ANTREX Electronics

Electronic Components Sourcing Information

Product Reference Information

Part Number:	B72225M0151M301
Manufacturer:	EPCOS - TDK Electronics
Package:	Box, 3 Lead
Availability:	Please confirm with sales

Product Page:

https://antrexco.com/product/details/epcos-tdk-electronics/b72225m0151m301.html

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Contact Information

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Website: https://antrexco.com

Quality & Trust

New & Original Components

Supplier verification and packaging condition review

CoC / RoHS / REACH documents available on request

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.

Metal Oxide Varistor

ThermoFuse Varistor

Series/Type:	**MT25*** **
Ordering code:	**B72225M ***M****
Date:	2020-01-21
Version:	b

Applications

- Surge protection device
- Inverters
- Street lighting
- Telecommunication
- Household application

Feature

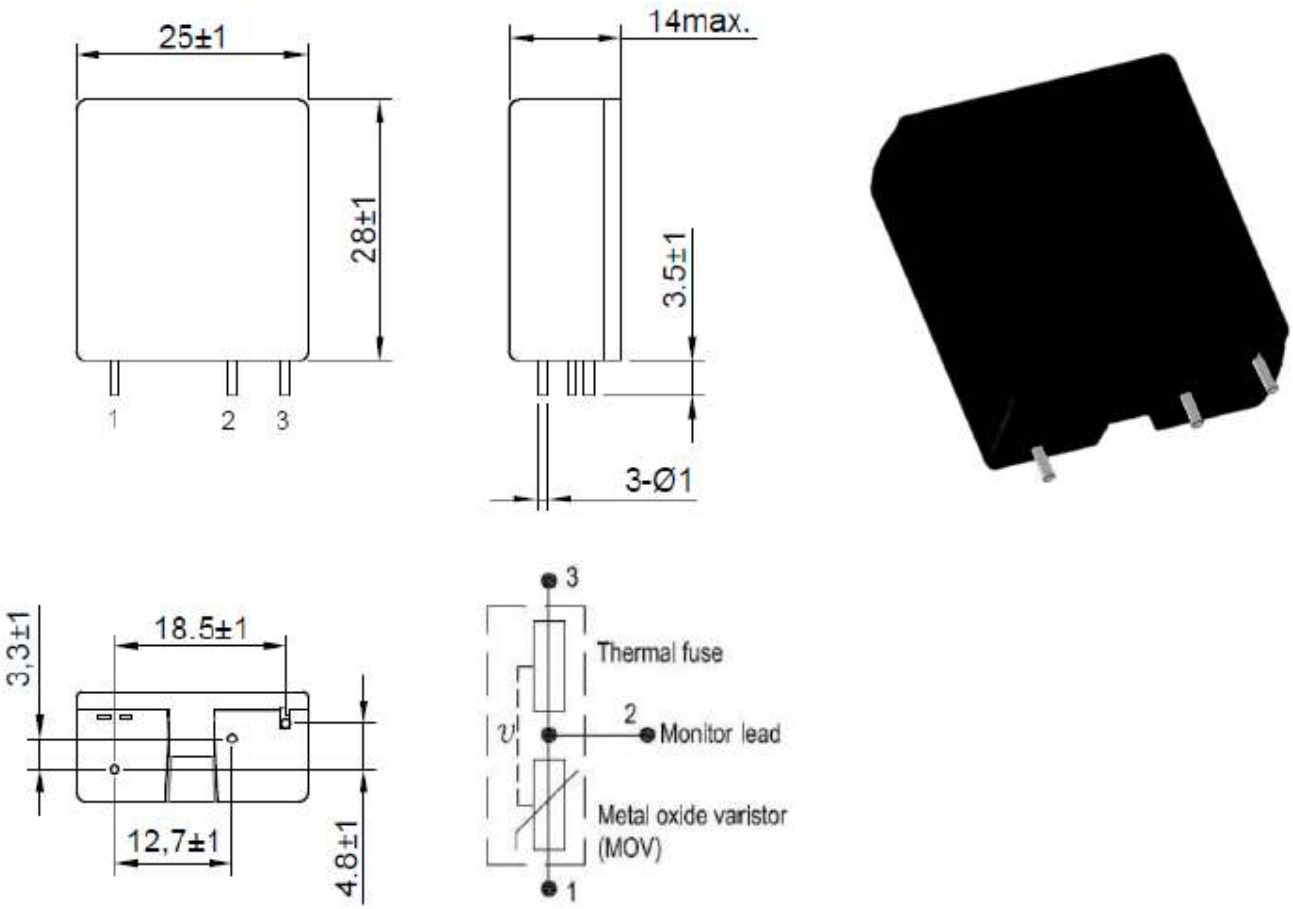
- High peak surge current up to 20 kA
- UL1449 recognized, Type 4CA (file number E321126)
- Remote Signal Contact
- Compact size with patented over-molding design
- Compliance with UL1449-4 and IEC61643-11

