

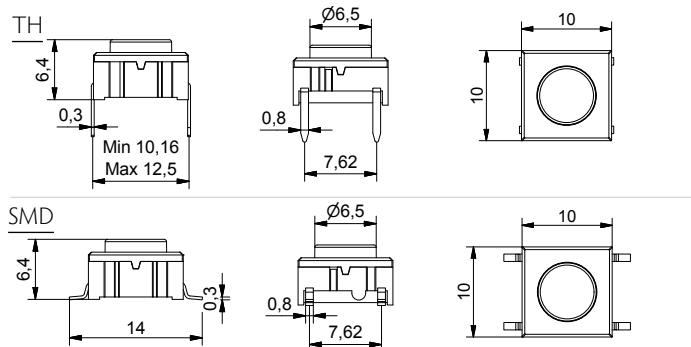


- Through-hole (TH) or surface mount (SMD)
- 50mA/24VDC
- Single pole/momentary
- 10,000,000 operations lifetime
- Temperature range:
 - High temp: -40/+160C
- IP 67 sealing
- Actuation force: 3.5N
- Most caps in the catalogue have a version for mounting on 3F switch as well. Contact MEC for further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

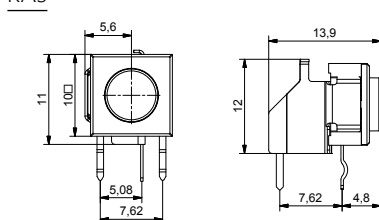
All dimensions in mm

Tolerances +/-0.2mm

3C (TH, SMD & RAS)

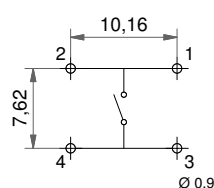


RAS

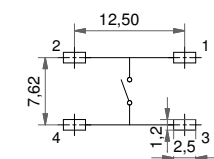


PCB LAYOUT

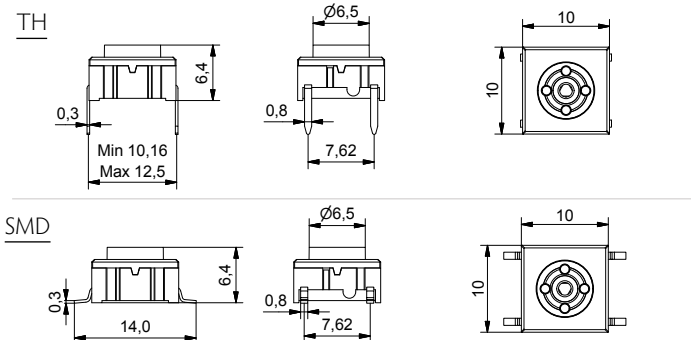
Through-hole



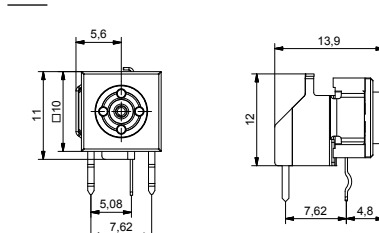
Surface mount



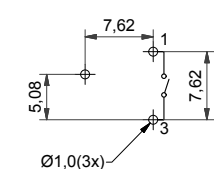
3E (TH, SMD & RAS)



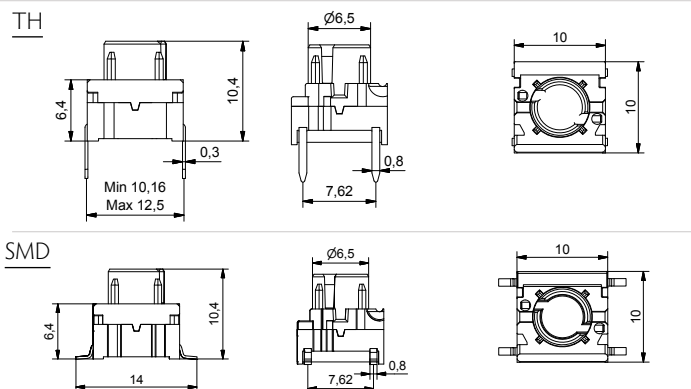
RAS



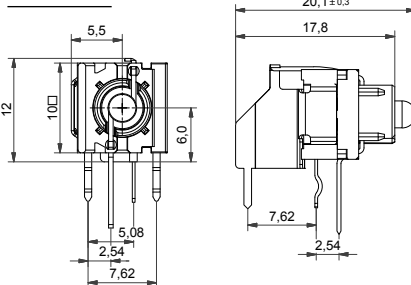
Through-hole RAS



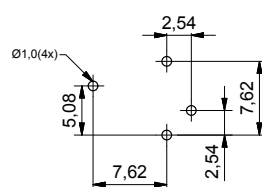
3F (TH, SMD & RAS w/LED)



RAS w/LED



Through-hole illuminated RAS



HOW TO ORDER

Switch	Mounting	Temperature range	LED (only for 3F)	Right angle support
3C	T through-hole	H9 high temp.	00 blue	RAS optional
3E	S surface mount		20 green	3FTH9RAS with LED can be used with the 3 series
3F			40 yellow	keycaps: 1D, 1E, 1F, 1K, 1N, 1Q, 1R, 1S, 1T, 1U, 1V, 1WA, 1WD, 1WP, 1X. Ask further information on caps from MEC.
			60 white	
			80 red	
			2040 green/yellow	
			8020 red/green	
			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.	
ENVIRONMETAL 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	UL94V0

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 (VR=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.