TPESD5425E-6

Low Capacitance TVS Diode Array

Features

- Low operating voltage: 5V
- Ultra low capacitance: 1.5pF typical (I/O to I/O)
- Ultra low leakage: nA level
- Low clamping voltage
- -IEC 61000-4-2 (ESD) immunity test

Air discharge: ±30kV

Contact discharge: ±30kV

-IEC61000-4-4 (EFT) 40A (5/50ns)

-IEC61000-4-5(Lightning):30A(8/20μs)

- These are Pb−Free Devices
- Response Time is Typically < 1 ns

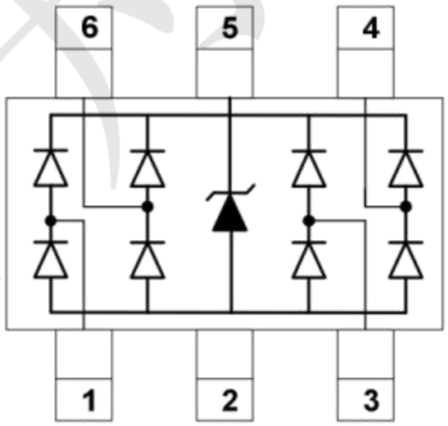
Mechanical Characteristics

- Package: SOT23-6
- Lead Finish: Matte Tin
- Case Material: “Green” Molding Compound
- Terminal Connections: See Diagram Below
- - IEC 61000-4-2 (ESD) immunity test

Applications

- T1/E1 Line Cards
- T3/E3 and DS3 Interfaces
- Low Voltage Interfaces
- ISDN Interfaces

Dimensions and Pin Configuration



Circuit and Pin Schematic

Absolute Maximum Ratings(Tamb=25°C unless otherwise specified)

Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20μs)	Ppk	600	W
Peak Pulse Current (8/20μs)Any I/O pin to ground	Ipp	30	A
Peak Pulse Current (8/20μs)VCC pin to ground	Ipp	60	A
ESD per IEC 61000−4−2 (Air) ESD per IEC 61000−4−2 (Contact)	VESD	±30 ±30	KV
Operating Temperature Range	TJ	−55 to +125	°C
Storage Temperature Range	Tstg	−55 to +150	°C

Electrical Characteristics (TA=25°C unless otherwise specified)

Parameter	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Working Voltage	VRWM	--	--	5	V	Any I/O pin to ground
Breakdown Voltage	VBR	6	--	--	V	IT= 1mA,Any I/O pin to ground
Reverse Leakage Current	IR	--	1	--	uA	VRWM=5V,Any I/O pin to ground
Clamping Voltage	VC	--	--	11	V	Ipp=1A(8x 20us pulse), Any I/O pin to ground
Clamping Voltage	VC	--	--	15	V	Ipp=4A(8x 20us pulse), Any I/O pin to ground
Clamping Voltage	VC	--	18	--	V	Ipp=30A(8x 20us pulse), Any I/O pin to ground
Clamping Voltage	VC	--	20	--	V	Ipp=60A(8x 20us pulse), VCC pin to ground
Junction Capacitance	Cvo-GND	--	2.5	--	pF	VR=0V,f=1MHz, Any I/O to GND
	$C_{I/O-I/O}$	--	1.5	--	pF	VR=0V,f=1MHz, between I/O pins

Characteristic Curves

Fig1. 8/20μs Pulse Waveform

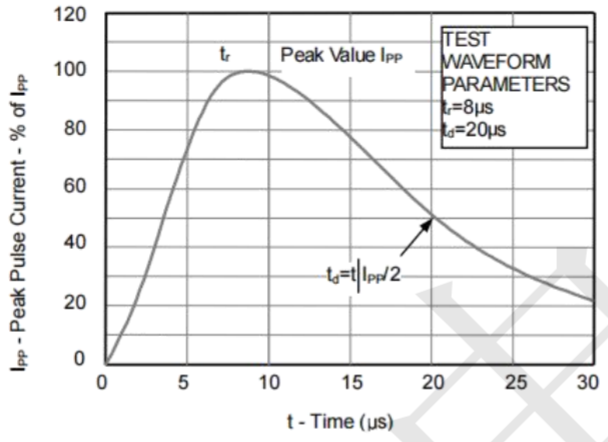


Fig2. ESD Pulse Waveform (according to IEC 61000-4-2)

