough for adequate DC smoothing.

The remaining single-phase rectifier circuits are of the “full-wave” type. Secondary current surges occur twice per cycle so that they are of smaller magnitude and the fundamental ripple frequency is double the supply frequency (i.e., 120 Hz rather than the 60 Hz of a half-wave system). All full-wave rectifiers also have the same basic rectified waveform applied to the filter capacitor.

Other Factors

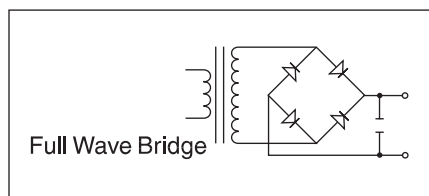
• Full-Wave Center-Tap

Uses $\frac{1}{2}$ of secondary winding at a time
Requires center-tap
Uses 2 diodes

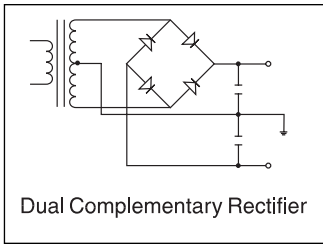
• Full-Wave Bridge

Uses full secondary winding continuously
No center-tap required
Uses 4 diodes

As can be seen above, the choice between FWCT and Bridge configurations is a tradeoff. The bridge rectifier has the best transformer utilization but requires the use of 4 diodes. The extra diodes result in twice the diode voltage drop of a FWCT circuit so that the FWCT is usually preferable in low voltage supplies.

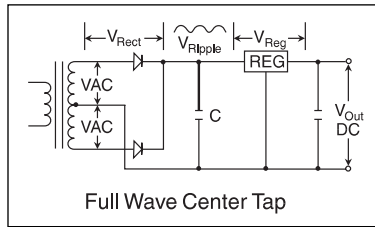


How to specify power transformer & filter ratings



The "dual complementary rectifier circuit" is the combination of two FWCT circuits and is a very efficient way of obtaining two identical outputs of reversed polarity sharing a common ground. It is also called a "center-tapped bridge rectifier."

The diagram below represents a full-wave center-tapped rectifier using a capacitive filter and is the most common selection for moderate power, regulated DC supplies. The following assumptions can safely be made:



1. V_{REG} is approximately 3 volts DC or greater.
2. V_{RECT} is about 1.25 volts DC.
3. V_{RIPPLE} is about 10% VDC peak.

The following formula may be used for determining the transformer secondary voltage:

$$V_{AC} = \frac{V_{Out} + V_{Reg} + V_{Rect} + V_{Ripple}}{0.9}$$

$$\times \frac{V_{Nom}}{V_{Lowline}} \times \frac{1}{\sqrt{2}} \quad \text{where: } 0.9 = \text{rectifier efficiency (typical)}$$

$\frac{V_{NOM}}{V_{LOWLINE}}$ is

the ratio of the nominal AC line voltage to the required low line conditions.

A sample illustration of the above will be shown for a supply requiring an output of 5V DC at 2A DC to operate down to an input voltage of 95V RMS.

$$V_{OUT} = 5V$$

$$V_{REG} = 3V$$

$$V_{RECT} = 1.25V$$

$$V_{RIPPLE} = 0.5 (1V \text{ p-p})$$

$$V_{AC} = \frac{9.75}{0.9} \times \frac{115}{95} \times \frac{1}{\sqrt{2}} = 9.27 \text{ VAC}$$

Therefore, the transformer secondary voltage can be specified as about 18 V CT. For a bridge rectifier of the same output requirements, the only change is that:

$$V_{RECT} = 2 \times 1.25 = 2.5V$$

As a result V_{AC} will be reformulated as:

$$V_{AC} = \frac{11}{0.9} \times \frac{115}{95} \times \frac{1}{\sqrt{2}} = 10.46 \text{ VAC}$$

so that the transformer secondary voltage now becomes about 10.5V.

