

Based LEDs

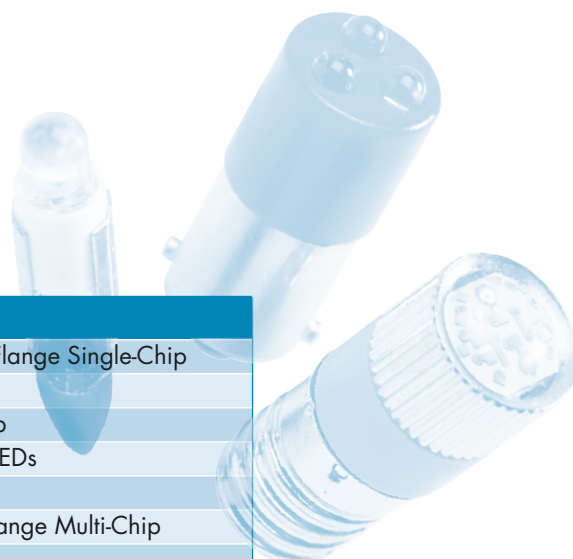
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Apem is continuing its developments within the Optoelectronics market by introducing a range of based LED lamps. These based LED lamps are drop in replacements for the less efficient filament lamps, typically used within pushbutton switches and indicators.

Based LED lamps have many features and benefits over filament lamps, long lifetime (typically 100,000 hours), low power consumption, low heat generation, shock and vibration resistance, long service life (low cost of ownership), high reliability – ideal for critical applications where the presence of indication is important or where lamp replacement is difficult or costly.

The Apem based LED range consists of the most common bases associated with filament lamps, T1 ¾ Midget Groove, T1 ¾ Midget Flange, BA9s, E10, T5.5 telephone slide, T6.8 telephone slide, T1 Bi-Pin, Wedge base and BA15d (for use in application such as stacking towers).

The Apem range of based LEDs have the option of a High Intensity Single-Chip LED, Cluster (typically 3 high intensity LEDs) and Multi-Chip (typically 6 or 8 chip devices). Integral resistors allow direct connection (depending on model) from 6V through to 230V. Some models are also fitted with bridge rectifiers for AC/DC operation.

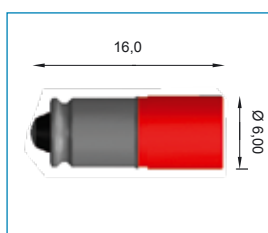


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Based LEDs

Single-Chip

T1 3/4 Midget Groove Single-Chip



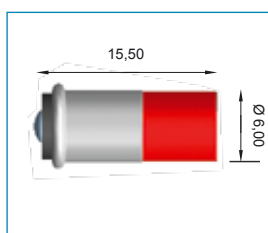
Part Number	Colour	Voltage (VDC)	Current (mA)	Luminous Intensity (mcd)
MGSR12	Red	12V	14	1750
MGSG12	Green	12V	14	1610
MGSY12	Yellow	12V	14	630
MGSB12	Blue	12V	14	490
MGSW12	White	12V	14	2070
MGSR24	Red	24V	14	1750
MGSG24	Green	24V	14	1610
MGSY24	Yellow	24V	14	630
MGSB24	Blue	24V	14	490
MGSW24	White	24V	14	2070
MGSR28	Red	28V	14	1750
MGSG28	Green	28V	14	1610
MGSY28	Yellow	28V	14	630
MGSB28	Blue	28V	14	490
MGSW28	White	28V	14	2070

For other voltage options please contact APEM

For AC/DC versions please specify "A" at the end of the part number

Example MGSR12A = Red 12VAC/DC

T1 3/4 Midget Flange Single-Chip



Part Number	Colour	Voltage (VDC)	Current (mA)	Luminous Intensity (mcd)
MFSR12	Red	12V	14	1750
MFSG12	Green	12V	14	1610
MFSY12	Yellow	12V	14	630
MFSB12	Blue	12V	14	490
MFSW12	White	12V	14	2070
MFSR24	Red	24V	14	1750
MFSG24	Green	24V	14	1610
MFSY24	Yellow	24V	14	630
MFSB24	Blue	24V	14	490
MFSW24	White	24V	14	2070
MFSR28	Red	28V	14	1750
MFSG28	Green	28V	14	1610
MFSY28	Yellow	28V	14	630
MFSB28	Blue	28V	14	490
MFSW28	White	28V	14	2070

