SOTYXXD

Ultra Low forward voltage TVS

Features

The device is designed specifically for miniaturized electronic devices and equipment subject to ESD transient over-voltages. Combines the performance of a TVS ESD and low forward voltage Schottky diode in a device.

It offers both an overshoot protection in the 6.4 V or 13.2 V clamping ranges and a negative spike protection in the 0.48 V.

Transient protection for data lines to

- IEC 61000-4-2 (ESD) ±25kV (air), ±10kV (contact)
- IEC 61000-4-4 (EFT) 40A (5/50ns)
- IEC 61000-4-5 (Lightning) 24A (8/20μs)
- Working voltages: 5V and 12V
- RoHS compliant package

Mechanical Data

Case: Ultra Thin Molded plastic DFN1725

Epoxy: UL94-V0 rate flame retardant

Application

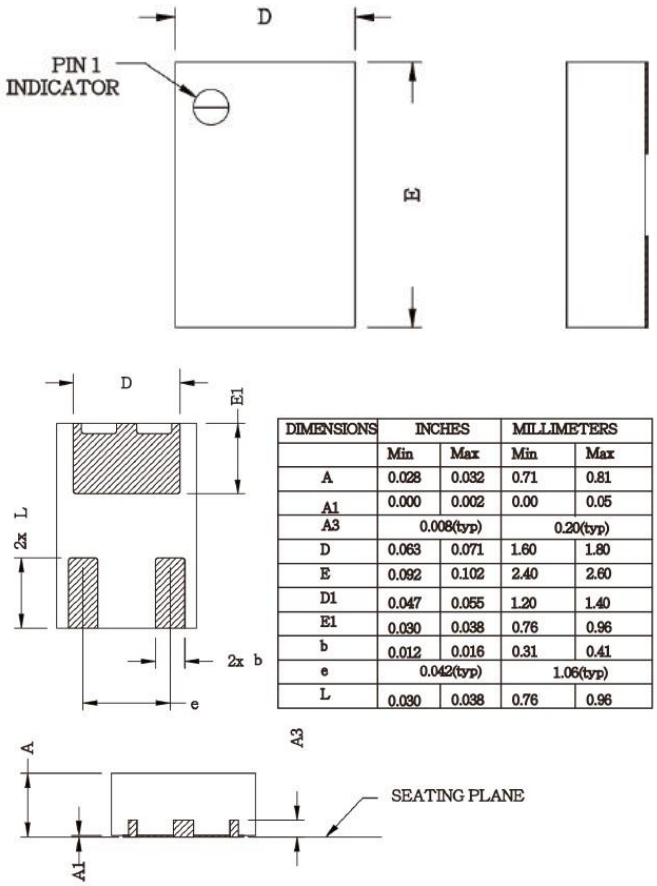
Power rail ESD transient over-voltages and reverse voltages protection for 5 and 12 V supplied IC's

Special design for HDD ESD protector

Packing & Order Information

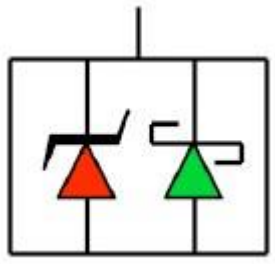
3,000/reel

RoHS COMPLIANT



DIMENSIONS	INCHES		MILLIMETERS	
	Min	Max	Min	Max
A	0.028	0.032	0.71	0.81
A1	0.000	0.002	0.00	0.05
A3	0.008(typ)		0.20(typ)	
D	0.063	0.071	1.60	1.80
E	0.092	0.102	2.40	2.60
D1	0.047	0.055	1.20	1.40
E1	0.030	0.038	0.76	0.96
b	0.012	0.016	0.31	0.41
e	0.042(typ)		1.06(typ)	
L	0.030	0.038	0.76	0.96

Graphic symbol



SOTYXXD

Ultra Low forward voltage TVS

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Absolute ratings (limiting value)

Parameter	Symbol	Value	Unit
IEC 61000-4-2 level 4 standard Air discharge Contact discharge	Vpp	 15 8	KV
Power dissipation on infinite heatsink	P	4	W

Absolute ratings (limiting value)

Parameter	Symbol	Value	Unit
Peak pulse Power dissipation, 10/1000μs pulse waveform	PPP	300	W
Non repetitive surge peak forward current tp=10 ms Tj initial = Tamb	IFSM	10	A
Storage temperature range Tstg	Tstg	-65 to +175	°C
Maximum operating junction temperature	Tj	150	°C