Transformer Secondary Current

The remaining step is to determine the transformer RMS secondary current. This can be accurately determined only by complex analysis. However, for practical engineering purposes the chart below may be used.

Rectifier Type	Filter Type*	Required RMS Secondary Current Rating
Full-Wave Center-Tap	Choke Input	0.7 x DC Current
Full-Wave Center-Tap	Capacitor Input	1.2 x DC Current
Full-Wave Bridge	Choke Input	DC Current
Full-Wave Bridge	Capacitor Input	1.8 x DC Current

*Even though we have dropped choke input filters from this discussion, they are included for reference.

For instance, in our particular example (5 V, 2A DC supply) the transformer RMS current would be:
 for FWCT $1.2 \times 2 = 2.4 \text{ A}$
 for bridge $1.8 \times 2 = 3.6 \text{ A}$

The total transformer specification would then be:

Circuit	Secondary Rating	Possible "Signal" Parts
FWCT	18.5 CT @ 2.4A RMS = 43.2 VA	241-7-20, 36-1
bridge	10.5 @ 3.6A RMS = 36 VA	ST-7-10, 241-6 or 7-10, 10-4

Dual Complementary Supply

One more common example will be given, i.e., a dual complementary supply for ± 15 V @ 100 mA DC.

$$V_{OUT} = \pm 15 \quad V_{RECT} = 1.25$$

$$V_{REG} = 3$$

$$V_{RIPPLE} = 0.75 (1.5 \text{ V p-p})$$

$$V_{AC} = \frac{(15 + 3 + 1.25 + 0.75)}{0.9} \times \frac{115}{95} \times \frac{1}{\sqrt{2}} = 19V$$

$$I_{AC} = 1.8 \times 100 \text{ mA} = 180 \text{ mA RMS}$$

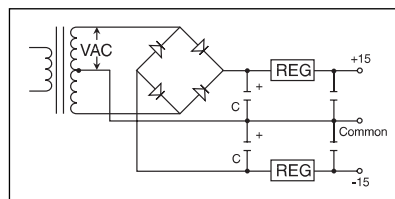
The transformer secondary rating is 38 V CT @ 180 mA RMS. Possible Signal parts would be ST-4-36, PC-34-300, PC-40-250. A precautionary calculation remains to be made. That is, the increase in voltage at the filter capacitor (into the regulator) caused by a high line condition. If we assume our highest line voltage to be 130 V AC then the transformer output (compared to low line) would rise by the ratio 130/95. In the 5V supply, for instance, the following would happen:

$$V_{AC} = \frac{130}{95} \times 9.27 = 12.7V$$

In the dual complementary +15 V supply:

$$V_{AC} = \frac{130}{95} \times 19 = 26V$$

The increase in output must be absorbed by the regulator, which results in higher regulator power dissipation. The illustrated values are safe for the typical IC regulator but should be checked in any specific application.



How to specify power transformer & filter ratings

ADDITIONAL FACTORS TO BE CONSIDERED IN TRANSFORMER SELECTION

Load Regulation

It has been assumed in the previous discussion of the change in transformer secondary voltage with line voltage that no change has been occurring in load current. Therefore, the transformers would seem to be ideal and the transformer secondary voltage (VAC) will always be the same. Actually, all the voltages calculated are assumed to be full load.

Since transformers are not ideal and have an internal impedance or "regulation" characteristic, variations in load current may cause a problem. If the load should be "light" at "high line," then there will be an additional rise in secondary voltage, beyond that due to the rising line voltage, caused by the decreasing voltage drop in the transformer windings.

Most smaller VA transformers (<10VA) have a load regulation of 20% or higher. This means that the transformer no-load voltage will be 20% or more higher than rated full-load voltage. This must then be taken into account in the calculation of maximum VAC (and DC voltage into regulator) with low-load currents.

Due to the inherent design characteristics of transformers, "regulation" will vary inversely with size (or VA rating). In larger transformers size is determined primarily by the heat generated by internal losses. In smaller transformers (low VA rating) size is determined by the maximum permissible no-load to full-load regulation. Even though this is an important design limitation, most transformer manufacturers do not publish load regulation data. The chart below tabulates load regulation for Signal standard transformers.

