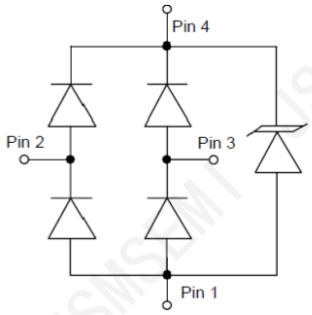
Features

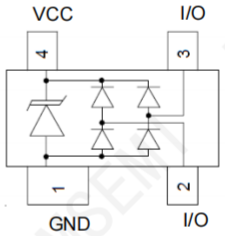
- 45W (8/20μs) Peak Pulse Power
- Low Capacitance ESD Protection
- SOT-143 Package
- RoHS Compliant
- Matte Tin Lead finish (Pb-Free)
- Protect Two High Speed Data Lines and Vcc
- Meet IEC61000-4-2 Level 4:
  - Contact Discharge > 15kV
  - Air Discharge > 20kV



Circuit Diagram

Applications

- I²C Bus Protection
- ISDN S/T Interface
- Ethernet 10/100 BaseT
- Portable Electronics
- Video Line Protection
- WAN/LAN Equipment
- Microcontroller Input Protection
- USB Power and Data Line Protection
- T1/E1 Secondary IC Side Protection



PIN Diagram

Ordering information

Device	Package	Reel Size	Qty / Reel
PRTR5V0U2AX,215-JSM	SOT-143	7 inch	3000

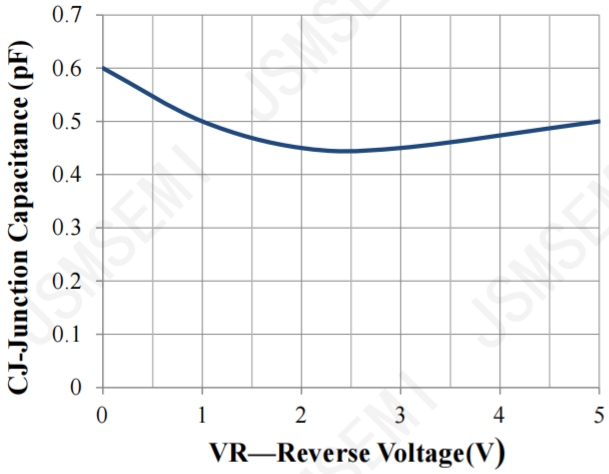
Absolute Maximum Ratings (T_A =25°C unless otherwise specified)

Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20μs,I/O-GND)	Ppk	45	W
Peak Pulse Power (8/20μs,Vcc-GND)	Ppk	60	W
Peak Pulse Current (8/20μs,I/O-GND)	IPP	3	A
Peak Pulse Current (8/20μs,Vcc-GND)	IPP	4	A
ESD per IEC 61000−4−2 (Air) ESD per IEC 61000−4−2 (Contact)	$V_{ESD,VDD}$ $V_{ESD,I/O}$	±20 ±15	kV
Operating Temperature Range	TJ	−55 to +125	°C
Storage Temperature Range	Tstg	−55 to +150	°C

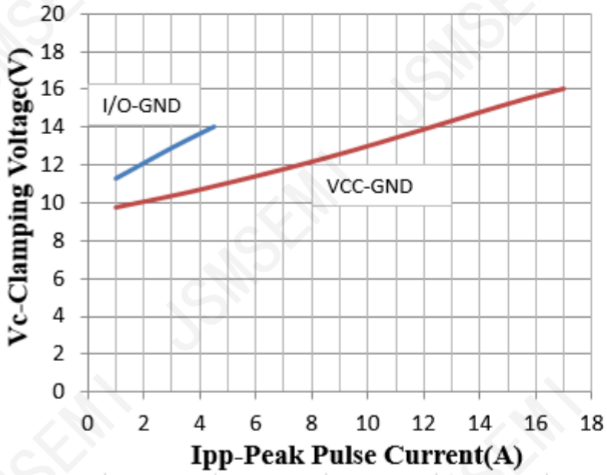
Electrical Characteristics (T_A =25°C unless otherwise specified)

