Surge arrester

2-electrode arrester

Series/Type: **S30-A150X**
Ordering code: **B88069X6071T203**

Version/Date: Issue 07 / 2014-07-31

EPCOS AG is a TDK Group Company.

Product description

The S30-series has been especially designed to meet data transmission protection requirements. The optimized design features a high level of protection against fast rising transients usually caused by lightning disturbances. For use in high frequency data lines, the series offers ultra low capacitances and shows only marginally signal losses up to high frequencies. The devices are extremely reliable and are able to withstand high surge currents without destruction.

Features

- Very small size (EIA 1812)
- Short response time
- High current handling capability
- Stable performance over service life
- Ultra low capacitance and insertion loss
- High insulation resistance
- Excellent SMD handling
- RoHS-compatible

Applications

Telecommunication:

- Ethernet, PoE, xDSL
- Cable modem, splitters, line cards
- Wireless antenna protection

Others:

- CCTV
- Switching power supply

Product characteristics

Physical dimensions (length × width × height)	0.18 × 0.12 × 0.10	in
	4.5 × 3.2 × 2.7	mm
	EIA 1812 / 4532 metric	
Weight	~ 0.2	g
Operating temperature	–40 ... +125	°C
Recommended storage [1)] - temperature - humidity - period	 +5 … +35 45 … 80 ≤ 2	 °C % years
Climatic category (IEC 60068-1)	40/ 125/ 21	
Moisture sensitivity level [2)]	1	
Marking, black positive	DY D - Nominal voltage (D ≙ 150 V) Y - Year of production (last digit)	
Certifications	UL 497B (E163070)	

Notes:
1) Specified in terms of corrosion against Sn-plating
2) Tests according to JEDEC J-STD-020

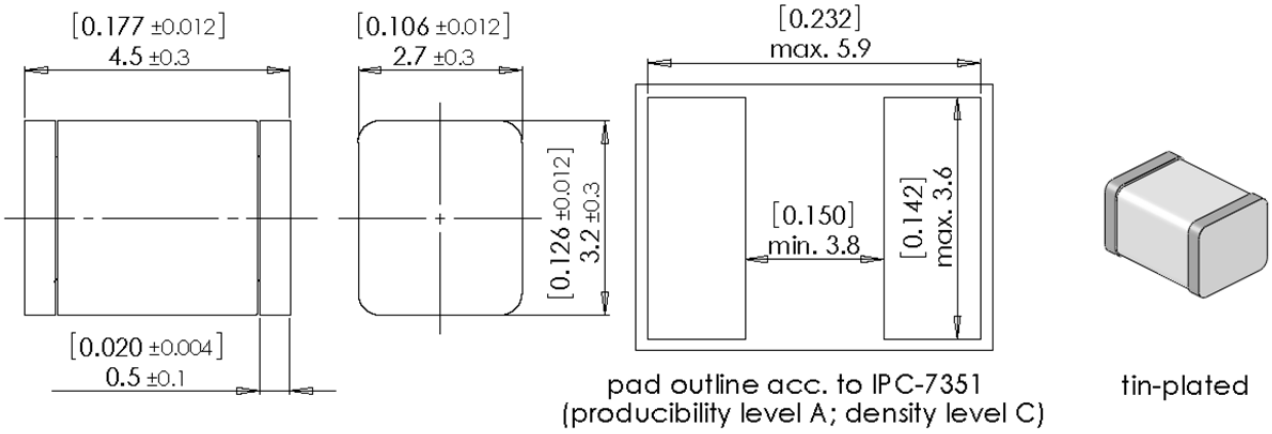
Electrical specifications and stress test methods

Nominal DC spark-over voltage [3) 4)]			150	V
Tolerance			± 30	%
Min.			105	V
Max.			195	V
Impulse spark-over voltage				
at 100 V/µs	- for 99% of measured values		< 500	V
	- typical values of distribution		< 400	V
at 1 kV/µs	- for 99% of measured values		< 600	V
	- typical values of distribution		< 500	V
Service life [5) 6)]				
10 operations		50 Hz, 1 s	2	A
100 operations		8/20 µs	100	A
10 operations	[5× (+) & 5× (–)]	8/20 µs	2	kA
100 operations	[50× (+) & 50× (–)]	10/1000 µs	10	A
Insulation resistance at 50 V_{DC}			> 1	GΩ
Capacitance at 1 MHz			< 0.8	pF
Arc voltage at 1 A			~ 10	V
Glow to arc transition current			< 0.4	A
Glow voltage			~ 55	V

[3)] At delivery AQL 0.65 level II, DIN ISO 2859
[4)] In ionized mode
[5)] Tests according to ITU-T Rec. K. 12 and UL 497B
[6)] Electrical specifications may vary after stress tests

