TQTHDX3225V

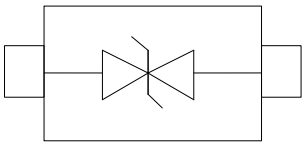
This device has been especially designed to protect 1 low voltage or signal line, as well as Power line Communication Circuit interface, against transient over-voltages.

Over-voltage noise are clamped by 2 TVS diodes. Surges are suppressed by 2 thyristors, their breakdown voltage close to 30V,then their leakage current as low as 1uA.

This devices series is designed specifically to protect Power line Communication Circuit from voltage transients induced by lightning and other transient voltage events.

Features

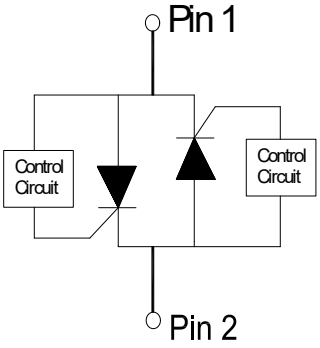
- Integrated the two TVS diodes and two thyristor
- Accurate voltage of protection
- Low switching voltages: V_{BR}
- Low leakage current: I_R = 2 uA max
- High Peak pulse current
- Solid-state silicon technology
- Meets MSL 1 Requirements
- ROHS compliant
- TECH CHIP technology



SMA/SMB

Main applications

- Power line Communication interface
- Telecommunications infrastructure
- PBX's and other switches
- Electric energy meter



Protection solution to meet

- TIA-968-A/TIA-968-B
- ITU K.20/21 Enhanced Level*/Basic Level
- GR 1089 Inter-building*/Intra-building
- IEC 61000-4-5
- IEC61000-4-2

Ordering Information

Device	Qty per Reel	Reel Size
TQTHDA3225V	5000	13 Inch
TQTHDB3225V	2500	13 Inch

Maximum ratings (Tamb=25℃ Unless Otherwise Specified)

Parameter	Symbol	Value	Unit
Non-repetitive peak on-state current: TQTHDA3225V 10/1000 us (Telcordia(Bellcore)Gr-1089-CORE.Issue 2.February 1999,Section4) 5/320 us (ITU-T K.20, K.21& K.45, K.44 open-circuit voltage wave shape 10/700us) 8/20 us (Telcordia(Bellcore)Gr-1089-CORE.Issue 2.February 1999,Section4)	I_{PPSM}	 80 80 100	 A
Non-repetitive peak on-state current: TQTHDB3225V 10/1000 us (Telcordia(Bellcore)Gr-1089-CORE.Issue 2.February 1999,Section4) 5/320 us (ITU-T K.20, K.21& K.45, K.44 open-circuit voltage wave shape 10/700us) 8/20 us (Telcordia(Bellcore)Gr-1089-CORE.Issue 2.February 1999,Section4)	I_{PPSM}	 100 125 400	 A
Lead Soldering Temperature	T_L	260 (10 sec.)	℃
Operating Temperature Range	T_J	-40 ~ 85	℃
Storage Temperature Range	T_{STG}	-55 ~ 150	℃
Lead Solder Temperature − Maximum (10 Second Duration)	T_L	260	℃
Junction To ambient	$R_{\theta JA}$	100	℃/W

Maximum ratings are those values beyond which device damage can occur. Maximum ratings applied to the device are individual stress limit values (not normal operating conditions) and are not valid simultaneously. If these limits are exceeded, device functional operation is not implied,damage may occur and reliability may be affected.

