

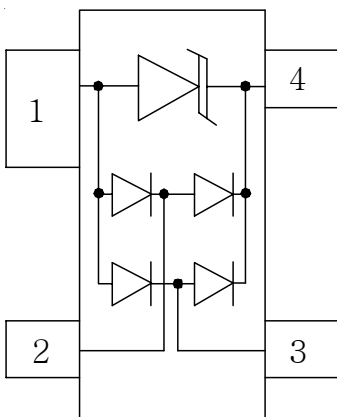
Description

The PRTR5V0U2X-N is a 2-line ultra-low capacitance TVS diode array, utilizing leading monolithic silicon technology to provide fast response time and low ESD clamping voltage, making this device an ideal solution for protecting voltage sensitive high-speed data lines. The PRTR5V0U2X-N has a very low capacitance with a typical value at 0.6pF, and complies with the IEC 61000-4-2 (ESD) standard with ± 20 kV air and ± 15 kV contact discharge. It is assembled into a 4-pin SOT-143 lead-free package. The small size, very low capacitance and high ESD surge protection make PRTR5V0U2X-N an ideal choice to protect cell phone, digital video interfaces, high speed data ports, and many other portable applications.

Features

- * Uni-directional ESD protection of two lines
- * Low capacitance: 0.6pF(Max)
- * Low reverse stand-off voltage: 5V
- * Low reverse clamping voltage
- * Low leakage current
- * Fast response time
- * IEC 61000-4-2 Level ESD protection
- * RoHS Compliant

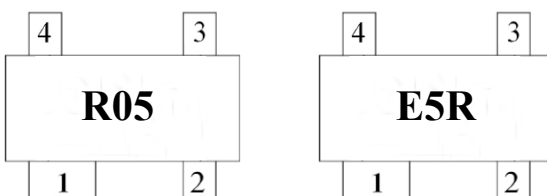
Circuit Diagram



Applications

- * Cellular Handsets and Accessories
- * Notebooks and Handhelds
- * Personal Digital Assistants
- * Portable Instrumentation
- * Digital Cameras
- * Peripherals
- * Audio Players, Keypads, Side Keys, LCD
- * USB 2.0

Marking Diagram



Transparent top view

R05/E5R= Device Marking Code

Ordering Information

Part Number	Packaging	Reel Size
PRTR5V0U2X-N	3000/Tape & Reel	7 inch

Absolute Maximum Ratings ($T_A=25^{\circ}\text{C}$ unless otherwise specified)

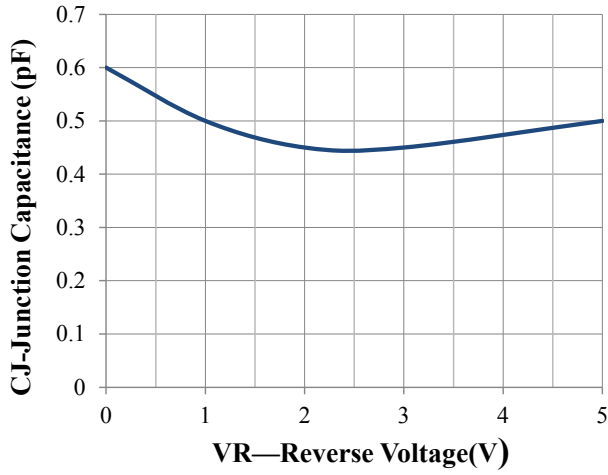
Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20 μs , I/O-GND)	Ppk	50	W
Peak Pulse Power (8/20 μs , Vcc-GND)	Ppk	240	W
Peak Pulse Current (8/20 μs , I/O-GND)	IPP	4	A
Peak Pulse Current (8/20 μs , Vcc-GND)	IPP	15	A
ESD per IEC 61000-4-2 (Air)	$V_{\text{ESD}, \text{VDD}}$	± 20	kV
ESD per IEC 61000-4-2 (Contact)	$V_{\text{ESD}, \text{I/O}}$	± 15	
Operating Temperature Range	TJ	150	$^{\circ}\text{C}$
Storage Temperature Range	Tstg	-55 to +150	$^{\circ}\text{C}$

Electrical Characteristics ($T_A=25^{\circ}\text{C}$ unless otherwise specified)