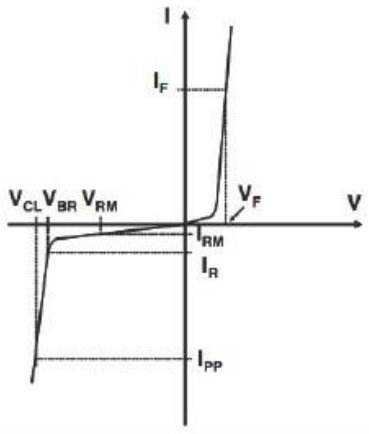
Thermal characteristics (Tc=25°C unless otherwise noted)

Parameter	Symbol	Value	Unit
Typical thermal resistance	RθJA	120	°C/W
	Rthil	30	

Electrical Characteristics

	IRM max @ VRM		IRM max @ VRM @ 85°C		VBR min @ IR		VCLmax @ IPP 10/1000 μs		VF max @ 1A
	uA	V	mA	V	V	mA	V	A	V
SOTY05D	10	5	0.5	5	6.4	10	9	43.5	0.48
SOTY12D	20	12	1.2	12	13.2	1	18.5	31	0.48

Symbol	Parameter
I_{RM}	Leakage current @ V_{RM}
V_{RM}	Stand-off voltage
V_{BR}	Breakdown voltage
I_R	Reverse leakage current
V_{CL}	Clamping voltage
I_{PP}	Peak pulse current
V_F	Forward voltage drop



