

ANTREX Electronics

Electronic Components Sourcing Information

Product Reference Information

Part Number: B88069X3753T702
Manufacturer: TDK
Package: Tape & Reel (TR)
Availability: Please confirm with sales

Product Page:

<https://antrexco.com/product/details/tdk/b88069x3753t702.html>

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Secure sourcing support for OEM / EMS projects

Note:

This PDF includes an ANTREX product reference cover page.

The original manufacturer datasheet follows from the next page.



Surge arrester

3-electrode arrester

Series/Type:	T30-A90XFSMD
Ordering code:	B88069X3753T702
Date:	2022-02-08
Version:	06

Features

- Very small size
- Very fast response time
- High current rating
- Stable performance over life
- Very low capacitance
- High insulation resistance
- Excellent SMD handling
- Reliable failsafe device
- RoHS-compatible

Applications

- Line protection
- Station protection
- Base stations

Electrical specifications

DC spark-over voltage ^{1) 2) 3)}		90	V
Tolerance		±20	%
Min.		72	V
Max.		108	V
Impulse spark-over voltage ³⁾			
at 100 V/μs	- for 99% of measured values	< 450	V
	- typical values of distribution	< 420	V
at 1 kV/μs	- for 99% of measured values	< 500	V
	- typical values of distribution	< 480	V
Service life			
1 operation	50 Hz; 1 min	1	A
1 operation	50 Hz; 5s	10	A
1 operation	50 Hz; 2s	30	A
1 operation	50 Hz; 0.18 s (9 cycles) ⁴⁾	30	A
10 operations [5× (+) & 5× (-)]	8/20 μs ⁴⁾	10	Ka
1 operation	8/20 μs ⁴⁾	10	Ka
1 operation	10/350 μs ⁴⁾	2	Ka
Insulation resistance at 50 V _{DC} ³⁾		> 10	GΩ
Capacitance at 1 MHz ³⁾		< 1.5	Pf
Transverse delay time ⁵⁾		< 0.2	μs
Arc voltage at 1 A		~ 10	V
Glow to arc transition current		~ 1	A
Glow voltage at 0.1 A		~ 60	V
Weight		~ 1.4	g
Operation and storage temperature		-40 ... +125	°C

Continued on next page

Surge arrester

B88069X3753T702

3-electrode arrester

T30-A90XFSMD

Climatic category (IEC 60068-1)	40/125/21
Marking, blue negative	EPCOS 90 YY O 90 - Nominal voltage YY - Year of production O - Non radioactive
Certifications	UL 497B (E163070) 

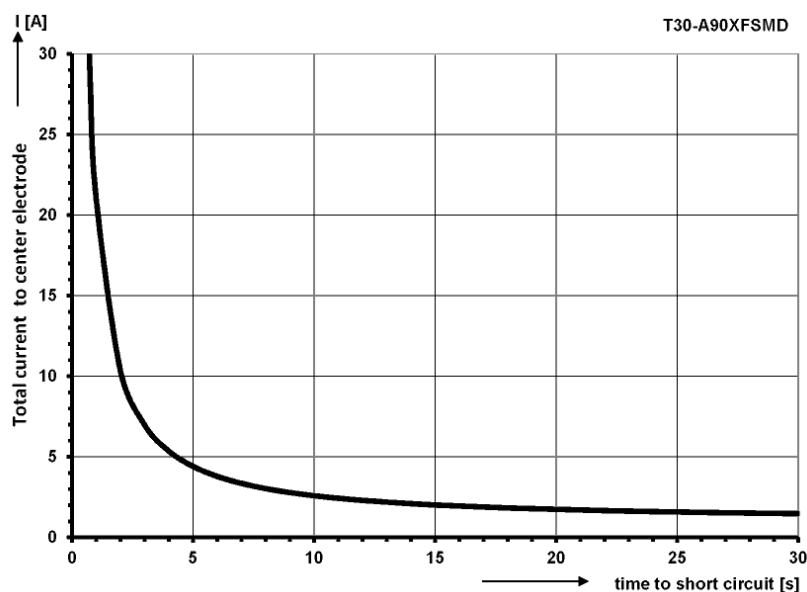
- 1) At delivery AQL 0.65 level II, DIN ISO 2859
 - 2) In ionized mode
 - 3) Tip or ring electrode to center electrode
 - 4) Total current through center electrode, half value through tip respectively ring electrode.
 - 5) Test according to ITU-T Rec. K.12
- Terms in accordance with ITU-T Rec. K.12 and IEC 61643-311.