SIOV nomenclature

MT	=	TDK Electronics ThermoFuse varistor MT series
25	=	Rated disk diameter (mm)
K	=	Tolerance of VV at 1 mA: ±10%
150~385	=	Operating max. AC voltage
W/F	=	Wire spring / Flat spring
T2/3	=	2/3 Terminals Terminals
L2	=	2 leads indicator(Normal closed)
M101/201/301	=	Typical design

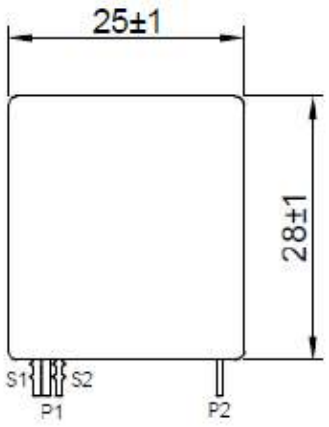
Dimensional drawing in mm

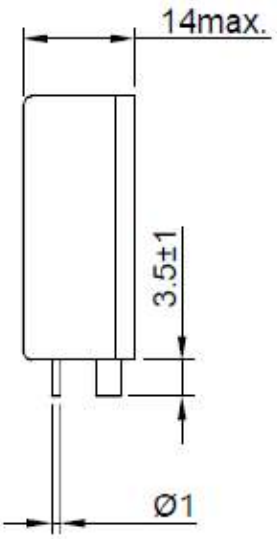
MT25*WT3M101:**

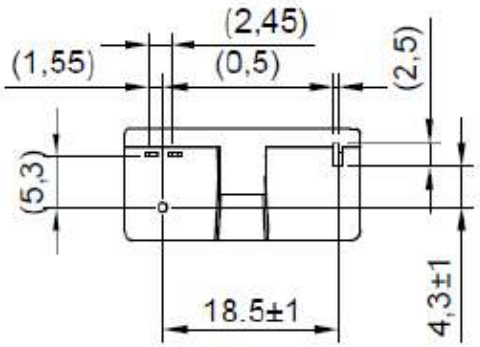


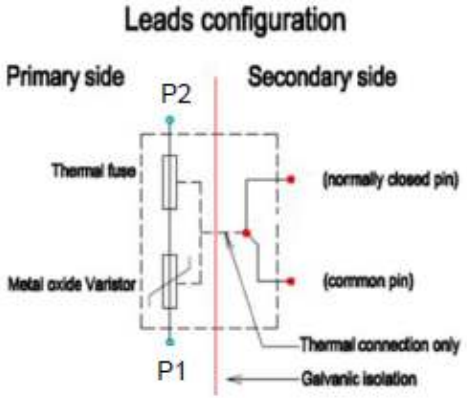
Type Name	Ordering Code
MT25K150WT3M101	B72225M0151M101
MT25K275WT3M101	B72225M0271M101
MT25K320WT3M101	B72225M0321M101
MT25K385WT3M101	B72225M0381M101

