

Technical Data

PATENTED

Through-hole / SMD / Right angle
 single pole / momentary
 50mA/24VDC
 10,000,000 operations life time (Max.)
 Meet IP67
 Contact resistance : 30mΩ
 Insulation resistance : > 10MΩ
 Basic temp.: -40/+115 °C
 High temp.: -40/+160 °C
 Max actuation Force : 100N for 10 Sec.
 Push force : 400N +/-100N
 Available With LED



<p style="text-align: center;">4FH/T</p> <p style="text-align: center;">Dimensions (through-hole)</p>	<p style="text-align: center;">4FS</p> <p style="text-align: center;">Dimensions (SMD)</p>	<p>Material colors :</p> <ol style="list-style-type: none"> 1. Through-hole : base & Actuator with Blue color 2. SMD : base & actuator with Black color 3. Cover : with White color
<p style="text-align: center;">6FH/T</p> <p style="text-align: center;">Dimensions (through-hole)</p>	<p style="text-align: center;">6FS</p> <p style="text-align: center;">Dimensions (SMD)</p>	<p style="text-align: center;">6FY</p> <p style="text-align: center;">Dimensions (right-angle)</p> <p style="text-align: center;">PCB layout / Circuit Diagram</p>

How to order

4 F		3X		1 F		1 TRANS
TM series	Mounting		LED colour codes	CAP		Colour codes
4F	H through-hole		01 blue			00 Blue
6F	T through-hole reflow		21 green			02 Green *
	S surface mount		42 yellow			03 Grey
	Y right angle		61 white			04 Yellow *
			82 red			06 White
			2142 green/yellow			08 Red
			8221 red/green			09 Black
			8242 red/yellow			

* CAP MOQ: 2000pcs per order
 CAP color cross with MEC color by RAL no.

Electrical Specifications

Contact resistance	< 30m Ω- typ. 10m Ω
Insulation resistance	> 10M Ω
Recommended load	0.5μ-50mA 24VDC
Contact bounce	<2mS- typically 0.5mS

Mechanical Specifications

Standard actuation force (switch)	3.0N typ.
Max. actuation force without cap	100N for 10sec.
Key travel (switch)	1 mm
Life time (switch)	10.000.000 cycles(Max.)

Temperature Range

Basic temperature	-40/+115 °C
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	21 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	meet IP-67

Vibration Test : meet IEC 68-2-6

Soldering

(1)Hand Soldering

Soldering iron 30W or under at 350°C for 3 sec max or at 270°C for 5 sec max.

(2)Reflow Soldering

260°C±5°C within 30 sec for reflow. In-line or Batch system.

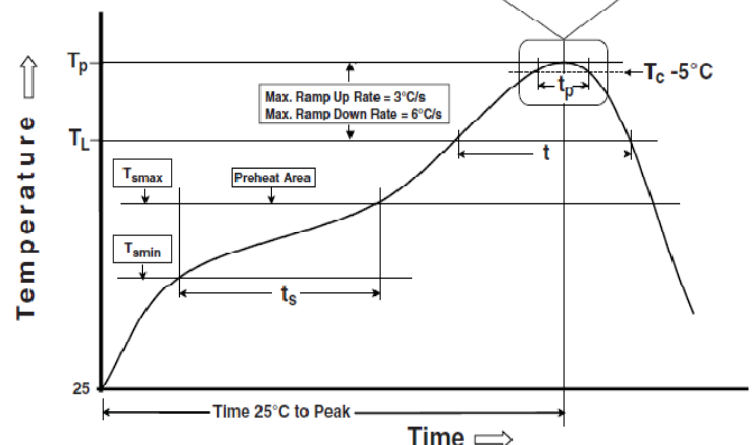
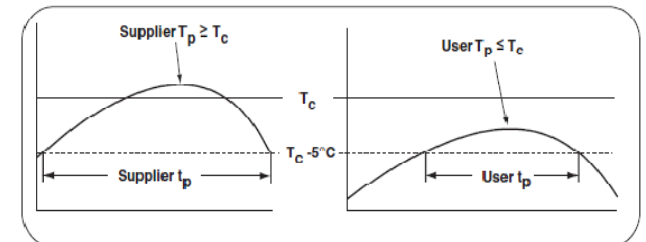
(3)Wave soldering

For lead free wave solder simulation of typical components. the solder bath temperature Shall be maintained to 275°C. The hold time in the solder shall be 10 +2/-0 seconds.

※Any flux enters the switch may influence contact function .

* All CAP un-allow pass through Soldering procss.

Reflow Soldering Standard Conditions



Classification Reflow Profiles

Profile Feature	Pb-Free Assembly
Preheat & Soak	
Temperature Min (T_{smin})	150 °C
Temperature (T_{smax})	200 °C
Time(t_s) from (T_{smin} to T_{smax})	60-120 seconds
Average ramp-up rate (T_{smax} to T_p)	3 °C/second max.
Liquidous temperature (T_L)	217°C
Time at liquidous (t_L)	60-150 seconds
Peak package body temperature(T_p)*	For user T_p must not exceed the Classification temp: 260°C For suppliers T_p must equal or exceed Classification temp: 260°C
Time (t_p) within 5 °C of the specified classification temperature (T_c)	30 seconds
Average ramp-down rate (T_p to T_{smax})	6 °C/second max.
Time 25 °C to Peak Temperature	8 minutes max.

*Tolerance for peak profile temperature(T_p) is defined as a supplier minimum

Note 1: All temperatures refer to topside of the package, measured on the package body surface.

Note 2: Time within 5 °C of actual peak temperature (t_p) specified for the reflow profiles is a "supplier" minimum and "user" maximum.

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