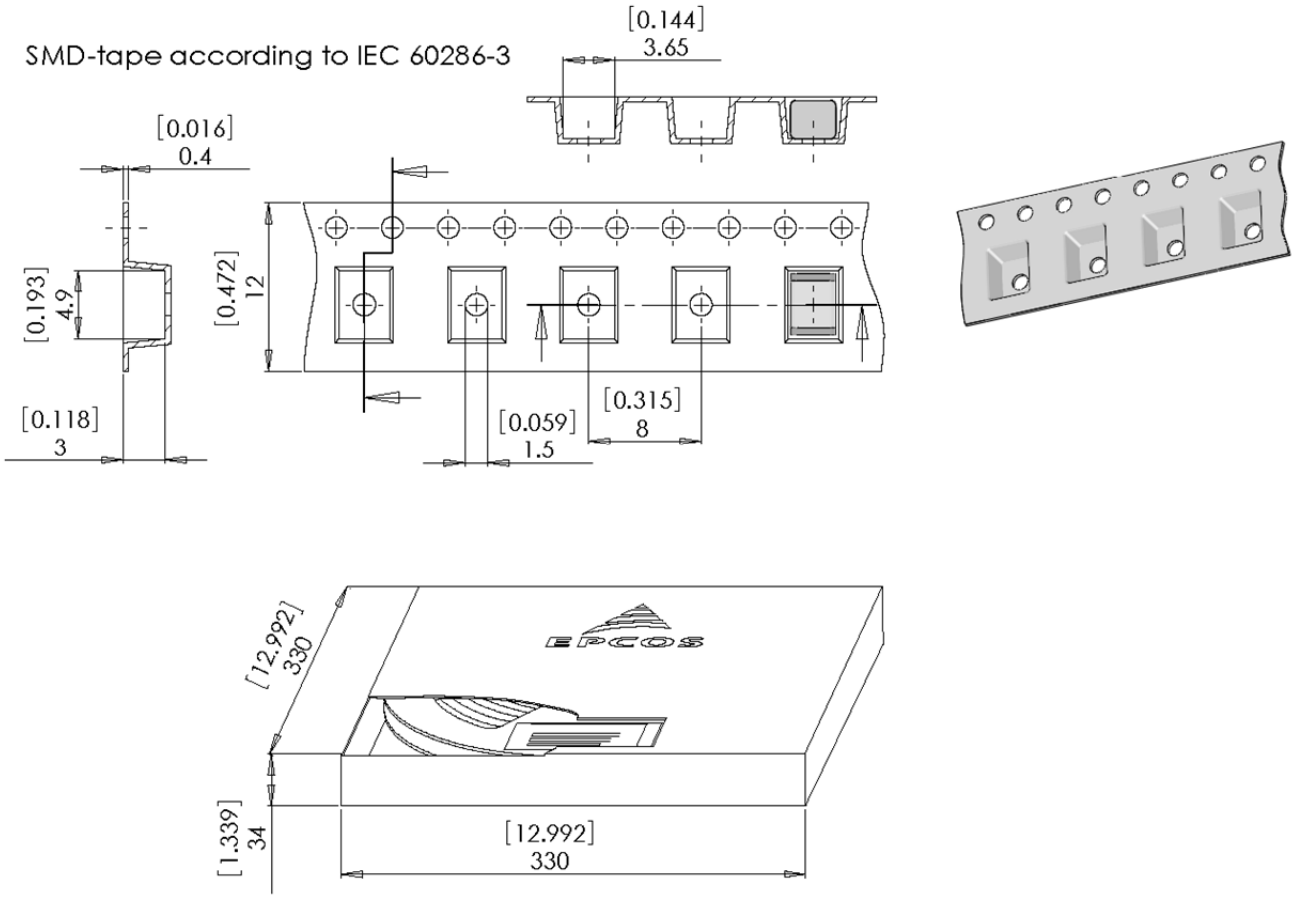
Terms and current waveforms in accordance with ITU-T Rec. K. 12; IEC 61643-21; IEC 61643-311 and IEC 61663-2.

Dimensions in mm and inch [...]



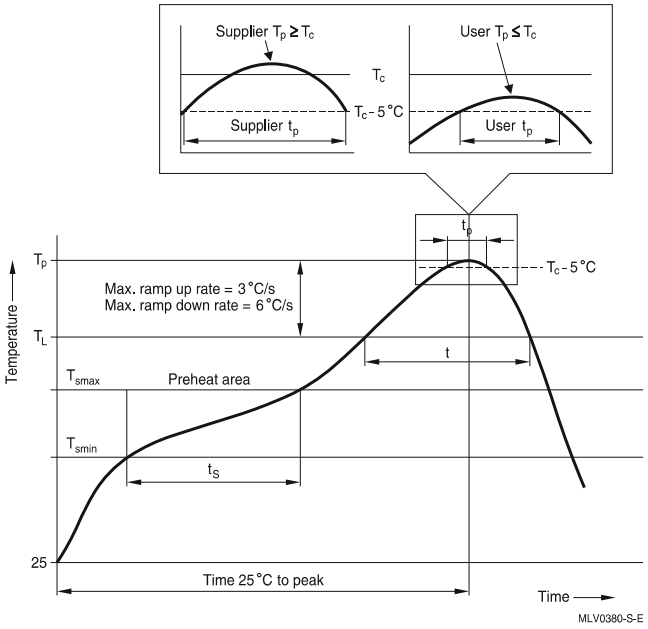
Ordering code and packing advice

*B88069X6071**T203** = 2000 pcs. on SMD-tape and reel*



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

- Surge arresters must not be operated directly in power supply networks.
- Surge arresters may become hot in case of longer periods of current stress (danger of burning).
- Surge arresters may be used only within their specified values. In case of overload, the lead contacts may fail or the component may be destroyed
- Surge arresters must be handled with care and must not be dropped.
- Damaged surge arresters must not be re-used.
- SMD surge arresters should be soldered within 24 month after shipment.

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