Electrical characteristics (Tamb=25℃ Unless Otherwise Specified)

Parameter	Symbol	Value			Unit
		Min.	Typ.	Max.	
Repetitive peak off-state voltage, TQTHDA3225V TQTHDB3225V	V_{DRM}			 ± 25 ± 25	V
Reverse Leakage Current, V_R=6.5V TQTHDA3225V TQTHDB3225V	I_R			 ± 2 ± 2	uA
Reverse Breakdown Voltage, I_R=1mA TQTHDA3225V TQTHDB3225V	V_{DC}		 ± 28 ± 28		V
Breakdown Voltage, TQTHDA3225V TQTHDB3225V	V_{AC}		 ± 20 ± 20		V
Impulse breakover voltage, dv/dt ≤ ±100 V/μs, Linear voltage ramp, TQTHDA3225V TQTHDB3225V	V_{BO}			 ± 40 ± 40	V

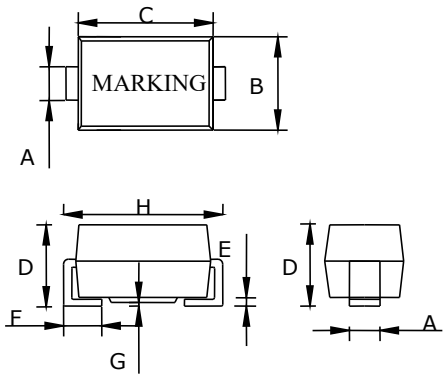
On-state voltage, T = ±2.2 A, t w = 100 µs TQTHDA3225V TQTHDB3225V	V_C			± 4 ± 4	V
Off-state capacitance, f =1 MHz, Vd =0.3V rms, V_{DC} =0V TQTHDA3225V TQTHDB3225V	C_{off}			75 75	pF

Package Information

SMA

Mechanical Data

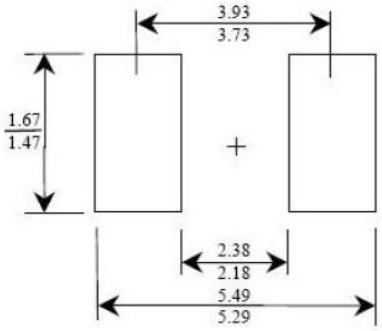
- Case: SMA
- Case Material: Molded Plastic. UL Flammability



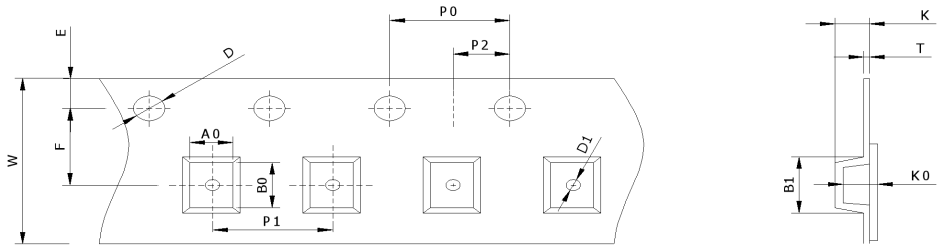
SMA

DIM	Millimeters			Inches		
	Min	Nom	Max	Min	Nom	Max
A	1.35	1.50	1.80	0.053	0.059	0.071
B	2.50	2.67	2.90	0.098	0.105	0.114
C	3.90	4.40	5.10	0.154	0.173	0.201
D	1.90	2.25	2.45	0.075	0.089	0.096
E	0.05	0.200	0.203	0.002	0.007	0.008
F	0.76	1.14	1.52	0.030	0.045	0.060
G	-	-	0.203	-	-	0.008
H	4.80	5.0	5.30	0.189	0.197	0.209

Recommended Pad outline



SMA Reel Dim



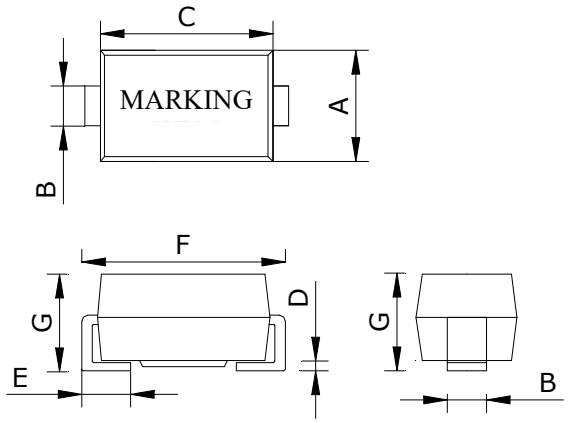
Package	Chip Size (mm)	Pocket Size B0×A0×K0(mm)	Tape Width	Reel Diameter	Quantity Per Reel	P0	P1
SMA	5.30×2.90×2.45	5.40×3.00×2.55	12mm	330mm(13inch)	5000	4mm	4mm
D	D1	E	F	K	T	W	
1.5mm	1.0mm	1.75mm	3.5mm	2.50mm	0.5mm	12mm	

