

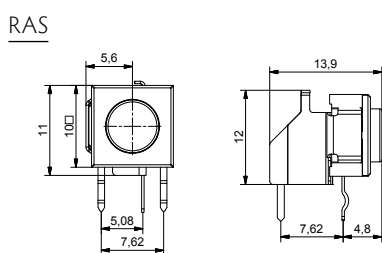
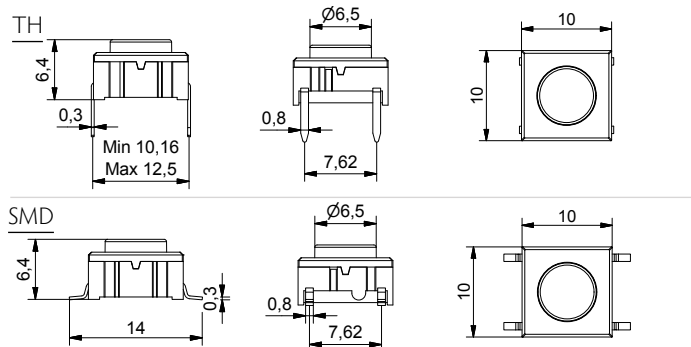


- Through-hole (TH) or surface mount (SMD)
- 50mA/24VDC
- Single pole/momentary
- 10,000,000 operations lifetime
- Temperature range:
 - High temp: -40/+160C
- IP 67 sealing
- Actuation force: 3.5N
- Most caps in the catalogue have a version for mounting on 3F switch as well. Contact MEC for further information.

All dimensions in mm

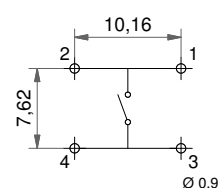
Tolerances +/-0.2mm

3C (TH, SMD & RAS)

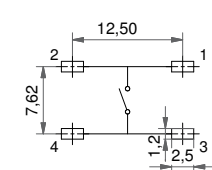


PCB LAYOUT

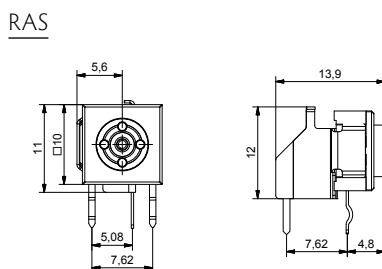
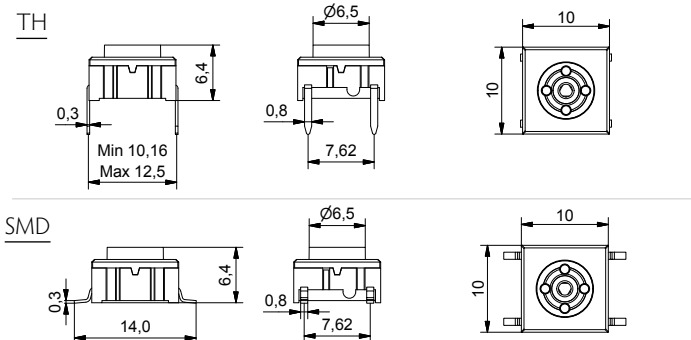
Through-hole



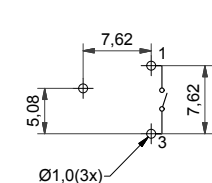
Surface mount



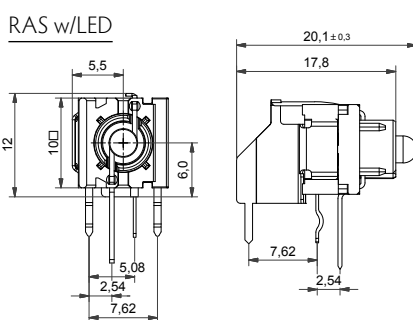
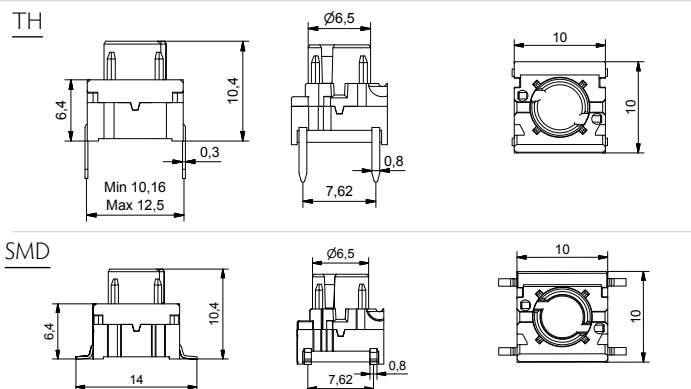
3E (TH, SMD & RAS)



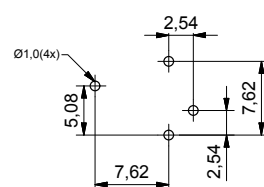
Through-hole RAS



3F (TH, SMD & RAS w/LED)