MT25*FT2L2M201:**



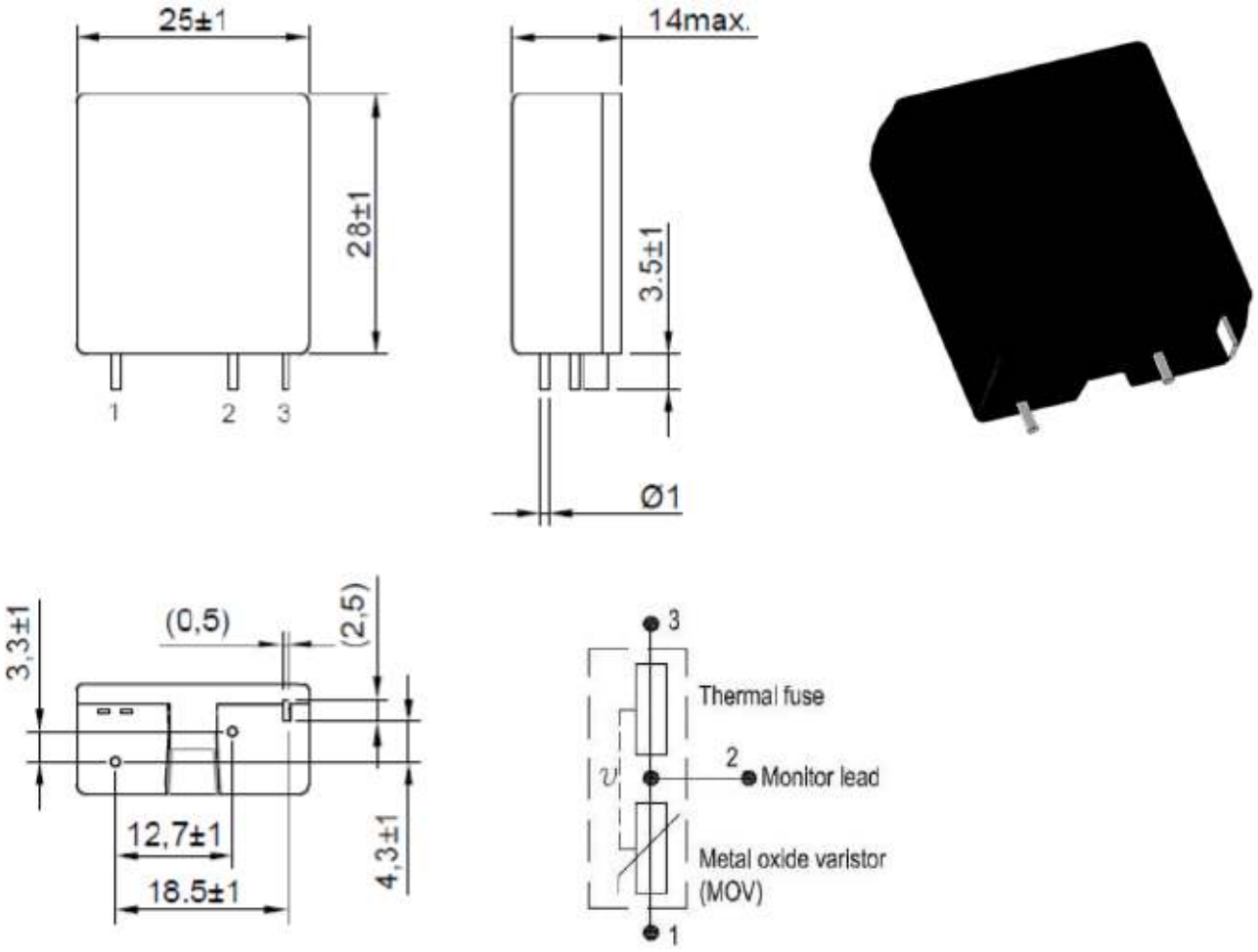






Type Name	Ordering Code
MT25K150FT2L2M201	B72225M0151M201
MT25K275FT2L2M201	B72225M0271M201
MT25K320FT2L2M201	B72225M0321M201
MT25K385FT2L2M201	B72225M0381M201

MT25*FT3M301:**



Type Name	Ordering Code
MT25K150FT3M301	B72225M0151M301
MT25K275FT3M301	B72225M0271M301
MT25K320FT3M301	B72225M0321M301
MT25K385FT3M301	B72225M0381M301

Electrical data

Note: the following technical specification is applicable for primary side

Maximum Ratings (85 °C)

Type-SIOV	max. operating voltage		Norminal surge current (8/20 µs) *)	Max. surge current (8/20 µs) *)	max. energy absorption (2 ms)	average power dissipation
	RMS Voltage [V]	DC Voltage [V]	[kA]	[kA]	[J]	[W]
MT25K150***	150	200	10	20	215	1
MT25K275***	275	350	10	20	375	1
MT25K320***	320	420	10	20	445	1
MT25K385***	385	505	10	20	600	1

Note: Thermal fuse of MT25***W*** may safely form open circuit without any damage to the whole device after 20kA 8/20 µs test.

