



DWRU0541T6 ESD Protection Diode

Feature

- Uni-directional ESD protection of four lines
- 60Watts peak pulse power ($t_p = 8/20\mu s$)
- Working voltage: 5V
- Ultra low capacitance: 0.6pF typical (I/O-GND)
- Ultra low leakage: nA level
- Up to 4 data lines and one power line protects
- Low clamping voltage
- IEC 61000-4-2 $\pm 15kV$ contact $\pm 20kV$ air
- IEC 61000-4-5 (Lightning) 4.5A (8/20 μs)

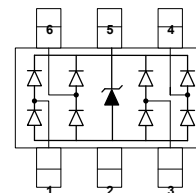
Application

- Monitors and flat panel displays
- Set-top box and Digital TV
- Video graphics cards
- Digital Video Interface (DVI)
- Notebook Computers
- PCI Express and Serial SATA Ports

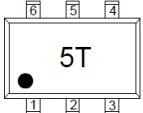
Mechanical Data

- Package: SOT-363
- Molding compound flammability rating: UL 94V-0
- RoHS/WEEE compliant

Schematic & PIN Configuration



Ordering Information

Part Number	Package	Marking	QTY per Reel	Reel Size
DWRU0541T6	SOT-363		3000 pcs	7 inches



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

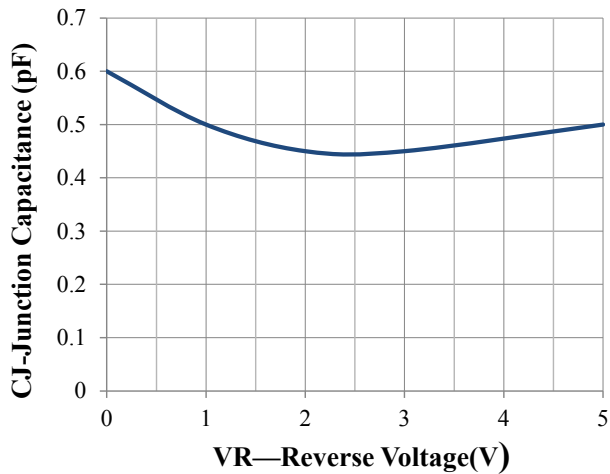
Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20 μs , I/O-GND)	P_{PK}	60	W
Peak Pulse Power (8/20 μs , Vcc-GND)	P_{PK}	300	W
Peak Pulse Current (8/20 μs , I/O-GND)	I_{PP}	4.5	A
Peak Pulse Current (8/20 μs , Vcc-GND)	I_{PP}	17	A
ESD per IEC 61000-4-2 (Air) ESD per IEC 61000-4-2 (Contact)	$V_{ESD, VDD}$ $V_{ESD, I/O}$	± 20 ± 15	kV
Operating Temperature Range	T_J	-55 to +125	$^{\circ}\text{C}$
Storage Temperature Range	T_{stg}	-55 to +150	$^{\circ}\text{C}$