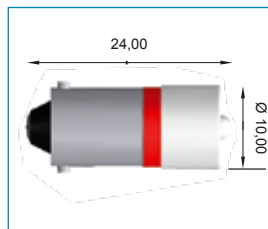
For other voltage options please contact APEM

For AC/DC versions please specify "A" at the end of the part number

Example MFSR12A = Red 12VAC/DC

Based LEDs

Single-Chip

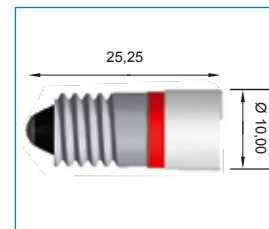


MBC Ba9s Single-Chip

Part Number	Colour	Voltage (V)AC/DC	Current (mA) AC/DC	Luminous Intensity (mcd)
BA9SR6A	Red	6V	9/17	1750
BA9SG6A	Green	6V	9/17	1610
BA9SY6A	Yellow	6V	9/17	630
BA9SB6A	Blue	6V	9/17	490
BA9SW6A	White	6V	9/17	2070
BA9SR12A	Red	12V	9/17	1750
BA9SG12A	Green	12V	9/17	1610
BA9SY12A	Yellow	12V	9/17	630
BA9SB12A	Blue	12V	9/17	490
BA9SW12A	White	12V	9/17	2070
BA9SR24A	Red	24V	9/17	1750
BA9SG24A	Green	24V	9/17	1610
BA9SY24A	Yellow	24V	9/17	630
BA9SB24A	Blue	24V	9/17	490
BA9SW24A	White	24V	9/17	2070
BA9SR28A	Red	28V	9/17	1750
BA9SG28A	Green	28V	9/17	1610
BA9SY28A	Yellow	28V	9/17	630
BA9SB28A	Blue	28V	9/17	490
BA9SW28A	White	28V	9/17	2070
BA9SR48A	Red	48V	9/8	990
BA9SG48A	Green	48V	9/8	920
BA9SY48A	Yellow	48V	9/8	360
BA9SB48A	Blue	48V	9/8	280
BA9SW48A	White	48V	9/8	1180
BA9SR130A	Red	130VAC	9	685
BA9SG130A	Green	130VAC	9	570
BA9SY130A	Yellow	130VAC	9	225
BA9SB130A	Blue	130VAC	9	175
BA9SW130A	White	130VAC	9	710
BA9SR230A	Red	230VAC	9	375
BA9SG230A	Green	230VAC	9	345
BA9SY230A	Yellow	230VAC	9	135
BA9SB230A	Blue	230VAC	9	105
BA9SW230A	White	230VAC	9	410

