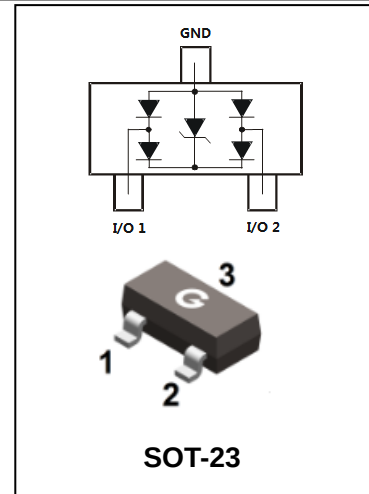


2 CHANNEL LOW CAPACITANCE TVS DIODE ARRAY TSR05A

FEATURES

- IEC 61000-4-2 (ESD): Air – $\pm 16\text{kV}$, Contact – $\pm 16\text{kV}$.
- IEC 61000-4-4 (EFT) Additional Level, 40A (5/50ns).
- IEC 61000-4-5 (Lightning): 3A (8/20 μs).
- 2 Channels of ESD protection.
- Typically Used at High Speed Ports such as USB 2.0, IEEE1394, Serial ATA, DVI, HDMI, PCI.
- IEC 61000-4-2 Level ESD protection.
- Totally Lead-free & Fully RoHS Compliant
- RoHS compliant with Halogen-free
- Qualified to AEC-Q101 Standards

HF



ORDERING INFORMATION

Type No.	Marking	Package Code
TSR05A	BD1	SOT-23

MAXIMUM RATING @ Ta=25°C unless otherwise specified

Characteristic	Symbol	Limits	Unit
According to IEC61000-4-2 air discharge	V_{ESD}	± 16	KV
According to IEC61000-4-2 contact discharge			
Peak pulse power ($t_p = 8/20\mu\text{s}$)	P_{PP}	60	W
Peak Pulse Current	I_{PP}	4	A
Operating Junction Temperature Range	T_J	-55 ~ +125	°C
Storage Temperature Range	T_{STG}	-55 ~ +150	°C
Thermal Resistance, Junction to Ambient (Note 1)	$R_{\theta\text{JA}}$	417	°C/W

2 CHANNEL LOW CAPACITANCE TVS DIODE ARRAY TSR05A

ELECTRICAL CHARACTERISTICS @ Ta=25°C unless otherwise specified

Characteristic	Symbol	Test Condition	Min	TYP	MAX	UNIT
Reverse Stand-off Voltage	V_{RWM}		-	-	5	V
Reverse Breakdown Voltage	V_{BR}	$I_R = 1mA$, I/O to GND	6	-	-	V
Reverse Clamping Voltage	V_C	$I_{PP}=4A$, I/O to V_{SS} , 8/20 μs	-	-	15	V
Reverse Leakage Current (Note 2)	I_R	$V_R = 5V$, I/O to GND	-	-	1.0	μA
Forward Voltage	V_F	$I_F = 15mA$, V_{SS} to I/O	-	-	1.1	V
Junction Capacitance	C_J	$V_R = 0V$, $f = 1MHz$ Any IO pin to GND	-	1.0	1.2	pF
		$V_R = 0V$, $f = 1MHz$ Any IO pin to IO pin	-	0.5	0.6	

Notes:

1. Device mounted on FR-4 PCB pad layout (2oz copper) as shown on Diodes, Inc.
2. Short duration pulse test used to minimize self-heating effect.

