



Surge arrester

2-electrode arrester

Series/Type:	ES1200XSMD
Ordering code:	B88069X5641T902
Date:	2015-07-10
Version:	03

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Features

- Small size
- Very fast response time
- High current handling capability
- Stable performance over service life
- Low capacitance
- High insulation resistance
- Excellent SMD handling
- RoHS-compatible

Applications

- Modem
- Consumer electronics
- Tuner

Electrical specifications

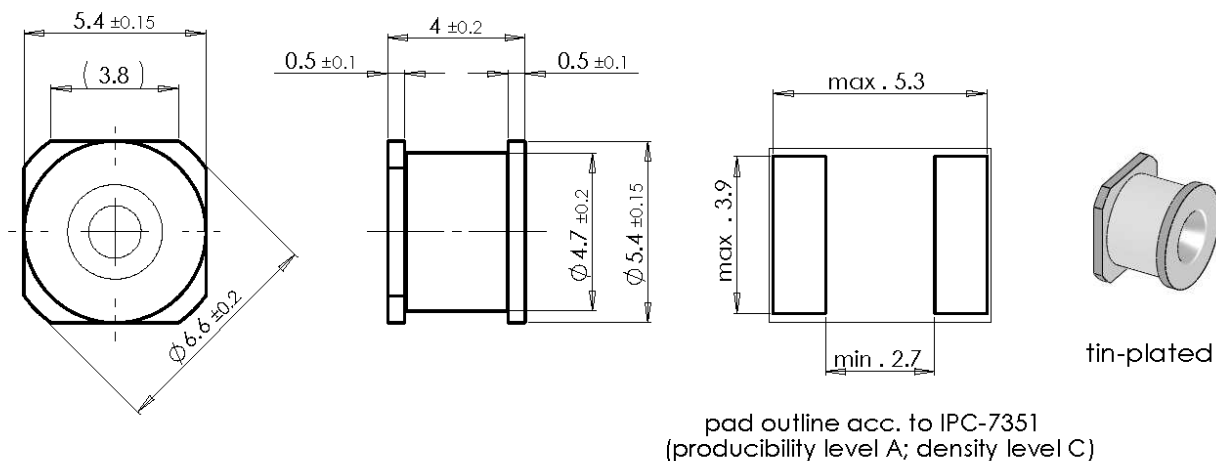
DC spark-over voltage ^{1) 2)}	1200	V
Tolerance	±15	%
Min.	1020	V
Max.	1380	V
Impulse spark-over voltage		
at 1 kV/μs	< 1500	V
- for 99% of measured values	< 1400	V
- typical values of distribution		
Service life		
10 operations [5x (+) & 5x (-)]	8/20 μs	1
100 operations [50x (+) & 50x (-)]	10/1000 μs	10
20 operations	10/1000 μs	100
Insulation resistance at 100 V _{DC}	> 1	GΩ
Capacitance at 1 MHz	< 1	pF
Arc voltage at 1 A	~ 11	V
Glow to arc transition current	< 0.5	A
Glow voltage at 0.1 A	~ 130	V
Weight	~ 0.7	g
Operation and storage temperature	-40 ... +90	°C
Climatic category (IEC 60068-1)	40/090/21	
Marking, red positive	EPCOS ES 1200 YY O ES - Series 1200 - Nominal voltage YY - Year of production O - Non radioactive	
Certifications	UL 1449 (E319264)	

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.