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Reverse Working Voltage	V_{RWM}	Pin 5 to GND,I/O-GND			5. 0	V
Breakdown Voltage	V_{BR}	I_T = 1mA(Pin 5 to GND,I/O-GND)	6.0	7.5	8.5	V
Reverse Leakage Current	I_R	V_{RWM} = 5. 0V			0.5	μA
Forward Breakdown Voltage	V_F	I_F = 15mA,GND to Pin 5/IO		0.8	1.0	V
Clamping Voltage	V_C	IPP = 3A (8 x 20μs pulse, I/O to GND)		14.0	15.0	V
Clamping Voltage	V_C	IPP = 4A (8 x 20μs pulse, Pin 5 to GND)		16.0	18. 0	V
Junction Capacitance	C_J	V_{pin5} = 5V, I/O=0V, f = 1MHz,I/O-GND		0.6	0.7	pF
Junction Capacitance	C_J	V_{pin5} = 5V, I/O=0V, f = 1MHz,I/O-I/O pins		0.3	0.4	pF

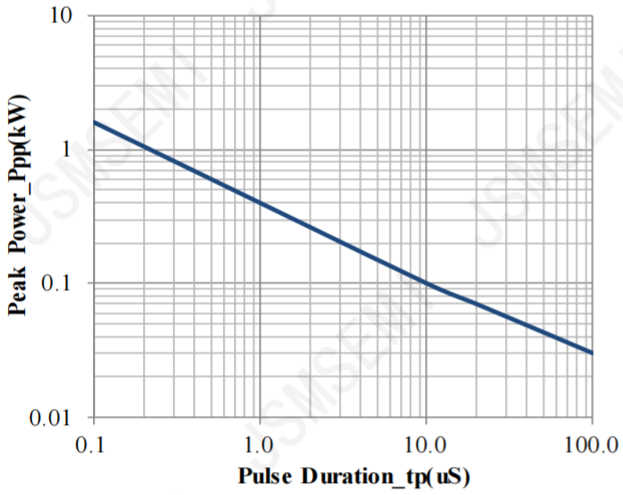
Typical Performance Characteristics (TA =25°C unless otherwise Specified)



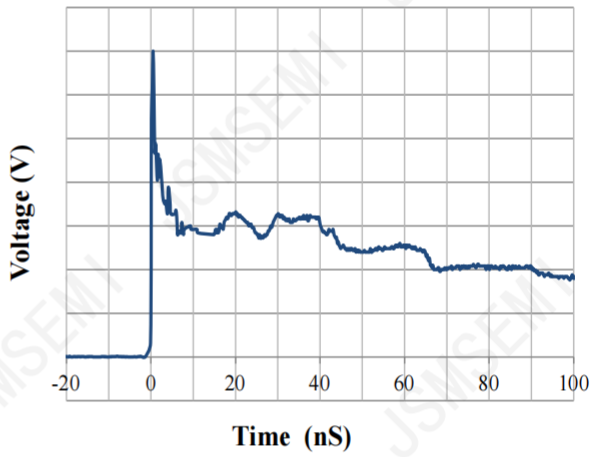
Junction Capacitance vs. Reverse Voltage