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

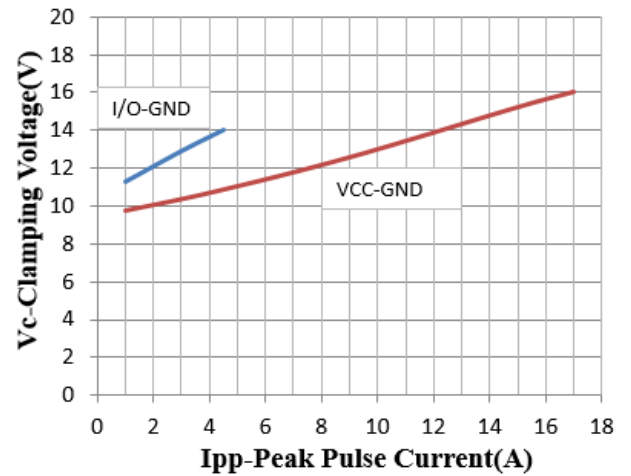
Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Reverse Working Voltage	V_{RWM}	Pin 5 to GND, I/O-GND			5.0	V
Breakdown Voltage	V_{BR}	$I_T = 1\text{mA}$ (Pin 5 to GND, I/O-GND)	6.0	7.5	8.5	V
Reverse Leakage Current	I_R	$V_{RWM} = 5.0\text{V}$			0.5	μA
Forward Breakdown Voltage	V_F	$I_F = 15\text{mA}$, GND to Pin 5/I/O		0.8	1.0	V
Clamping Voltage	V_C	$I_{PP} = 4.5\text{A}$ (8 x 20 μs pulse, I/O to GND)		14.0	15.0	V
Clamping Voltage	V_C	$I_{PP} = 17\text{A}$ (8 x 20 μs pulse, Pin 5 to GND)		16.0	18.0	V
Junction Capacitance	C_J	$V_{pin5} = 5\text{V}$, $I/O=0\text{V}$, $f = 1\text{MHz}$, I/O-GND		0.6	0.8	pF
Junction Capacitance	C_J	$V_{pin5} = 5\text{V}$, $I/O=0\text{V}$, $f = 1\text{MHz}$, I/O-I/O pins		0.3	0.4	pF



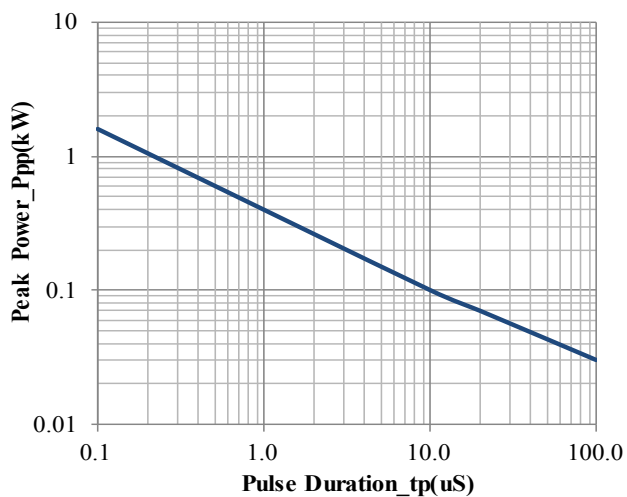
Typical Characteristics



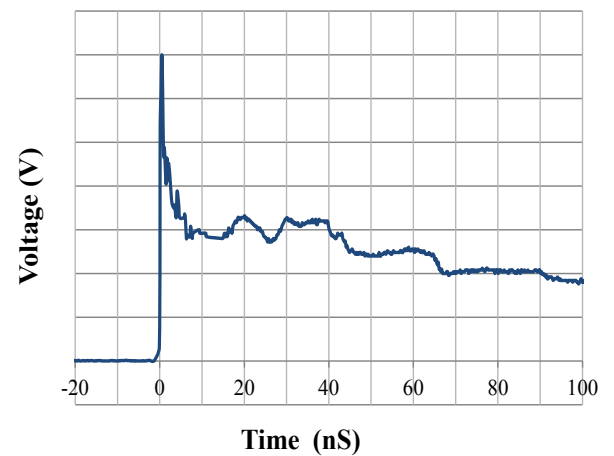
Junction Capacitance vs. Reverse Voltage