Package Information

SMB

Mechanical Data

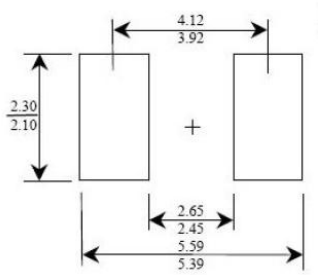
- Case: SMB
- Case Material: Molded Plastic. UL Flammability



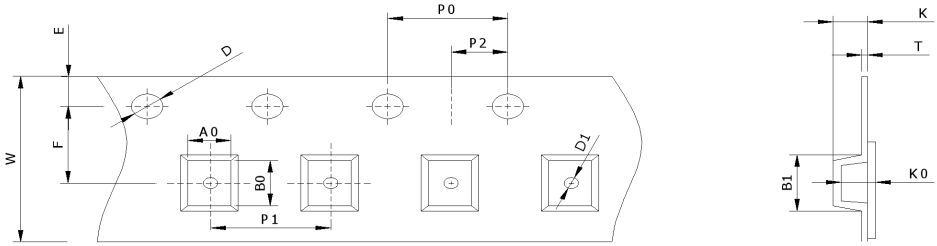
SMB

DIM	Millimeters			Inches		
	Min	Nom	Max	Min	Nom	Max
A	3.30	3.60	3.94	0.130	0.142	0.155
B	1.80	2.00	2.21	0.071	0.079	0.087
C	4.05	4.45	5.30	0.159	0.175	0.209
D	0.051	0.20	0.203	0.002	0.007	0.008
E	0.76	1.14	1.52	0.030	0.045	0.060
F	5.08	5.25	5.59	0.200	0.207	0.220
G	2.05	2.30	2.45	0.081	0.091	0.096

Recommended Pad outline



SMB Reel Dim



Package	Chip Size (mm)	Pocket Size B0×A0×K0(mm)	Tape Width	Reel Diameter	Quantity Per Reel	P0	P1
SMB	5.50×3.80×2.40	5.70×4.00×2.70	12mm	330mm(13inch)	2500	4mm	8mm
D	D1	E	F	K	T	W	
1.5mm	1.0mm	1.75mm	5.5mm	2.45mm	0.5mm	12mm	

DISCLAIMER

TECH CHIP RESERVES THE RIGHT TO MAKE CHANGES WITHOUT FURTHER NOTICE TO ANY PRODUCTS HEREIN TO IMPROVE RELIABILITY, FUNCTION OR DESIGN. TECH CHIP DOES NOT ASSUME ANY LIABILITY ARISING OUT OF THE APPLICATION OR USE OF ANY PRODUCT OR CIRCUIT DESCRIBED HEREIN; NEITHER DOES IT CONVEY ANY LICIENCE UNDER ITS PATENT RIGHTS, NOR THE RIGHTS OF OTHERS.

THE GRAPHS PROVIDED IN THIS DOCUMENT ARE STATISTICAL SUMMARIES BASED ON A LIMITED NUMBER OF SAMPLES AND ARE PROVIDED FOR INFORMATIONAL PURPOSE ONLY. THE PERFORMANCE CHARACTERISTICS LISTED IN THEM ARE NOT TESTED OR GUARANTEED. IN SOME GRAPHS, THE DATA PRESENTED MAY BE OUTSIDE THE SPECIFIED OPERATING RANGE (E.G,. OUTSIDE SPECIFIED POWER SUPPLY RANGE) AND THEREFORE OUTSIDE THE WARRANTED RANGE.