For other voltage options please contact APEM

Note: 130V, 230V only available AC



E10 Single-Chip

Part Number	Colour	Voltage (V)AC/DC	Current (mA) AC/DC	Luminous Intensity (mcd)
E10SR6A	Red	6V	9/17	1750
E10SG6A	Green	6V	9/17	1610
E10SY6A	Yellow	6V	9/17	630
E10SB6A	Blue	6V	9/17	490
E10SW6A	White	6V	9/17	2070
E10SR12A	Red	12V	9/17	1750
E10SG12A	Green	12V	9/17	1610
E10SY12A	Yellow	12V	9/17	630
E10SB12A	Blue	12V	9/17	490
E10SW12A	White	12V	9/17	2070
E10SR24A	Red	24V	9/17	1750
E10SG24A	Green	24V	9/17	1610
E10SY24A	Yellow	24V	9/17	630
E10SB24A	Blue	24V	9/17	490
E10SW24A	White	24V	9/17	2070
E10SR28A	Red	28V	9/17	1750
E10SG28A	Green	28V	9/17	1610
E10SY28A	Yellow	28V	9/17	630
E10SB28A	Blue	28V	9/17	490
E10SW28A	White	28V	9/17	2070
E10SR48A	Red	48V	9/8	990
E10SG48A	Green	48V	9/8	920
E10SY48A	Yellow	48V	9/8	360
E10SB48A	Blue	48V	9/8	280
E10SW48A	White	48V	9/8	1180
E10SR130A	Red	130VAC	9	685
E10SG130A	Green	130VAC	9	570
E10SY130A	Yellow	130VAC	9	225
E10SB130A	Blue	130VAC	9	175
E10SW130A	White	130VAC	9	710
E10SR230A	Red	230VAC	9	375
E10SG230A	Green	230VAC	9	345
E10SY230A	Yellow	230VAC	9	135
E10SB230A	Blue	230VAC	9	105
E10SW230A	White	230VAC	9	410

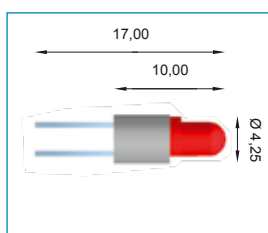
For other voltage options please contact APEM

Note: 130V, 230V only available AC

Based LEDs

Single-Chip

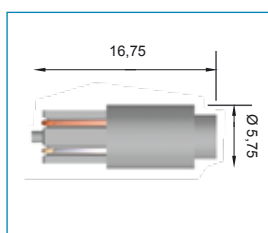
T1 Bi-Pin Single-Chip



Part Number	Colour	Voltage (V)AC/DC	Current (mA) AC/DC	Luminous Intensity (mcd)
T1SR12A	Red	12V	6/12	85
T1SG12A	Green	12V	6/12	95
T1SY12A	Yellow	12V	6/12	85
T1SB12A	Blue	12V	6/12	500
T1SW12A	White	12V	6/12	850
T1SR24A	Red	24V	5/10	85
T1SG24A	Green	24V	5/10	95
T1SY24A	Yellow	24V	5/10	85
T1SB24A	Blue	24V	5/10	500
T1SW24A	White	24V	5/10	850
T1SR28A	Red	28V	5/10	85
T1SG28A	Green	28V	5/10	95
T1SY28A	Yellow	28V	5/10	85
T1SB28A	Blue	28V	5/10	500
T1SW28A	White	28V	5/10	850

For other voltage options please contact APEM

T5 Wedge Base Single-Chip



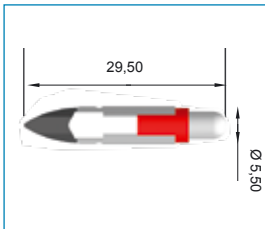
Part Number	Colour	Voltage (V)AC/DC	Current (mA) AC/DC	Luminous Intensity (mcd)
T5WBSR12A	Red	12V	9/15	90
T5WBSG12A	Green	12V	9/15	1400
T5WBSY12A	Yellow	12V	9/15	85
T5WBSB12A	Blue	12V	9/15	600
T5WBSW12A	White	12V	9/15	900
T5WBSR24A	Red	24V	6/12	90
T5WBSG24A	Green	24V	6/12	1400
T5WBSY24A	Yellow	24V	6/12	85
T5WBSB24A	Blue	24V	6/12	600
T5WBSW24A	White	24V	9/15	900
T5WBSR28A	Red	28V	6/12	90
T5WBSG28A	Green	28V	6/12	1400
T5WBSY28A	Yellow	28V	6/12	85
T5WBSB28A	Blue	28V	6/12	600
T5WBSW28A	White	28V	9/15	900