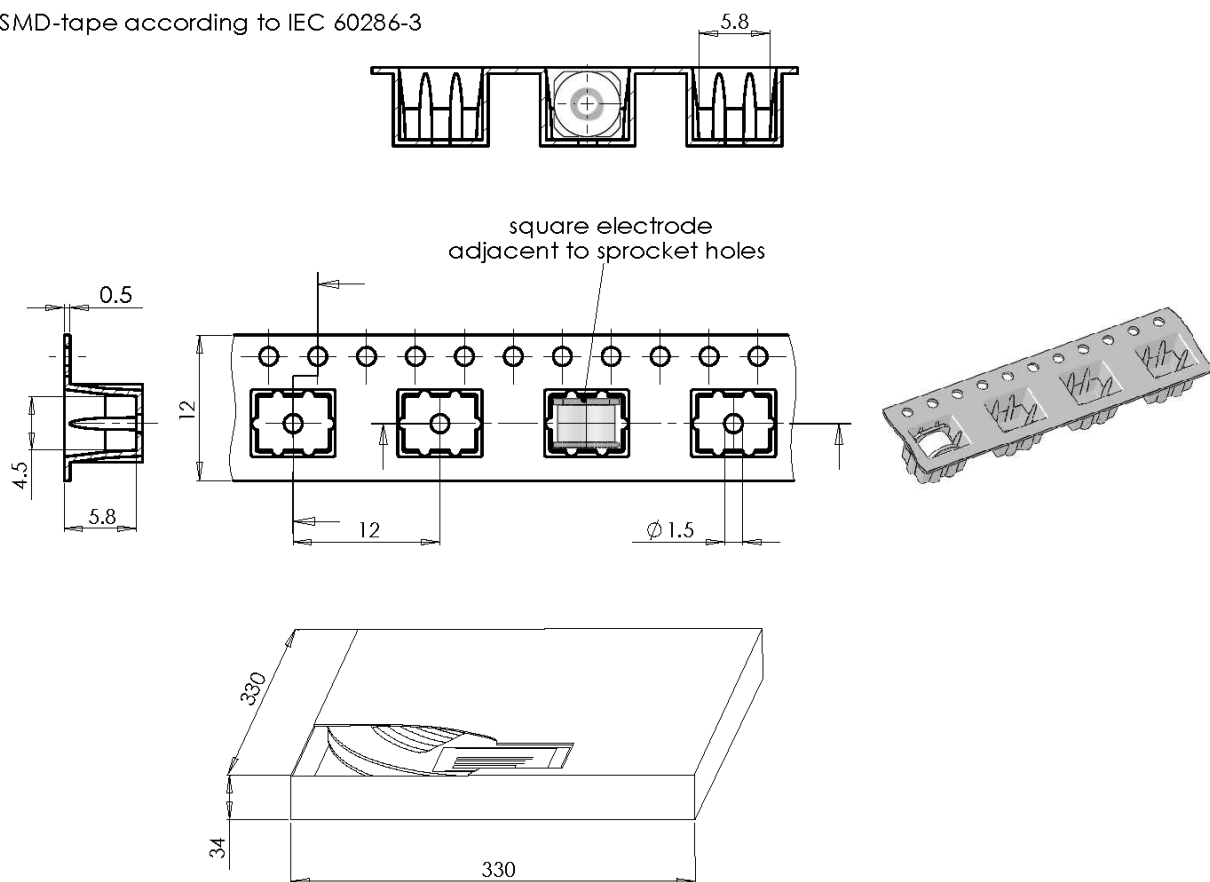
Dimensional drawing in mm



Ordering code and packing advice

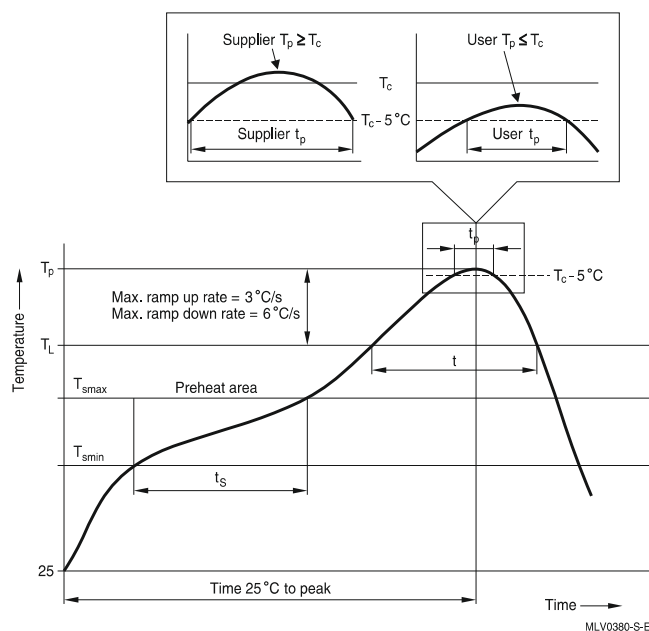
B88069X5641T902 = SMD-tape with 900 pcs.

SMD-tape according to IEC 60286-3



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.**
- Electromagnetic fields and ionizing radiation may affect the electrical characteristics of the arrester.** The impact of such effects (inductive and capacitive field distortion from adjacent components) must be avoided by appropriate circuit design measures.
- 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.
- If the contacts of the surge arresters are defective, current load can cause sparks and loud noises.
- Surge arresters must be handled with care and must not be dropped.
- Do not continue to use damaged surge arresters.
- The shown SMD pad dimensions represent a safe way to mount the arrester and are a recommendation of the manufacturer. During the reflow process it must be assured that no solder material reduces the insulation distance between the pads below the arrester.
- SMD surge arresters should be soldered within 24 month after shipment.

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