SOTYXXD

Ultra Low forward voltage TVS

■Ratings and Characteristic Curves

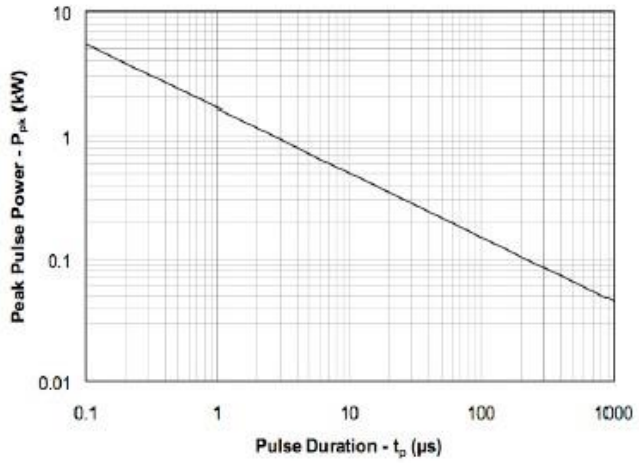


FIG.1- NON-REPETITIVE PEAK PULSE POWER VS. PULSE TIME

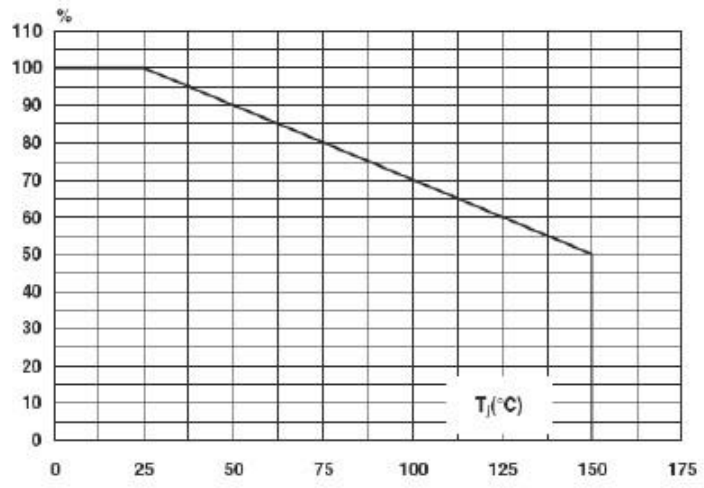


FIG.2- RELATIVE VARIATION OF PEAK PULSE POWER VERSUS INITIAL JUNCTION TEMPERATURE

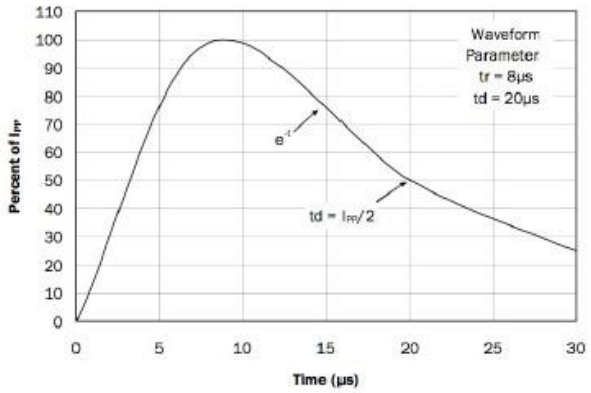


FIG.3- PULSE WAVEFORM-8/20**µs**

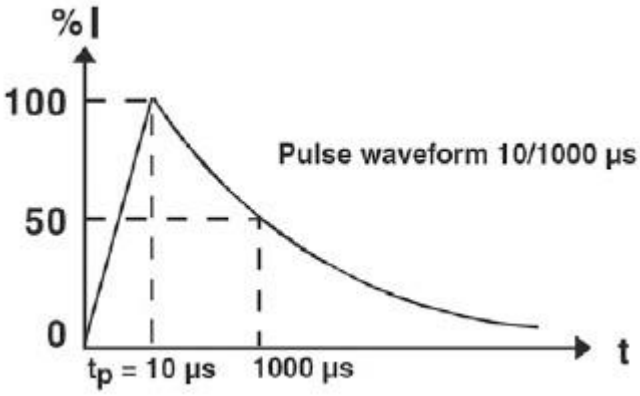


FIG.4- PULSE WAVEFORM-10/1000**µs**

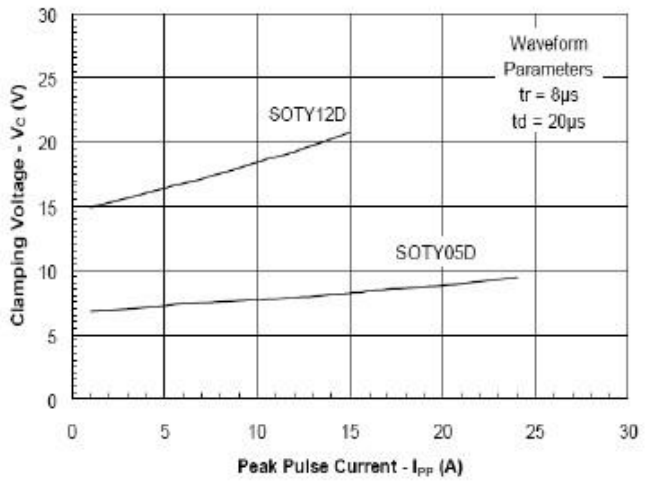


FIG.5- CAPACITANCE VS. REVERSE VOLTAGE

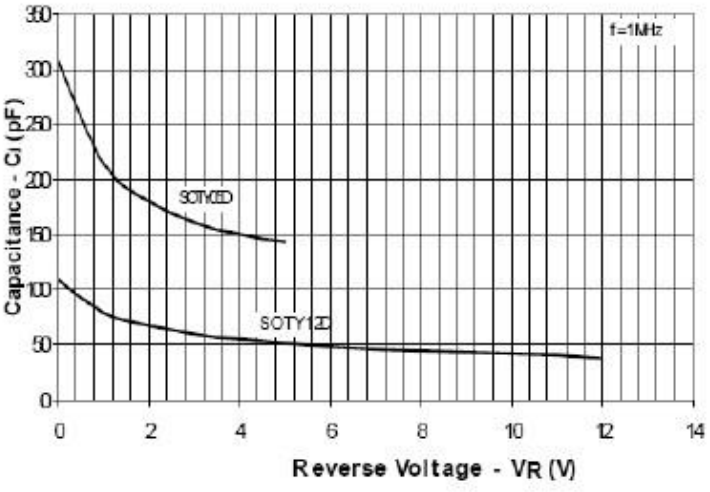


FIG.6- CAPACITANCE VS. REVERSE VOLTAGE

Ultra Low forward voltage TVS

Disclaimer

ALL PRODUCT, PRODUCT SPECIFICATIONS AND DATA ARE SUBJECT TO CHANGE WITHOUT NOTICE TO IMPROVE RELIABILITY, FUNCTION OR DESIGN OR OTHERWISE.

Bruckewell Technology Inc., its affiliates, agents, and employees, and all persons acting on its or their behalf (collectively, "Bruckewell"), disclaim any and all liability for any errors, inaccuracies or incompleteness contained in any datasheet or in any other disclosure relating to any product.

Bruckewell makes no warranty, representation or guarantee regarding the suitability of the products for any particular purpose or the continuing production of any product. To the maximum extent permitted by applicable law, Bruckewell disclaims

(i) Any and all liability arising out of the application or use of any product.

(ii) Any and all liability, including without limitation special, consequential or incidental damages.

(iii) Any and all implied warranties, including warranties of fitness for particular purpose, non-infringement and merchantability.

Statements regarding the suitability of products for certain types of applications are based on Bruckewell's knowledge of typical requirements that are often placed on Bruckewell products in generic applications.

Such statements are not binding statements about the suitability of products for a particular application. It is the customer's responsibility to validate that a particular product with the properties described in the product specification is suitable for use in a particular application. Parameters provided in datasheets and/or specifications may vary in different applications and performance may vary over time.

Product specifications do not expand or otherwise modify Bruckewell's terms and conditions of purchase, including but not limited to the warranty expressed therein.