It is possible to estimate the output voltage at intermediate loads since load regulation varies in an almost linear manner. For example, the 241-8-16 has a full-load rating of 16 V @ 6.25 A and a regulation of 10%. Its no-load output would be 10% more than 16 or 17.6 V. At half-load (3.12 A) its output would be 5% more than 16 or 16.8 V. Similar estimates can be made for any % load.

Another factor to bear in mind is that it is possible to safely exceed the VA rating of many small power transformers. If the added regulation (drop in output voltage) is acceptable, an "overload" may be permissible because the design is regulation-limited rather than heat rise-limited. If such a choice is being considered, the decision should be checked with our Design Engineering department.

Signal Transformer - % Load Regulation of Standard Transformers		
Family or Series	Size or VA Rating	Approx. % Regulation
	2.5, 5.0, 10VA	30
14A & 14A-R	20, 30 & 56 VA	20
IF (International Flathead)	2VA-18VA	21-27
	24VA & 30VA	20
A41	25VA	20
	43VA	15
	80 & 130VA	10
	175VA	8
MPI	200VA-900VA	4-10
HPI	2KVA-3.5KVA	2-4
M4L	3, 6, 10	8
ST & DST	ST-2	30
SPLIT TRAN	ST, 3, 4, 5, 6 & 7	20
PC & DPC	ALL	20
LP (Flathead)	2.5 & 6VA	30
	12, 24 & 48VA	20
241 & DP241	2.4 TO 12VA SIZES 3, 4, 5	20
	30 & 56VA SIZES 6 & 7	15
	100VA SIZE 8	10
	1 TO 100VA	10
RECTIFIER TYPES	100 TO 350VA	8
	500VA OR OVER	5% OR LESS

% load regulation is defined as: $\frac{V_{nl} - V_{fl}}{V_{fl}} \times 100\%$
 or the % rise in output voltage at no load as compared to full load.

Temperature Rise

In power transformers over 25VA, temperature rise becomes a factor. The transformer may be constructed with materials capable of withstanding higher temperatures and be a perfectly valid design. However, the extra power dissipated may cause heating of nearby components. This added power loss increases the total power dissipated in the circuit area. The problem is not the internal temperature of the transformer, but the actual increase in watts lost.

Shielding

Certain AC power line noise and transients will be fed through to the transformer secondary because of the capacitance between windings. This is a problem which is very difficult to analyze. Whether or not it is a problem in a particular application can be best determined empirically.

If such feedthrough is a problem, the most common first step is to use an electro-static shield between windings. This effectively reduces the inter-winding capacitance. An equal and sometimes superior approach is to choose transformers with non-concentric windings, i.e., with primary and secondary wound side-by-side rather than one over the other. Both result in at least order of magnitude reductions in capacitance. The "non-concentric" approach, however, gives superior reductions. It also results in higher insulation resistance and makes it simpler to obtain higher insulation test voltages.

Certain types of feedthrough cannot be much affected by the transformer design and other approaches such as line filters or "MOVs" or ZNR's (transient surge suppressors) may have to be considered.

Summary

This has been an attempt to provide a simple, practical method of determining transformer ratings. Certain basic assumptions have been made and this section is not meant as a rigorous academic analysis. However, such material is readily available in the literature (see below). This, we feel, may help bridge the gap for the working designer.

References

For more detailed theoretical analysis the following are recommended:

1. Reuben Lee, Electronic Transformers & Circuits, 1947, John Wiley & Sons
2. EE Staff – MIT, Magnetic Circuits & Transformers, 1943, John Wiley & Sons
3. O.H. Schade, Proc. IRE, vol 31, p. 356, 1943

How to specify power transformer & filter ratings

COMMENTS ON CAPACITOR & DIODE SELECTION

Capacitor Selection

For low current supplies ($I_{OUT} < 1A$) capacitor selection is relatively straight-forward. Capacitance is found by the simple formula:

$$C = \frac{1L \times 6 \times 10^{-3}}{\Delta V}$$

where: 1L = DC load current
 ΔV = peak-to-peak ripple voltage
ripple frequency = 120 Hz.