Characteristics (25 °C):

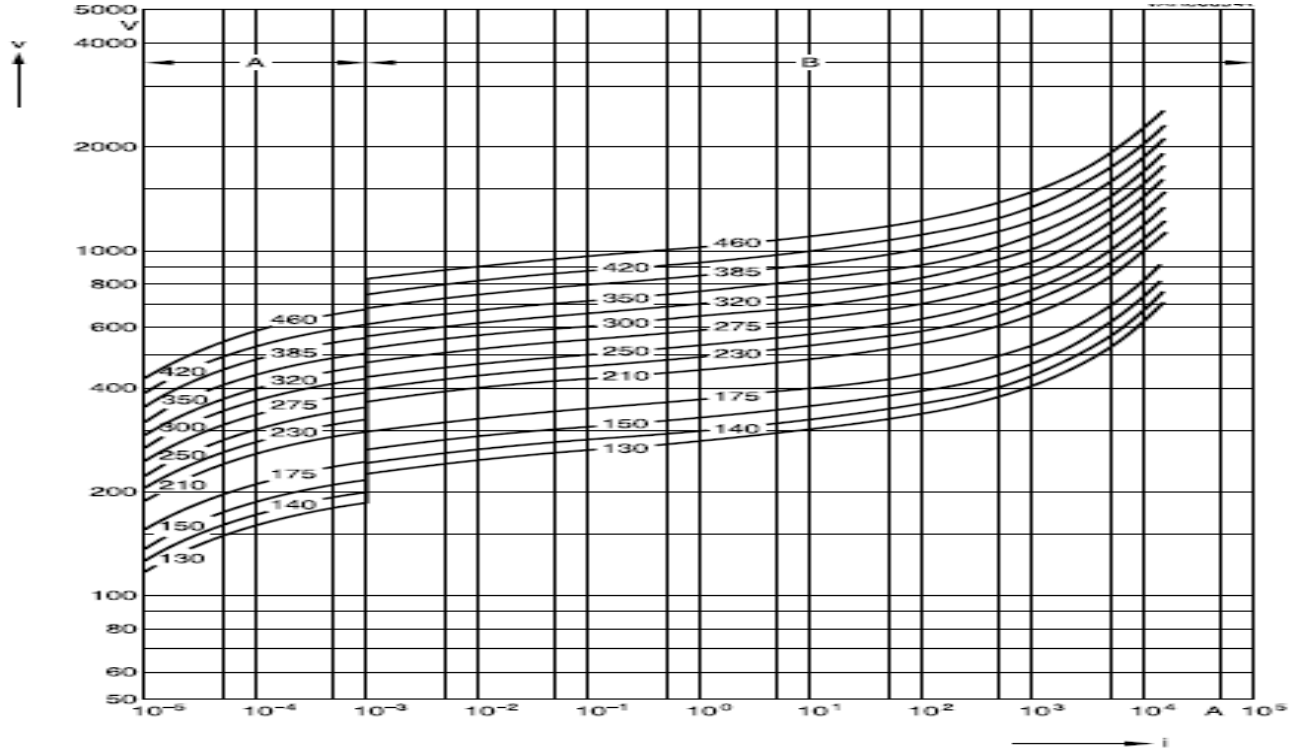
Type-SIOV	Varistor Voltage (Vv) at 1 mA ±10%	Up	typical capacitance
		10kA	(1 kHz)
	[V]	[V]	[pF]
MT25K150***	240	800	2370
MT25K275***	430	1400	1320
MT25K320***	510	1700	1090
MT25K385***	620	1800	900