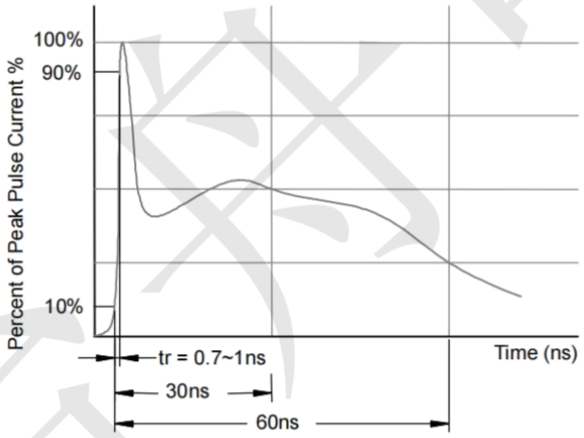
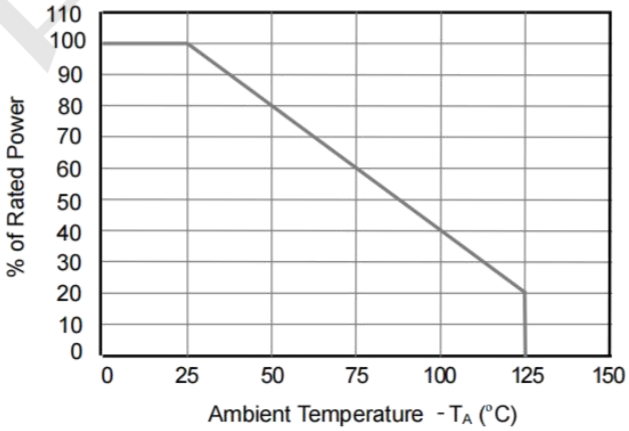
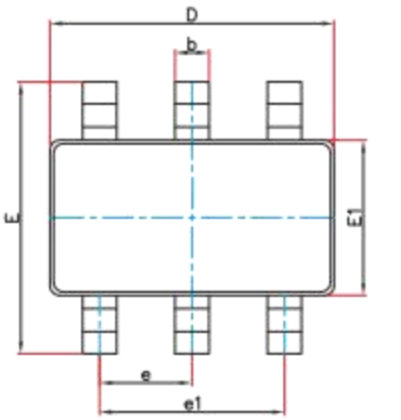


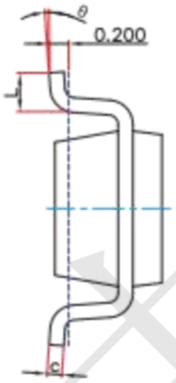
Fig3. Power Derating Curve



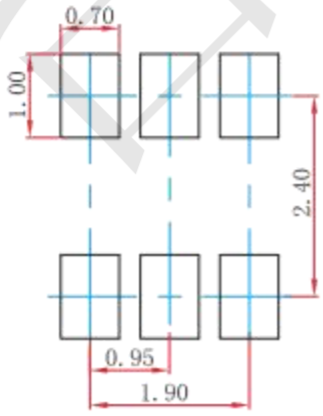
Package Outline & Dimensions

SOT23-6





Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	1.050	1.250	0.041	0.049
A1	0.000	0.100	0.000	0.004
A2	1.050	1.150	0.041	0.045
b	0.300	0.500	0.012	0.020
c	0.100	0.200	0.004	0.008
D	2.820	3.020	0.111	0.119
E1	1.500	1.700	0.059	0.067
E	2.650	2.950	0.104	0.116
e	0.950(BSC)		0.037(BSC)	
e1	1.800	2.000	0.071	0.079
L	0.300	0.600	0.012	0.024
θ	0°	8°	0°	8°



Note:
1.Controlling dimension:In millimeters.
2.General tolerance:± 0.05mm.
3.The pad layout is for reference purposes only.

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