This yields 2000 μ F/amp for 3V p-p ripple. At DC currents below 1 amp, capacitor heating is usually not a problem and peak-to-peak ripple voltage is the determining factor in capacitor size.

At higher values of capacitance, where the ratio of capacitor outside surface area to volume is significantly lower, internal heating becomes a problem. Ripple current rating may be a determining factor in capacitor selection, rather than ripple voltage. In many cases, capacitor size will have to be increased to prevent excessive internal heating. Manufacturers' data sheets should be consulted (after an initial selection is made) to ensure that capacitor ripple current ratings are met. Remember that the RMS ripple current ratings shown on capacitor data sheets are not the same as DC load current. RMS ripple current in a capacitor input filter is 2 to 3 times the load current. In addition, the time-to-failure used to rate capacitors on data sheets is often 10,000 hours. For five-year life (40,000 hours), ambient temperature may have to be derated 30°C from the data sheet rating. Capacitor life roughly doubles for each 15°C reduction in operating temperature. The following calculations illustrate a typical design example:

assume 1L = 3A, ΔV = 4V p-p,

VDC = 12V

$$C = \frac{(6 \times 10^{-3}) (3A)}{4V} = 4,500\mu F$$

Manufacturer's rating on a 4,600 μ F/20V capacitor @ TA = 65°C is 3.1 A RMS. Dividing by 2.5 to convert from RMS ripple current to output current yields a maximum DC load current of 1.24 amps. Obviously either a large capacitor is required or ambient temperature must be reduced.

As a final note, be sure to check whether the data sheet ratings are for still or moving air. Computer grade capacitors are often rated only for moving air. Other types may be rated for still air and are, therefore, actually more conservatively rated.

Remember that capacitors are the number one cause of power supply failure. Don't let your supplies dominate the statistics column!

Diode Selection

The RMS value of the current flowing into a capacitor input filter is 2 to 3 times the DC output current because the current is delivered in short pulses. Assuming a full-wave center-tap or bridge, this means that although each diode is conducting only on alternate half cycles, it should be rated for at least the full output current. To ensure adequate surge capability during turn-on, a diode rating of at least twice the output current is recommended, especially for higher current supplies where the ratio of filter capacitance to output current is somewhat higher. Keep in mind that axial lead diodes achieve most of their heat sinking through the leads. Short leads soldered to large area standoffs or printed circuit pads are definitely recommended.

For "short circuit proof" IC regulated supplies using three-terminal regulators, an additional diode derating may have to be used. Long-term output shorts do not harm the regulator, which goes into a current limit or thermal limit mode to protect itself. The diodes, however, may experience a substantial current increase during the short. Regulator data sheets should be consulted for current limit values, keeping in mind that current limit is a function of input-output voltage differential. At high input voltages, the short circuit current of IC regulators is often less than full load current, tending to alleviate this problem.

METHOD OF DETERMINING SECONDARY CURRENT RATINGS

The secondary currents shown in the tables are RMS ratings. Depending upon rectifier circuit configurations, the RMS secondary current is different from the DC output current. This is indicated in the chart below:

Rectifier Type	Filter Type	RMS Secondary Current is
Full-Wave Center-Tap	Choke Input	= 0.7 x DC Amps
Full-Wave Center-Tap	Capacitor Input	= 1 to 1.2 x DC Amps
Full-Wave Bridge	Choke Input	= DC Amps
Full-Wave Bridge	Capacitor Input	= 1.6 to 1.8 x DC Amps

For example, in a F.W. Bridge circuit with a capacitive filter, if the load is 1 Amp DC, the RMS Secondary current is 1.6 to 1.8 Amp RMS.