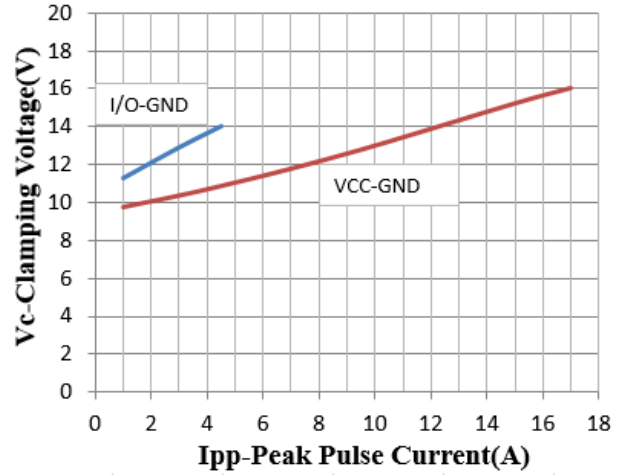
Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Reverse Working Voltage	V_{RWM}	I/O-GND			5	V
Breakdown Voltage	V_{BR}	$I_{\text{T}} = 1\text{mA}$, I/O-GND	6	7.0	9	V
Breakdown Voltage	V_{BR}	$I_{\text{T}} = 1\text{mA}$, VCC-GND	6	7.2	9	
Reverse Leakage Current	I_{R}	$V_{\text{RWM}} = 5\text{V}$			1	μA
Clamping Voltage	V_{C}	IPP = 4A (8 x 20 μs pulse), I/O-GND		14.0	16.0	V
Clamping Voltage	V_{C}	IPP = 15A (8 x 20 μs pulse), VCC-GND		15.0	17.0	V
Junction Capacitance	C_{J}	$V_{\text{R}} = 0\text{V}$, $f = 1\text{MHz}$, I/O-I/O		0.3	0.5	pF
Junction Capacitance	C_{J}	$V_{\text{R}} = 0\text{V}$, $f = 1\text{MHz}$, I/O-GND		0.6	0.9	pF



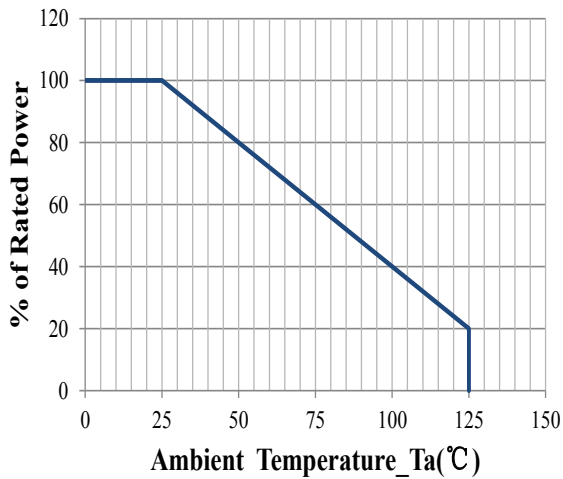
Typical Performance Characteristics ($T_A=25^\circ\text{C}$ unless otherwise Specified)