For other voltage options please contact APEM

Based LEDs

Single-Chip/Cluster

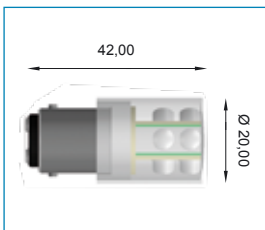
T5.5 Telephone Slide Single-Chip



Part Number	Colour	Voltage (V)AC/DC	Current (mA) AC/DC	Luminous Intensity (mcd)
T5.5SR12A	Red	12V	9/15	250
T5.5SG12A	Green	12V	9/15	2100
T5.5SY12A	Yellow	12V	9/15	300
T5.5SB12A	Blue	12V	9/15	1200
T5.5SW12A	White	12V	9/15	1500
T5.5SR24A	Red	24V	6/12	250
T5.5SG24A	Green	24V	6/12	2100
T5.5SY24A	Yellow	24V	6/12	300
T5.5SB24A	Blue	24V	6/12	1200
T5.5SW24A	White	24V	6/12	1500
T5.5SR28A	Red	28V	6/12	250
T5.5SG28A	Green	28V	6/12	2100
T5.5SY28A	Yellow	28V	6/12	300
T5.5SB28A	Blue	28V	6/12	1200
T5.5SW28A	White	28V	6/12	1500

For other voltage options please contact APEM

Ba15d Tower LEDs

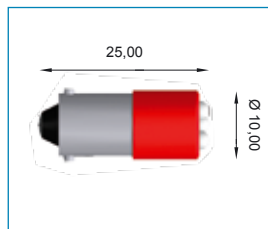


Part Number	Colour	Voltage (V)AC/DC	Current (mA) AC/DC	Luminous Intensity (mcd)
TLR24A	Red	24V	20	130
TLG24A	Green	24V	20	100
TLY24A	Yellow	24V	20	150
TLB24A	Blue	24V	20	50
TLW24A	White	24V	20	150
TLR130A	Red	130VAC	20	130
TLG130A	Green	130VAC	20	100
TLY130A	Yellow	130VAC	20	150
TLB130A	Blue	130VAC	20	50
TLW130A	White	130VAC	20	150
TLR230A	Red	230VAC	20	130
TLG230A	Green	230VAC	20	100
TLY230A	Yellow	230VAC	20	150
TLB230A	Blue	230VAC	20	50
TLW230A	White	230VAC	20	150

For other voltage options please contact APEM

Note: 130V, 230V only available AC

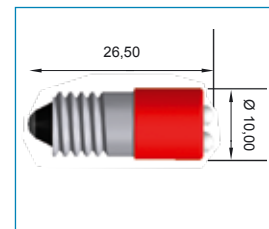
Based LEDs Cluster



Ba9s LED Cluster

Part Number	Colour	Voltage (V)AC/DC	Current (mA) AC/DC	Luminous Intensity (mcd)
BA9CR24A	Red	24V	9/17	3 x 1750
BA9CG24A	Green	24V	9/17	3 x 1610
BA9CY24A	Yellow	24V	9/17	3 x 630
BA9CB24A	Blue	24V	9/17	3 x 490
BA9CW24A	White	24V	9/17	3 x 2070
BA9CR28A	Red	28V	9/17	3 x 1750
BA9CG28A	Green	28V	9/17	3 x 1610
BA9CY28A	Yellow	28V	9/17	3 x 630
BA9CB28A	Blue	28V	9/17	3 x 490
BA9CW28A	White	28V	9/17	3 x 2070
BA9CR48A	Red	48V	8	3 x 990
BA9CG48A	Green	48V	8	3 x 920
BA9CY48A	Yellow	48V	8	3 x 360
BA9CB48A	Blue	48V	8	3 x 280
BA9CW48A	White	48V	8	3 x 1180
BA9CR130A	Red	130VAC	5	3 x 685
BA9CG130A	Green	130VAC	5	3 x 570
BA9CY130A	Yellow	130VAC	5	3 x 225
BA9CB130A	Blue	130VAC	5	3 x 175
BA9CW130A	White	130VAC	5	3 x 710
BA9CR230A	Red	230VAC	3	3 x 375
BA9CG230A	Green	230VAC	3	3 x 345
BA9CY230A	Yellow	230VAC	3	3 x 135
BA9CB230A	Blue	230VAC	3	3 x 105
BA9CW230A	White	230VAC	3	3 x 470