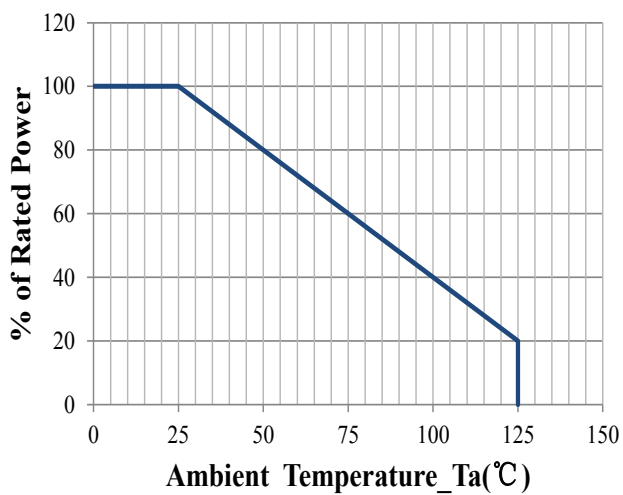
Clamping Voltage vs. Peak Pulse Current



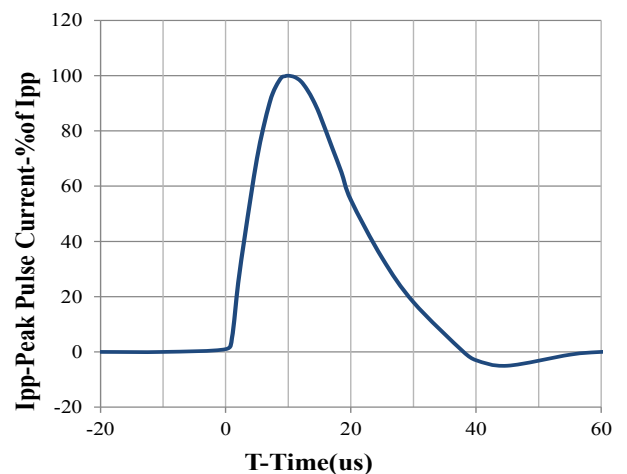
Peak Pulse Power vs. Pulse Time



IEC61000-4-2 Pulse Waveform



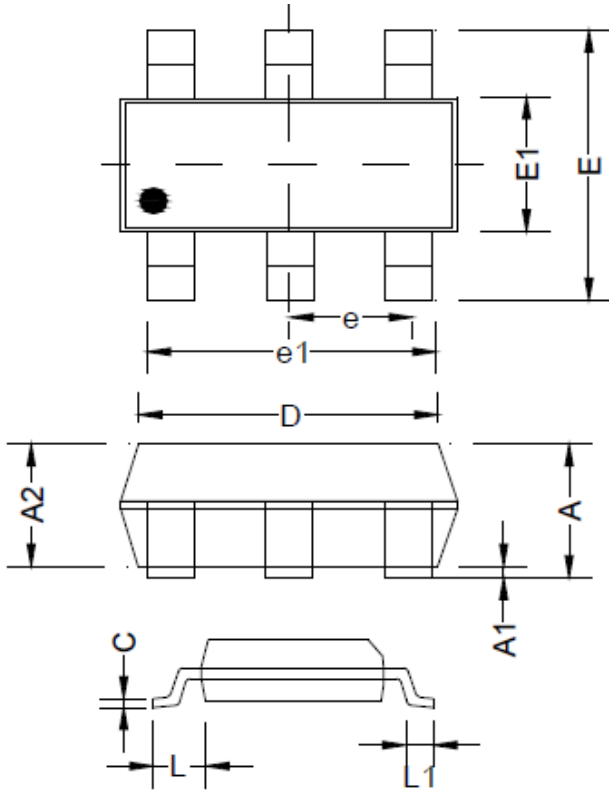
Power Derating Curve



8 X 20us Pulse Waveform



SOT-363 Outline Drawing



Symbol	Millimeter		Inches	
	Min	Max	Min	Max
A	0.900	1.100	0.035	0.043
A1	0.000	0.100	0.000	0.004
A2	0.900	1.000	0.035	0.039
D	2.000	2.200	0.079	0.087
E1	1.150	1.350	0.045	0.053
E	2.150	2.450	0.085	0.096
e	0.650Typ.		0.026Typ.	
e1	1.200	1.400	0.047	0.055
L	0.525Ref.		0.021Ref.	
L1	0.260	0.460	0.010	0.018
θ	0°	8°	0°	8°
Z	2.300		0.090	
G	1.850		0.073	
P	0.65Typ.		0.020Typ.	
X	0.200		0.008	
Y	0.850		0.033	