Through-hole illuminated RAS



HOW TO ORDER

Switch	Mounting	Temperature range	LED (onyl for 3F)	Right angle support
<input type="checkbox"/>	<input type="checkbox"/>	H 9	<input type="checkbox"/>	<input type="checkbox"/>
3C	T through-hole	H9 high temp.	00 blue 65 white 8020 red/ green	RAS optional
3E	S surface mount		20 green 80 red	3FTH9RAS with LED can be used with the 3 series keycaps: 1D, 1E, 1F, 1K, 1N, 1Q, 1R, 1S, 1T, 1U, 1V, 1WA, 1WD, 1WP, 1X. Ask further information on caps from MEC.
3F			40 yellow 2040 green/ yellow 8040 red/ yellow	

RoHS Compatible

		HIGH TEMPERATURE VERSIONS	
		SILVER	GOLD
ELECTRICAL SPECIFICATIONS			
Contact resistance	<30m Ω - typ. 10m Ω		
Insulation resistance	>10M Ω		
Recommended load	0.5-50mA 24VDC	0.5μ-50mA 24VDC	
Contact bounce	<2mS - typically 0.5mS		
MECHANICAL SPECIFICATIONS			
Standard actuation force (switch)	3.5N typ		
Max. Actuation force without cap	100N for 10 sec		
Key travel (switch)	1 mm		
Life time (switch)	>10,000,000		
Temperature Range			
Working temperature	Min -40°C Max +160°C		
Storage temperature	Min -40°C Max +160°C		
Soldering IEC 68-2-20	Infrared, vapour phase, wave - max 240°C for max 40 sec or max 260°C for max 30 sec. Soldering iron - max 350°C for max 3 sec. Flux tight.		
ENVIRONMENTAL ENDURANCE IEC 68-2-3			
Temperature	+40°C		
Humidity	93% RH		
Duration	56 Days		
TEMPERATURE CYCLING IEC 68-2-14			
Temperature limit	Min -55°C - Max +85°C		
Number of cycles	200		
Exposure time at each temperature	10 min		
Recovery time before measurements	16 hrs		
Sealing IEC 529	IP-67		
Cleaning	Standard methods - see usage guidelines		
MATERIAL SPECIFICATIONS - SWITCHES			
Housing	PPS UL94V0		
Actuator	PPS UL94V0		
Sealing + spring	Silicone rubber		
Contact spring	Stainless steel	Stainless steel	
	+ 3μAg	+ 1μAu	
Fixed contacts	SnCu + 2μNI + 3μAg	SnCu + 2μNI + 1μAu	
Terminals	SnCu + 2μNI + 3μSn100		

Caps – Material Specifications

MATERIAL	PARTS	TEMP. LIMIT	UL RATING
Polyamide	Actuators for varimec™	Max 160°C	UL94V2

For 3F switches

3FXXX (for 1E-1F-1N-1Q-1R-1S-1X)

3FXXX (for 1K-1T-1U-1V-1W-1WD)

Colour		B	G	Y	W	R	G/Y	R/G	R/Y	G	Y	R
Colour Codes		00	20	40	65	80	2040	8020	8040	24	46	87
Absolute Maximum Ratings	(Ta=25°C)											
Power	mW	105	70	60	120	60	120	100	120	60	60	120
Current forward	mA	30	20	20	25	20	25	30	25	25	25	50
Forward peak current	mA	150	60**	60**	100	60**	150	120	150	60	60	200
Voltage reverse	V	5	3	3	5	3	5	5	5	5	5	5
Operating temperature	°C	-40/+85			-40/+85		-25/+85	-40/+85	-55/+100	-40/+85	-40/+85	
Storage temperature	°C	-40/+85			-40/+100		-30/+100	-40/+85	-55/+100	-40/+85	-40/+85	-40/+100
Soldering temperature	°C	260 for max 5 sec					260 for max 2 sec			300 for max 3 sec	260 for max 5 sec	
Electrical-Optical Characteristics	(Ta=25°C)											
Voltage forward	Typ. V	3.8	2.1	2.1	3.8	2.0	2.1	2.0	2.1	2.0*	2.0	2.0***
	Max. V	4.5	3.0	3.0	4.3	3.0	2.8	2.6	2.8	2.4*	2.4	2.4***
Current reverse (V _R =5V)	µA	10	10	10	50	10	2	2	2	10	10	10
Wave length	nm	466	563	585	NA	650	565/590	630/565	625/590	570	589	624/632
Spread	Δnm	60	40	40	NA	40	35	35	35	10	NA	20
Spread angle	degree	60	45	45	25	45	60	200	60	100	40	40
Luminous Intensity	Min. mcd	18	9.0	5.6	630	5.6	8	2.2	8	70****	630	400****
	Typ. mcd	50	25	16	1000	16	25	4.8	25	20****	1250	800****
Orientation	The longer pin is the anode, the shorter is the cathode. For bicolour LEDs the anode for the first colour (ex. 2080) is the longer pin.											

Pulse width 1ms Duty cycle 1:5, */F =50mA, **** Luminous Flux mlm

B=Blue, G=Green, Y=Yellow, R=Red, W=White

Specifications are subject to change without notice.