Note: 130V, 230V only available AC



E10 LED Cluster

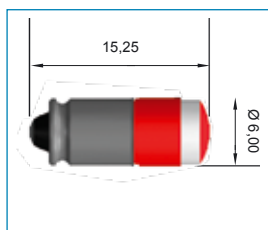
Part Number	Colour	Voltage (V)AC/DC	Current (mA) AC/DC	Luminous Intensity (mcd)
E10CR24A	Red	24V	9/17	3 x 1750
E10CG24A	Green	24V	9/17	3 x 1610
E10CY24A	Yellow	24V	9/17	3 x 630
E10CB24A	Blue	24V	9/17	3 x 490
E10CW24A	White	24V	9/17	3 x 2070
E10CR28A	Red	28V	9/17	3 x 1750
E10CG28A	Green	28V	9/17	3 x 1610
E10CY28A	Yellow	28V	9/17	3 x 630
E10CB28A	Blue	28V	9/17	3 x 490
E10CW28A	White	28V	9/17	3 x 2070
E10CR48A	Red	48V	8	3 x 990
E10CG48A	Green	48V	8	3 x 920
E10CY48A	Yellow	48V	8	3 x 360
E10CB48A	Blue	48V	8	3 x 280
E10CW48A	White	48V	8	3 x 2070
E10CR130A	Red	130VAC	5	3 x 685
E10CG130A	Green	130VAC	5	3 x 570
E10CY130A	Yellow	130VAC	5	3 x 225
E10CB130A	Blue	130VAC	5	3 x 175
E10CW130A	White	130VAC	5	3 x 710
E10CR230A	Red	230VAC	3	3 x 375
E10CG230A	Green	230VAC	3	3 x 345
E10CY230A	Yellow	230VAC	3	3 x 135
E10CB230A	Blue	230VAC	3	3 x 105
E10CW230A	White	230VAC	5	3 x 470

Note: 130V, 230V only available AC

Based LEDs

Multi-Chip

T1 3/4 Midget Groove Multi-Chip



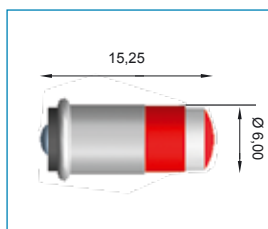
Part Number	Colour	Voltage (VDC)	Current (mA)	Luminous Intensity (mcd)
MGMR12	Red	12V	30	40
MGMG12	Green	12V	30	35
MGMY12	Yellow	12V	30	45
MGMR24	Red	24V	14	40
MGMG24	Green	24V	14	35
MGMY24	Yellow	24V	14	45
MGMR28	Red	28V	14	40
MGMG28	Green	28V	14	35
MGMY28	Yellow	28V	14	45

For other voltage options please contact APEM

For AC/DC versions please specify "A" at the end of the part number

Example MGMR12A = Red 12VAC/DC

T1 3/4 Midget Flange Multi-Chip



Part Number	Colour	Voltage (VDC)	Current (mA)	Luminous Intensity (mcd)
MFMR12	Red	12V	30	40
MFMG12	Green	12V	30	35
MFMY12	Yellow	12V	30	45
MFMR24	Red	24V	14	40
MFMG24	Green	24V	14	35
MFMY24	Yellow	24V	14	45
MFMR28	Red	28V	14	40
MFMG28	Green	28V	14	35
MFMY28	Yellow	28V	14	45

For other voltage options please contact APEM

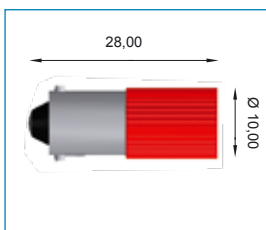
For AC/DC versions please specify "A" at the end of the part number

Example MFMR12A = Red 12VAC/DC

Based LEDs

Multi-Chip

Ba9s Multi-Chip



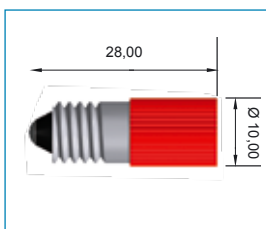
For short bodied 21 mm devices contact APEM