***) acc.IEC61643-11**

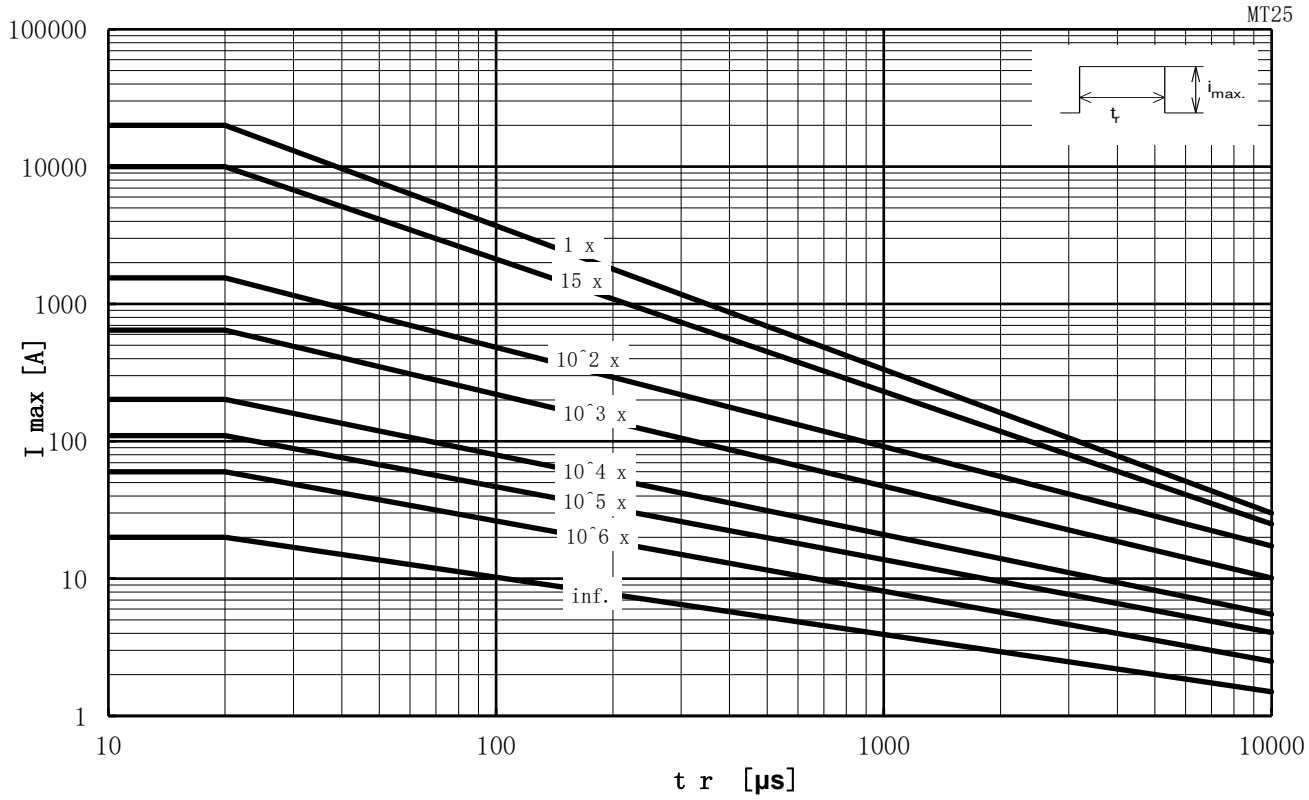
Inspection severity: 10/0 per ceramic lot

Criteria: change of varistor voltage $|dV_V (1\ mA)| < 10\%$ in direction of load
no visible damage