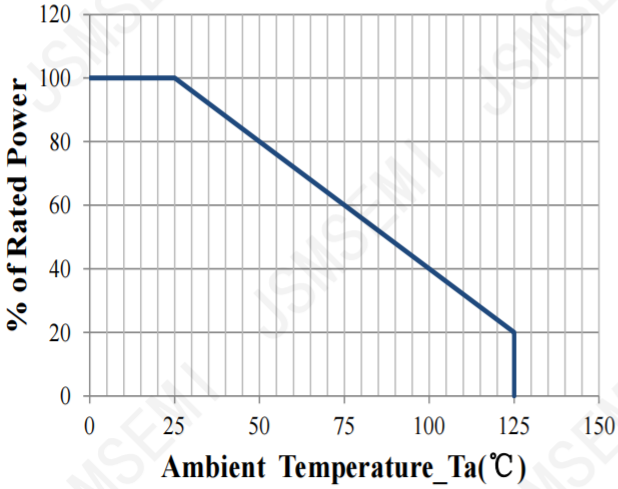
Clamping Voltage vs. Peak Pulse Current



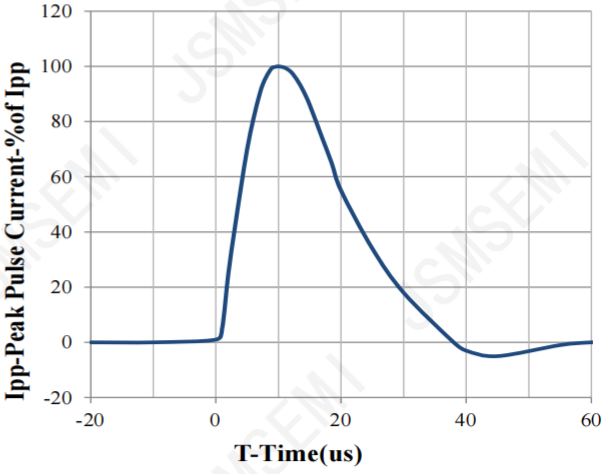
Peak Pulse Power vs. Pulse Time



IEC61000-4-2 Pulse Waveform



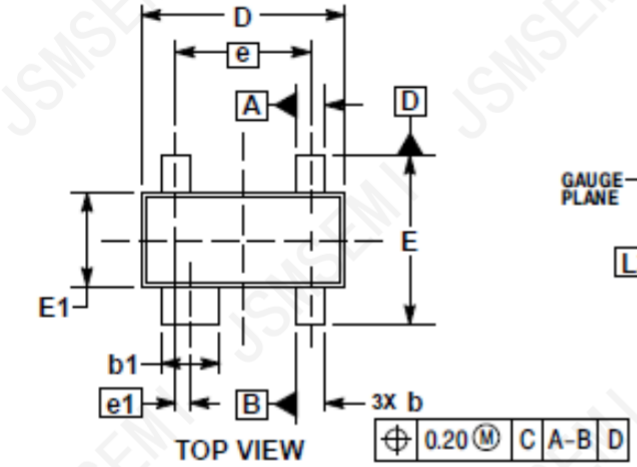
Power Derating Curve

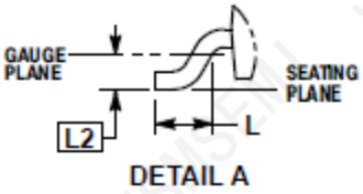


8 X 20us Pulse Waveform

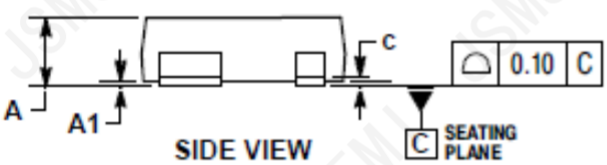
Package Information

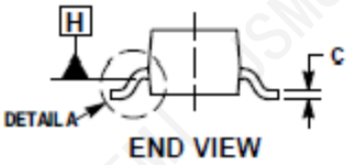
SOT-143





DIM	MILLIMETERS	
	MIN	MAX
A	0.80	1.12
A1	0.01	0.15
b	0.30	0.51
b1	0.76	0.94
c	0.08	0.20
D	2.80	3.05
E	2.10	2.64
E1	1.20	1.40
e	1.92 BSC	
e1	0.20 BSC	
L	0.35	0.70
L2	0.25 BSC	





Revision History

Rev.	Change	Date
V1.0	Initial version	2/23/2024

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