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## Surge arrester

### 3-electrode arrester

**Series/Type:** TD08-A90SMD

**Ordering code:** T. B. D.

**Date:** 2016-12-19

**Version:** 02

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## Surge arrester

T. B. D.

### 3-electrode arrester

TD08-A90SMD

#### Preliminary data

##### Features

- Flat design
- High current rating
- Stable performance over life
- High insulation resistance
- Excellent SMD handling
- RoHS-compatible

##### Applications

- Telecom
- Industrial communication
- Line protection
- Subscriber protection
- Alarm system

#### Electrical specifications

DC spark-over voltage <sup>1) 2) 3)</sup>	90	V
Tolerance	±20	%
Min.	72	V
Max.	108	V
Impulse spark-over voltage <sup>3)</sup>		
at 100 V/μs - for 99% of measured values	< 350	V
- typical values of distribution	< 300	V
at 1 kV/μs - for 99% of measured values	< 600	V
- typical values of distribution	< 500	V
Service life		
10 operations 50 Hz; 1 s <sup>4)</sup>	10	A
10 operations 8/20 μs <sup>4)</sup>	10	kA
1 operation 8/20 μs <sup>4)</sup>	15	kA
2 operations 10/350 μs <sup>4)</sup>	2.5	kA
300 operations 10/1000 μs <sup>4)</sup>	100	A
Insulation resistance at 50 V <sub>DC</sub> <sup>3)</sup>	> 1	GΩ
Capacitance at 1 MHz <sup>3)</sup>	< 2	pF
Arc voltage at 1 A	~ 10	V
Glow to arc transition current	< 0.5	A
Glow voltage at 0.1 A	~ 60	V
Weight	~ 1.0	g
Operation and storage temperature	-40 ... +125	°C
Climatic category (IEC 60068-1)	40/125/21	
Marking	without	

<sup>1)</sup> At delivery AQL 0.65 level II, DIN ISO 2859

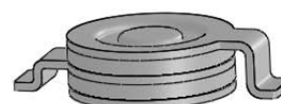
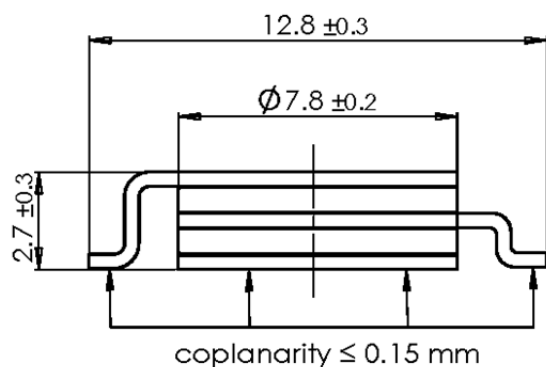
<sup>2)</sup> In ionized mode

<sup>3)</sup> Tip or ring electrode to center electrode

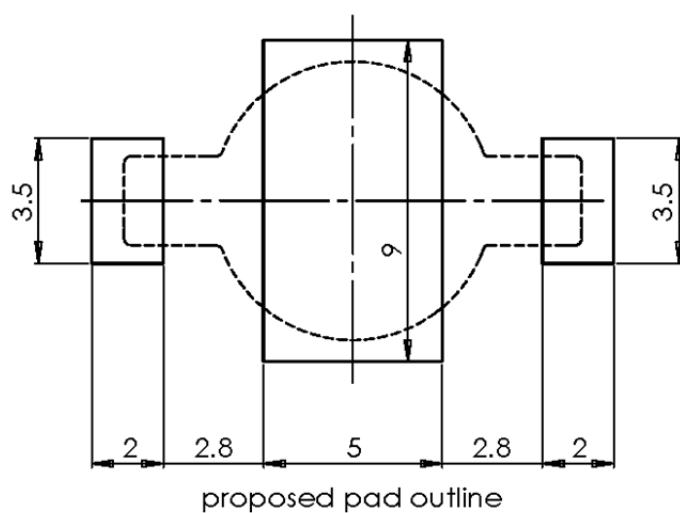
<sup>4)</sup> Total current through center electrode, half value through tip respectively ring electrode.

<sup>5)</sup> Test according to ITU-T Rec. K.12

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

**Preliminary data**
**Dimensional drawing in mm**


tin-plated

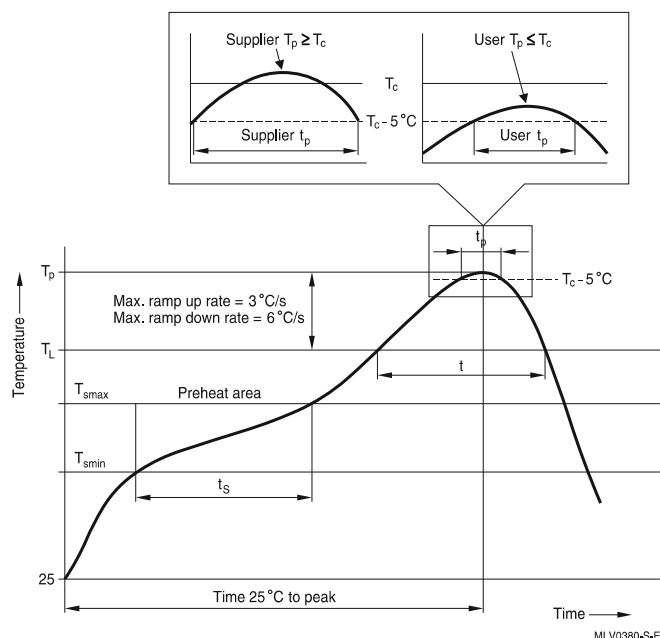

**Ordering code and packing advice**

TBD

## Preliminary data

## 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

- 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.

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## The Netherlands



Elektrostraat 17  
NL-7483 PG Haaksbergen

T: +31 (0)53 573 33 33  
F: +31 (0)53 573 33 30  
E: [nl@texim-europe.com](mailto:nl@texim-europe.com)

## Belgium



Zuiderlaan 14 bus 10  
B-1731 Zellik

T: +32 (0)2 462 01 00  
F: +32 (0)2 462 01 25  
E: [belgium@texim-europe.com](mailto:belgium@texim-europe.com)

## UK & Ireland



St. Mary's House, Church Lane  
Carlton Le Moorland  
Lincoln LN5 9HS

T: +44 (0)1522 789 555  
F: +44 (0)845 299 22 26  
E: [uk@texim-europe.com](mailto:uk@texim-europe.com)

## Germany North



Bahnhofstrasse 92  
D-25451 Quickborn

T: +49 (0)4106 627 07-0  
F: +49 (0)4106 627 07-20  
E: [germany@texim-europe.com](mailto:germany@texim-europe.com)

## Germany South



Martin-Kollar-Strasse 9  
D-81829 München

T: +49 (0)89 436 086-0  
F: +49 (0)89 436 086-19  
E: [germany@texim-europe.com](mailto:germany@texim-europe.com)

## Austria



Warwitzstrasse 9  
A-5020 Salzburg

T: +43 (0)662 216 026  
F: +43 (0)662 216 026-66  
E: [austria@texim-europe.com](mailto:austria@texim-europe.com)

## Nordic region



Sdr. Jagtvej 12  
DK-2970 Hørsholm

T: +45 88 20 26 30  
F: +45 88 20 26 39  
E: [nordic@texim-europe.com](mailto:nordic@texim-europe.com)

## General information



[info@texim-europe.com](mailto:info@texim-europe.com)  
[www.texim-europe.com](http://www.texim-europe.com)