v/i characteristics



Derating curve

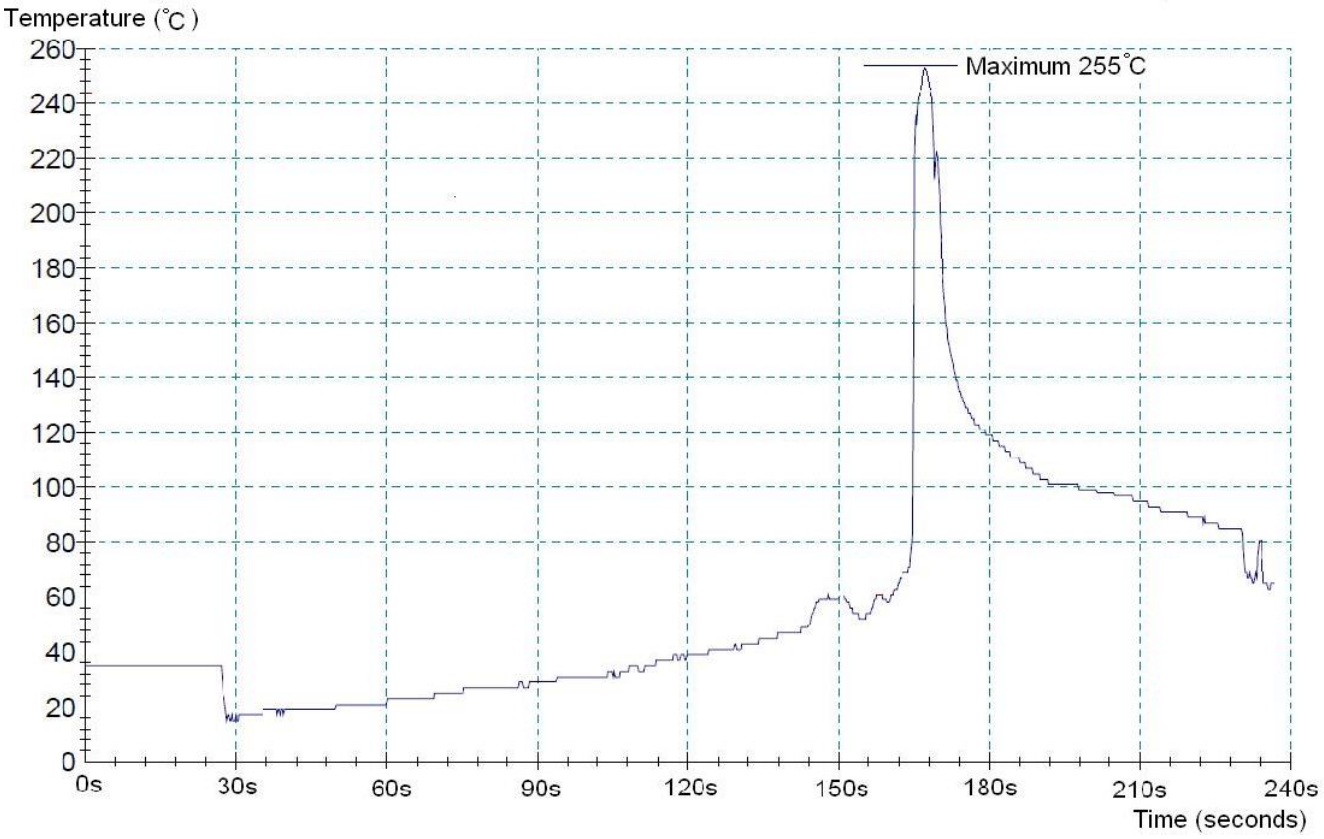


General technical data:

Climatic category to IEC 60068-1	40 / 85 / 56
Operating temperature	-40…+85 °C
Storage temperature	-40…+85 °C
Response time	< 25 ns
Coating material	UL94-V0(Black color)
Ingress Protection	IP20
Application altitude	<5000m
Installation	On board

Typical wave soldering curve

Care must be taken when soldering the device into place because it contains a thermal fuse element. Reflow soldering is not recommended.
Two soldering methods are possible: (1) Manual soldering under max. 350℃ / 3s: it is recommended to heat-sink the leads of the device. (2) Wave soldering: it is very important that the temperatures of all preheat stages and the solder bath should be strictly controlled.



Cautions and warnings

General

1. TDK Electronics metal oxide varistors are designed for specific applications and should not be used for purposes not identified in our specifications, application notes and data books unless otherwise agreed with TDK Electronics during the design-in-phase.

2. Ensure suitability of SIOVs through reliability testing during the design-in phase. SIOVs should be evaluated taking into consideration worst-case conditions.

3. For applications of SIOVs in line-to ground circuits based on various international and local standards there are restrictions existing or additional safety measures required.

Storage

After shipment from TDK Electronics the SIOV type series should be soldered within the following time period:

SIOV-S,-Q,L(S),-SNF,-ICL,-B,-E	24 months
SIOV-ETFV,-T,-SMD,-MT-EM,-NT	12 months

The parts are to be left in the original packing to prevent oxidized terminals which can cause soldering problems.

Storage temperature:	-25 to 45℃
Max. relative humidity(without condensation):	<75% annual average, <95% on max. 30 days per annum.

Handling

1. SIOVs must not be dropped.

2. Components must not be touched with bare hands. Gloves are recommended.

3. Avoid contamination of the surface of SIOV electrodes during handling, be careful of the sharp edge of SIOV electrodes.

Soldering (where applicable)

1. Use rosin-type flux or non-activated flux.

2. Insufficient preheating may cause ceramic cracks.

3. Rapid cooling by dipping in solvent is not recommended.

4. Complete removal of flux is recommended.

5. Temperature of all preheat stages and the solder bath must be strictly controlled especially for T series(T14 and T20)

Mounting

1. Potting, sealing or adhesive compounds can produce chemical reactions in the SIOV ceramic that will degrade the component's electrical characteristics.

2. Overloading SIOVs may result in ruptured packages and expulsion of hot materials. For this reason SIOVs should be physically shielded from adjacent components.

Operation

1. Use SIOVs only within the specified temperature operating range

2. Use SIOVs only within the specified voltage and current ranges.

3. Environmental conditions must not harm the SIOVs. Use SIOVs only in normal atmospheric conditions. Avoid use in deoxidizing gases (chlorine gas, hydrogen sulfide gas, ammonia gas, sulfuric acid gas, etc), corrosive agents, humid or salty conditions. Contact with any liquids and solvents should be prevented.

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3. **The warnings, cautions and product-specific notes must be observed.**
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Important notes

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