



Surge arrester

2-electrode arrester

Series/Type: EM90XSMD
Ordering code: B88069X5241T702
Version/Date: Issue 05 / 2014-10-01

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Features

- Small size
- Fast response time
- High current handling capability
- Stable performance over service life
- Low capacitance and insertion loss
- High insulation resistance
- Excellent SMD handling
- RoHS-compatible

Applications

- Power supplies
- Antenna protection
- Air condition
- Modem
- Consumer electronics
- Dataline protection systems

Electrical specifications

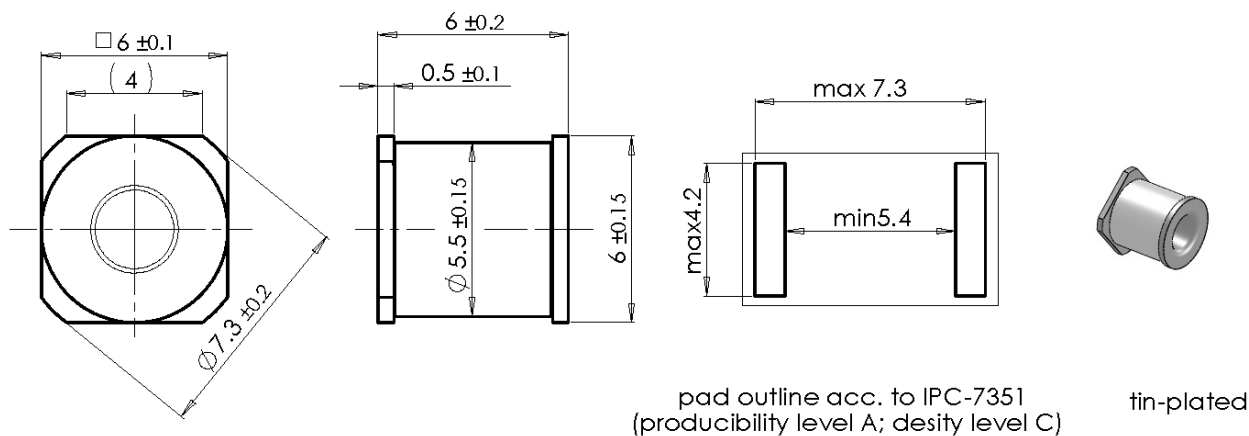
DC spark-over voltage ^{1) 2)}	90	V
Tolerance	±20	%
Min.	72	V
Max.	108	V
Impulse spark-over voltage		
at 100 V/μs - for 99% of measured values	< 400	V
- typical values of distribution	< 330	V
at 1 kV/μs - for 99% of measured values	< 600	V
- typical values of distribution	< 560	V
Service life		
10 operations 50 Hz, 1 s	2.5	A
1 operation 50 Hz; 0.18 s (9 cycles)	5	A
10 operations [5x (+) & 5x (-)] 8/20 μs	2.5	kA
1 operation 8/20 μs	5	kA
Insulation resistance at 50 V _{DC}	> 1	GΩ
Capacitance at 1 MHz	< 1.7	pF
Arc voltage at 1 A	~ 10	V
Glow to arc transition current	< 0.6	A
Glow voltage	~ 60	V
Weight	~ 0.5	g
Operation and storage temperature	-40 ... +125	°C
Climatic category (IEC 60068-1)	40/ 90/ 21	
Marking, blue positive	EPCOS EM 90 YY O EM - Series 90 - Nominal voltage YY - Year of production O - Non radioactive	