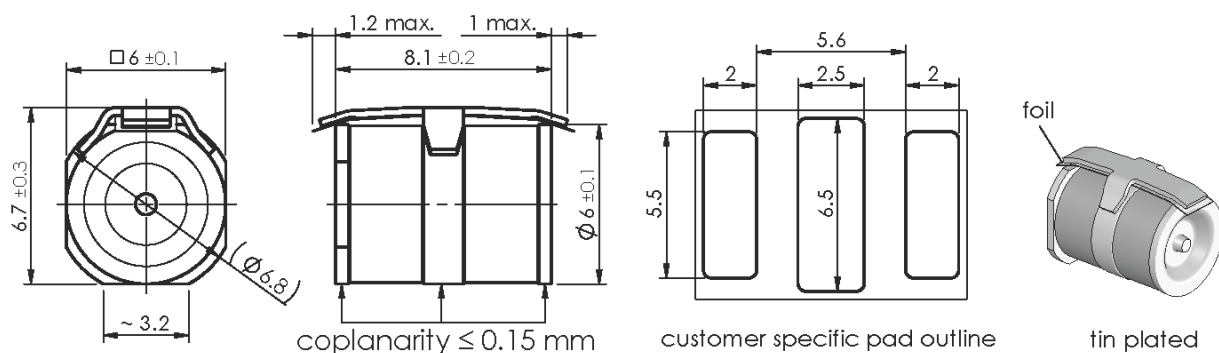
The arrester failsafe mechanism contains an insulating foil with a melting temperature of 260 °C.

Arrester failsafe works at temperatures > 260 °C. The arrester has to be fixed mechanically, if the arrester is contacted by soldering and if the solder temperature is less than 260 °C.

Failsafe characteristic diagram

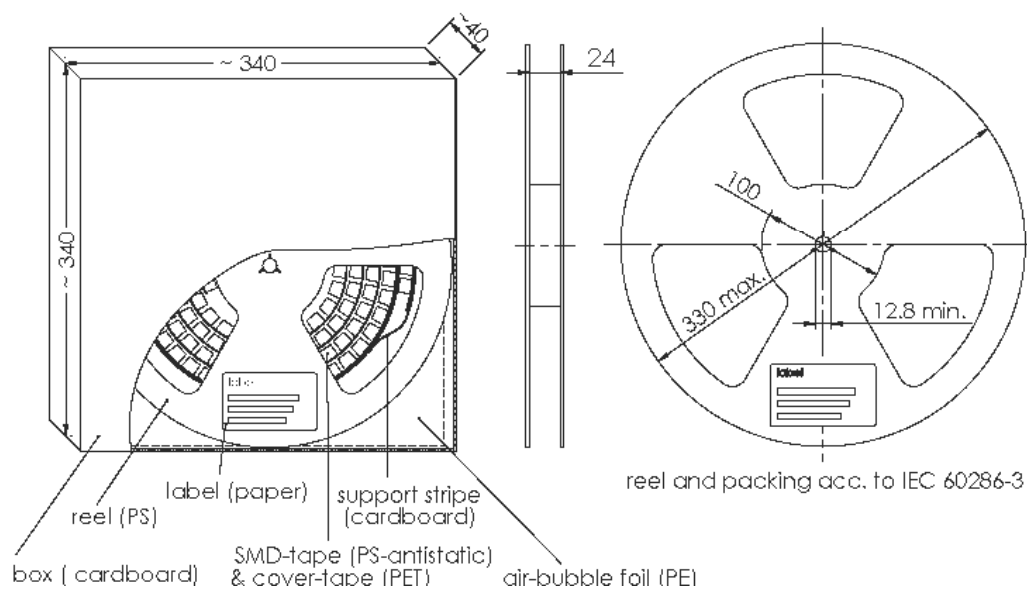
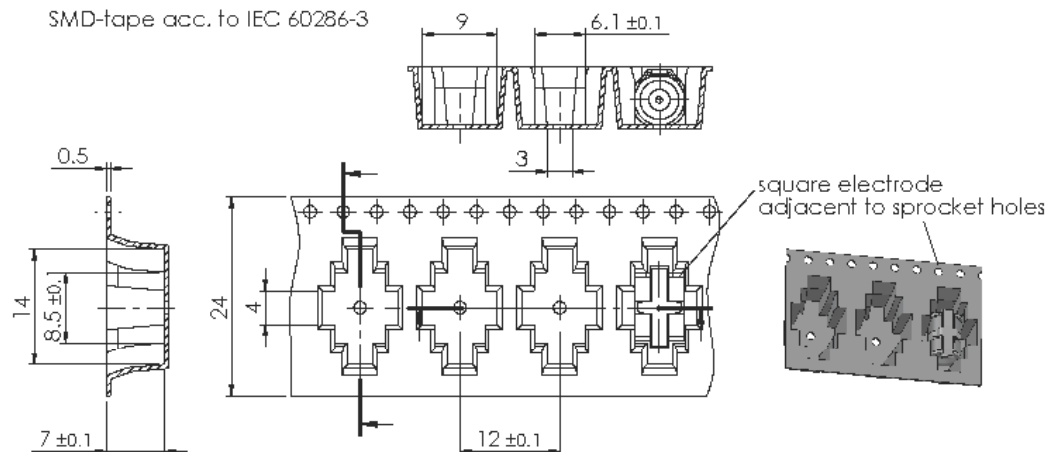
For arrester only, characteristic can differ in assembled module.