Part Number	Colour	Voltage (V)AC/DC	Current (mA) AC/DC	Luminous Intensity (mcd)
BA9MR06A	Red	6VAC	35	110
BA9MG06A	Green	6VAC	27	95
BA9MY06A	Yellow	6VAC	27	95
BA9MR12A	Red	12V	38/25	110/105
BA9MG12A	Green	12V	38/25	170/160
BA9MY12A	Yellow	12V	38/25	120/110
BA9MR24A	Red	24V	19/15	110/105
BA9MG24A	Green	24V	19/15	170/160
BA9MY24A	Yellow	24V	19/15	120/110
BA9MR28A	Red	28V	19/15	110/105
BA9MG28A	Green	28V	19/15	170/160
BA9MY28A	Yellow	28V	19/15	120/110
BA9MR48A	Red	48V	13/12	70/70
BA9MG48A	Green	48V	13/12	70/70
BA9MY48A	Yellow	48V	13/12	70/70

For other voltage options please contact APEM

For flashing LED options please contact APEM

E10 Multi-Chip



For short bodied 21 mm devices contact APEM

Part Number	Colour	Voltage (V)AC/DC	Current (mA) AC/DC	Luminous Intensity (mcd)
E10MR06A	Red	6VAC	35	110
E10MG06A	Green	6VAC	27	95
E10MY06A	Yellow	6VAC	27	95
E10MR12A	Red	12V	38/25	110/105
E10MG12A	Green	12V	38/25	170/160
E10MY12A	Yellow	12V	38/25	120/110
E10MR24A	Red	24V	19/15	110/105
E10MG24A	Green	24V	19/15	170/160
E10MY24A	Yellow	24V	19/15	120/110
E10MR28A	Red	28V	19/15	110/105
E10MG28A	Green	28V	19/15	170/160
E10MY28A	Yellow	28V	19/15	120/110
E10MR48A	Red	48V	13/12	70/70
E10MG48A	Green	48V	13/12	70/70
E10MY48A	Yellow	48V	13/12	70/70

For other voltage options please contact APEM

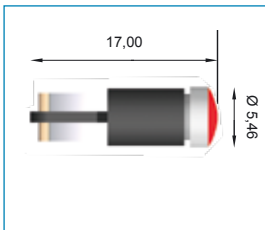
For flashing LED options please contact APEM

Note: 6V only available AC

Based LEDs

Multi-Chip

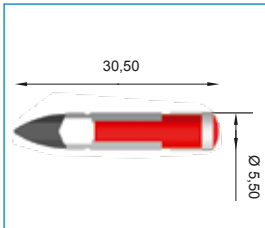
T5 Wedge Base Multi-Chip



Part Number	Colour	Voltage (V)AC/DC	Current (mA) AC/DC	Luminous Intensity (mcd)
T5WBMR12A	Red	12V	26/20	24
T5WBMG12A	Green	12V	26/20	60
T5WBMY12A	Yellow	12V	26/20	42
T5WBMR24A	Red	24V	13/10	24
T5WBMG24A	Green	24V	13/10	60
T5WBMY24A	Yellow	24V	13/10	42
T5WBMR28A	Red	28V	13/10	24
T5WBMG28A	Green	28V	13/10	60
T5WBMY28A	Yellow	28V	13/10	42

For other voltage options please contact APEM

T5.5 Telephone Slide Multi-Chip



Part Number	Colour	Voltage (VDC)	Current (mA)	Luminous Intensity (mcd)
T5.5MR12	Red	12V	30	36
T5.5MG12	Green	12V	30	90
T5.5MY12	Yellow	12V	30	63
T5.5MR24	Red	24V	15	36
T5.5MG24	Green	24V	15	90
T5.5MY24	Yellow	24V	15	63
T5.5MR28	Red	28V	15	36
T5.5MG28	Green	28V	15	90
T5.5MY28	Yellow	28V	15	63

For other voltage options please contact APEM