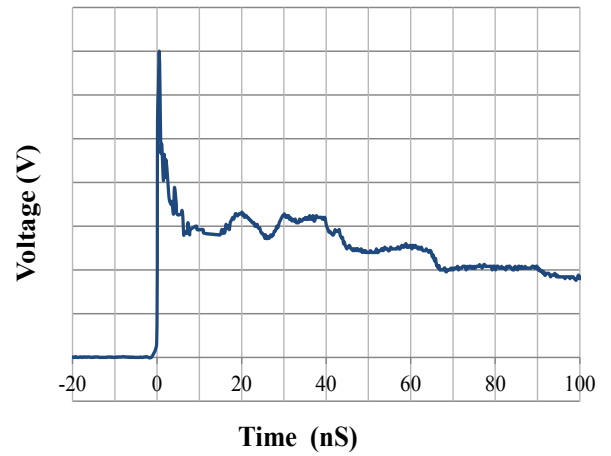
Capacitance Characteristics



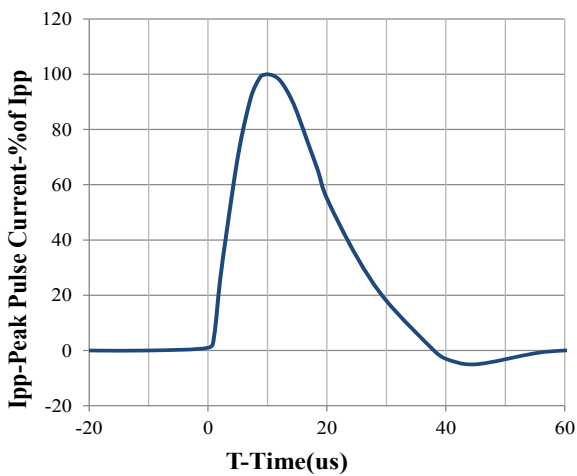
V_C vs. I_{PP}



Power Derating Curve



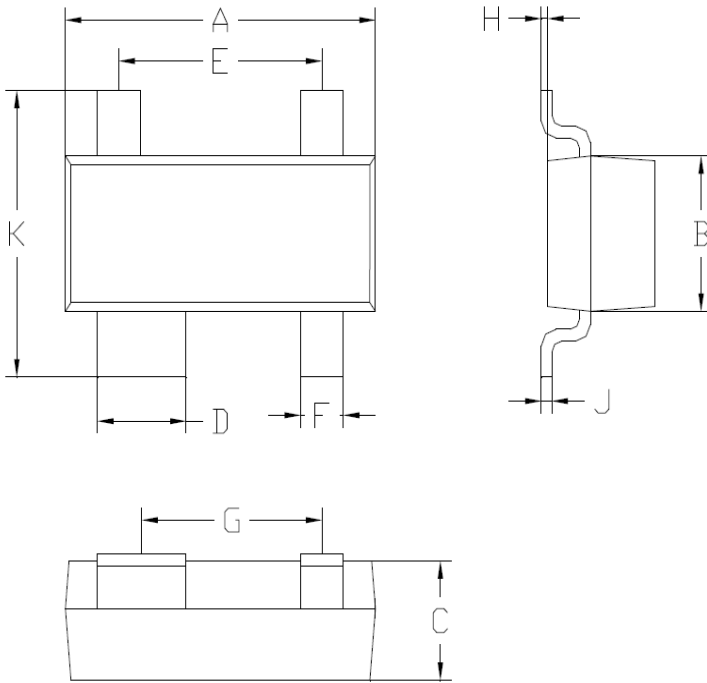
IEC61000-4-2 Pulse Waveform



8 X 20us Pulse Waveform

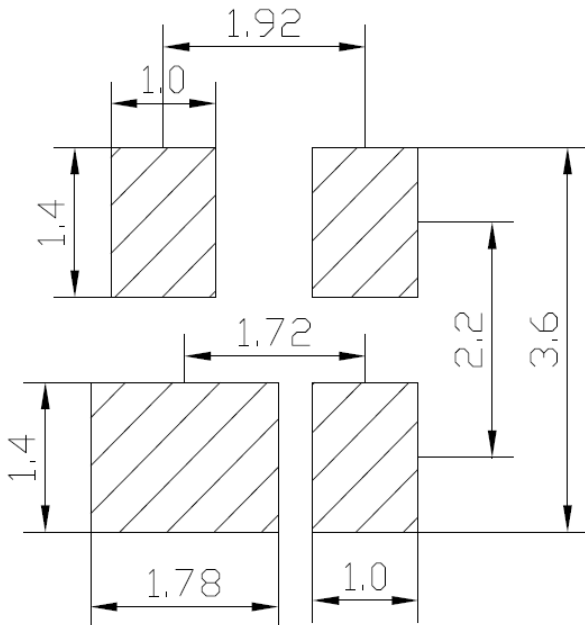


SOT-143 Package Outline Drawing



SOT-143		
Dim	Min	Max
A	2.70	3.10
B	1.10	1.50
C	0.9	1.1
D	0.78	0.88
E	1.80	2.00
F	0.37	0.43
G	1.59	1.79
H	0.02	0.1
J	0.05	0.15
K	2.20	2.60
ALL Dimensions in mm		

Soldering Footprint



Unit : mm