2 CHANNEL LOW CAPACITANCE TVS DIODE ARRAY TSR05A

TYPICAL CHARACTERISTICS @ $T_a=25^{\circ}\text{C}$ unless otherwise specified

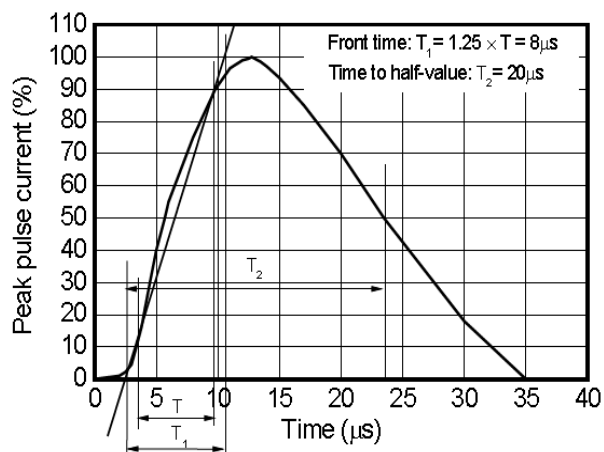


Fig 1 8/20 μs waveform per IEC61000-4-5

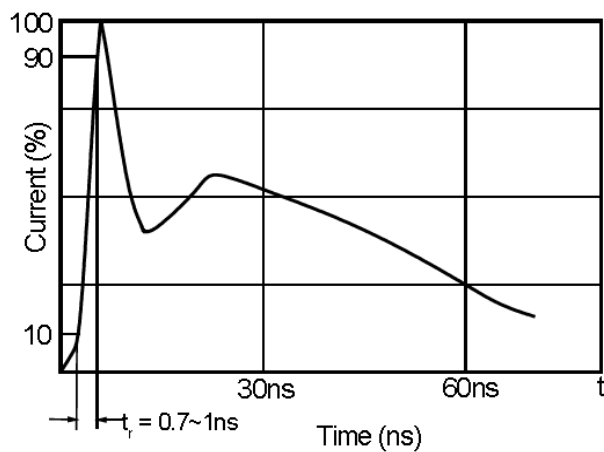


Fig 2 ESD pulse waveform according to IEC61000-4-2

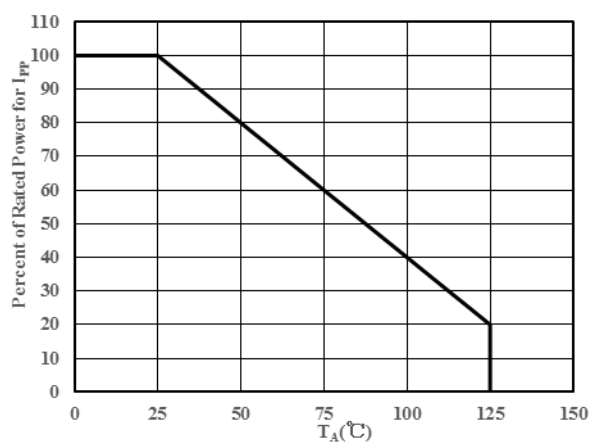


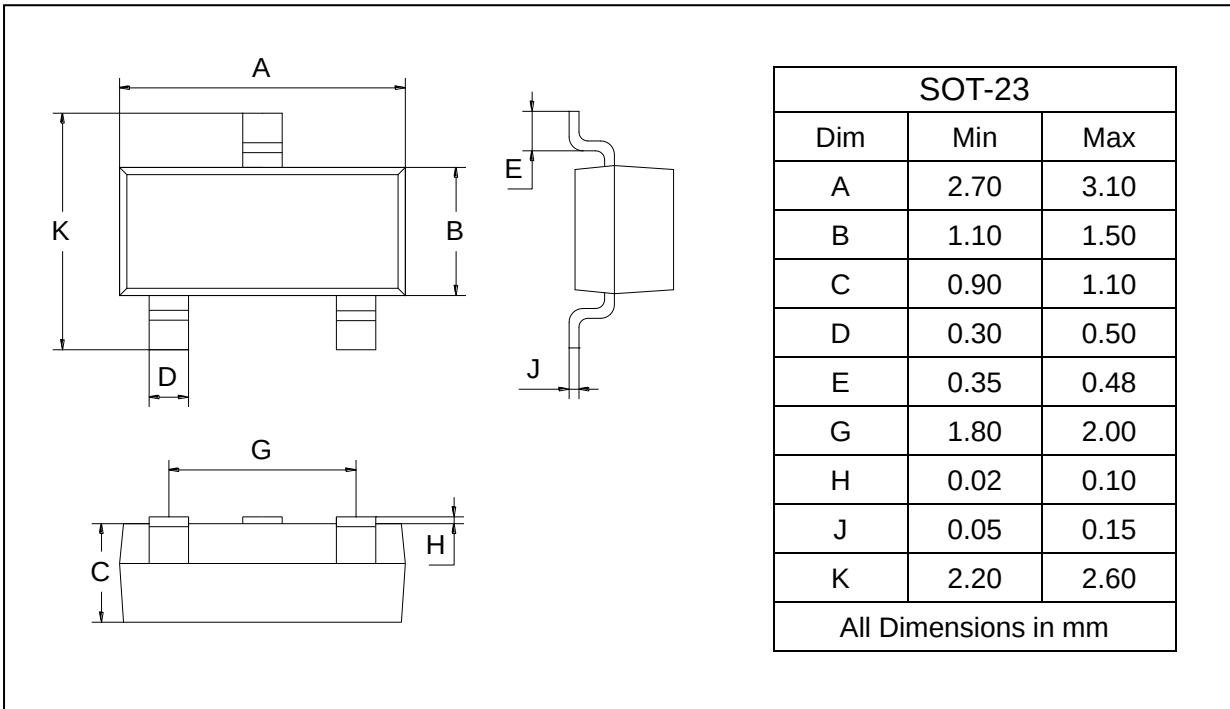
Fig 3 Power Derating Curve

2 CHANNEL LOW CAPACITANCE TVS DIODE ARRAY TSR05A

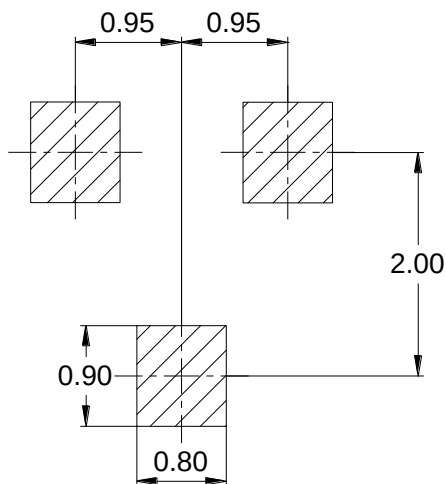
PACKAGE OUTLINE

Plastic surface mounted package

SOT-23



SOLDERING FOOTPRINT



Unit: mm

PACKAGE INFORMATION

Device	Package	Shipping
TSR05A	SOT-23	3000 pcs / Tape & Reel