¹⁾ At delivery AQL 0.65 level II, DIN ISO 2859

²⁾ In ionized mode

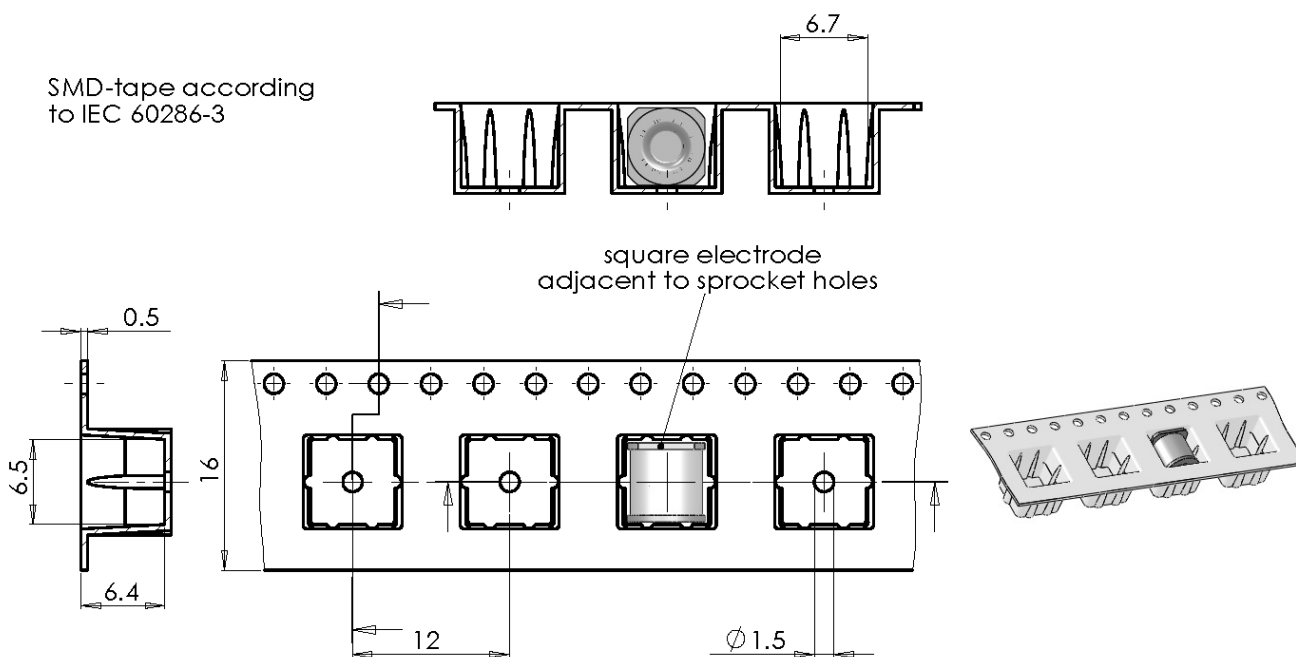
Terms in accordance with ITU-T Rec. K.12, IEC 61663-2 and IEC 61643-311

Dimensional drawing in mm



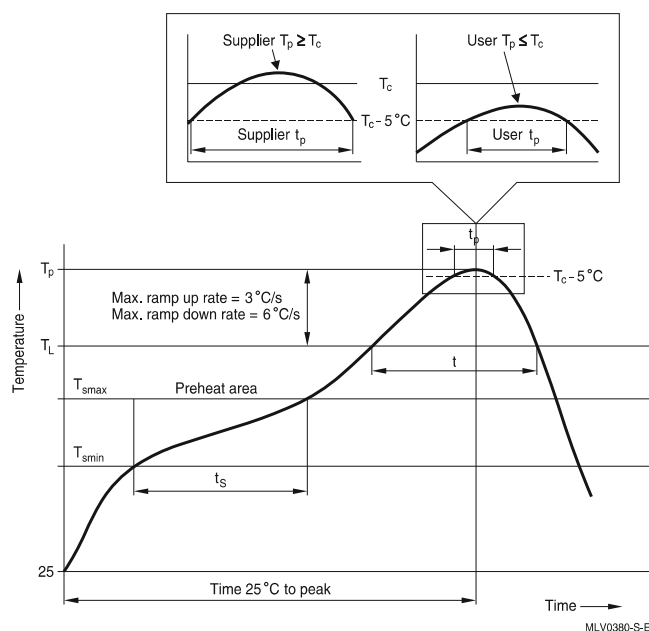
Ordering code and packing advice

B88069X5241T702 = 700 pcs. taped and reeled



Soldering parameter

Reflow soldering



Reflow profile features		Sn- Pb eutectic assembly	Pb-free assembly
Preheat and soak - Temperature min - Temperature max - Time	T_{smin} T_{smax} t_{smin} to t_{smax}	100 °C 150 °C 60 ... 120 s	150 °C 200 °C 60 ... 180 s
Average ramp-up rate	T_{smax} to T_p	max. 3 °C/ s	max. 3 °C/ s
Liquidous temperature Time at liquidous	T_L t_L	183 °C 60 ... 150 s	217 °C 60 ... 150 s
Peak package body temperature *, Classification temperature **	T_p , T_c	220 ... 235 °C **	245 ... 260 °C **
Time (t_p) ** within 5 °C of the specified classification temperature (T_c)		20 s ***	30 s ***
Average ramp-down rate	T_p to T_{smax}	max. 6 °C/ s	max. 6 °C/ s
Time 25 °C to peak temperature		max. 6 min	max. 8 min

* = Tolerance for peak profile temperature (T_p) is defined as a supplier minimum and a user maximum.
 ** = For details please refer to JEDEC J-STD-020D.
 *** = Tolerance for time at peak profile temperature (t_p) is defined as a supplier minimum and a user maximum.

Cautions and warnings

- Do not operate surge arresters in power supply networks, whose maximum operating voltage exceeds the minimum spark-over voltage of the surge arresters.
- Surge arresters may become hot in the event of longer periods of current stress (burn risk). In the event of overload the connectors may fail or the component may be destroyed.
- Surge arresters must be handled with care and must not be dropped.
- Do not continue to use damaged surge arresters.
- SMD surge arresters should be soldered within 24 month after shipment.

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