Dimensional drawing in mm

Ordering code and packing advice

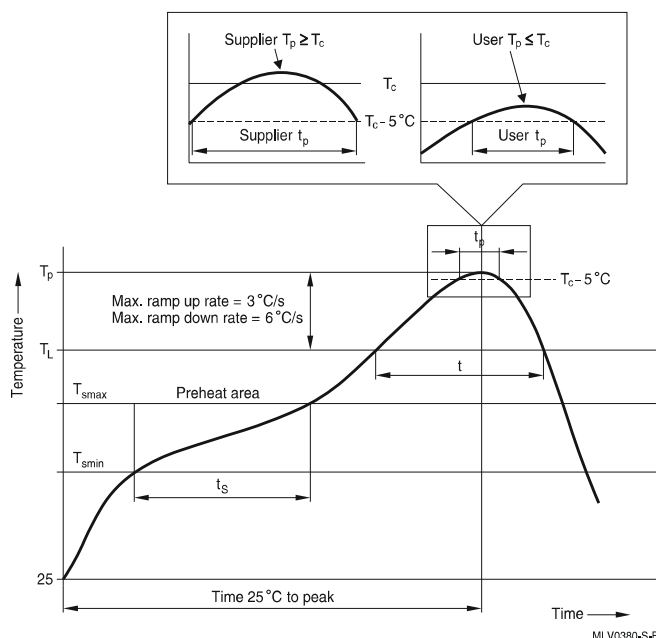
B88069X3753T702 = 700 pcs on SMD tape

SMD-tape acc. 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.

Surface mounted components (SMD) may exhibit a temporary increase in the DC spark-over voltage after the solder reflow process. The components will recover within 24 hours. There is no quality defect nor change in protection levels during the temporary change in DC spark-over voltage.

Cautions and warnings

- Depending on the sensor material the short-circuit spring does not trigger until 260 °C is reached. Thermal radiation to adjacent components must be taken into consideration in the circuit design. Depending on the mounting position, the surge arrester may have to be secured by additional mechanical means.
- Do not continue to use surge arresters whose short-circuit mechanisms have been activated.
- If the contacts of the surge arresters are defective, current load can cause sparks and loud noises.
- 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.
- 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.

Surge arrester**B88069X3753T702****3-electrode arrester****T30-A90XFSMD**

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Important notes

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