



DWRU0541T2-Q ESD Protection Diode

Feature

- Uni-directional ESD protection of four lines
- 60Watts peak pulse power ($t_p = 8/20\mu s$, I/O-GND)
- Working voltage: 5V
- Junction Capacitance: 0.6pF(Typ, I/O-GND)
- Low clamping voltage
- Low leakage current
- AEC-Q101 qualified
- IEC 61000-4-2 $\pm 15kV$ contact $\pm 20kV$ air
- IEC 61000-4-5 (Lightning) 4.5A ($8/20\mu s$, I/O-GND)

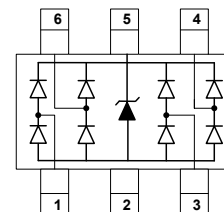
Application

- 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

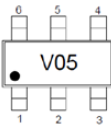
Mechanical Data

- Package: SOT-23-6L
- Molding compound flammability rating: UL 94V-0
- RoHS/WEEE compliant

Schematic & PIN Configuration



Ordering Information

Part Number	Package	Marking	QTY per Reel	Reel Size
DWRU0541T2-Q	SOT-23-6L		3000 pcs	7 inches



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

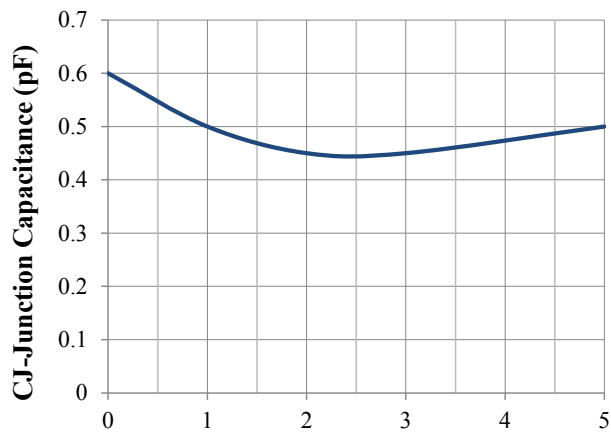
Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20 μs , I/O-GND)	P_{PK}	60	W
Peak Pulse Power (8/20 μs , Vcc-GND)	P_{PK}	300	W
Peak Pulse Current (8/20 μs , I/O-GND)	I_{PP}	4.5	A
Peak Pulse Current (8/20 μs , Vcc-GND)	I_{PP}	17	A
ESD per IEC 61000-4-2 (Air) ESD per IEC 61000-4-2 (Contact)	V_{ESD}, V_{DD} $V_{ESD}, I/O$	± 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)

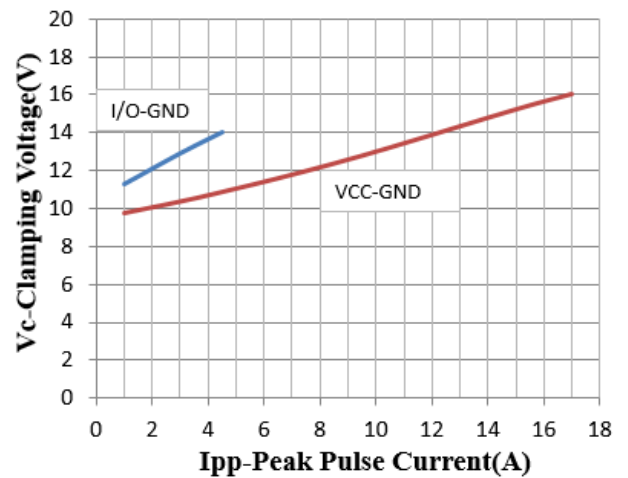
Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Reverse Working Voltage	V_{RWM}	Pin 5 to GND, I/O-GND			5.0	V
Breakdown Voltage	V_{BR}	$I_T = 1\text{mA}$ (Pin 5 to GND, I/O-GND)	6.0	7.5	8.5	V
Reverse Leakage Current	I_R	$V_{RWM} = 5.0\text{V}$			0.5	μA
Forward Breakdown Voltage	V_F	$I_F = 15\text{mA}$, 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=0V, $f = 1\text{MHz}$, I/O-GND		0.6	0.7	pF
Junction Capacitance	C_J	$V_{pin5} = 5\text{V}$, I/O=0V, $f = 1\text{MHz}$, I/O-I/O pins		0.3	0.4	pF



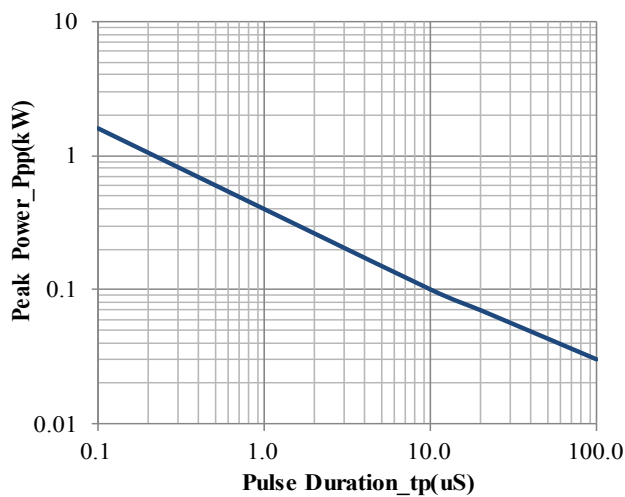
Typical Characteristics



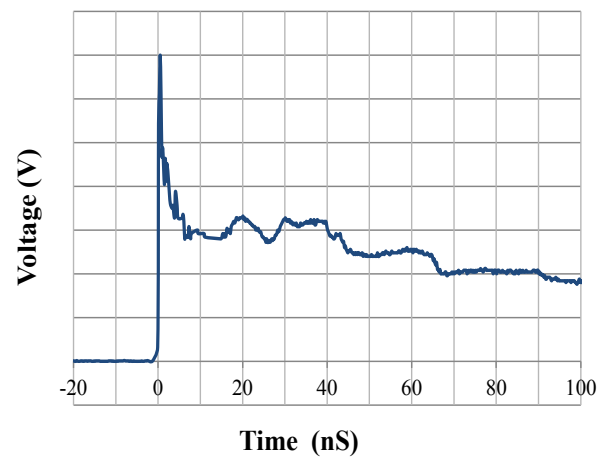
Junction Capacitance vs. Reverse Voltage



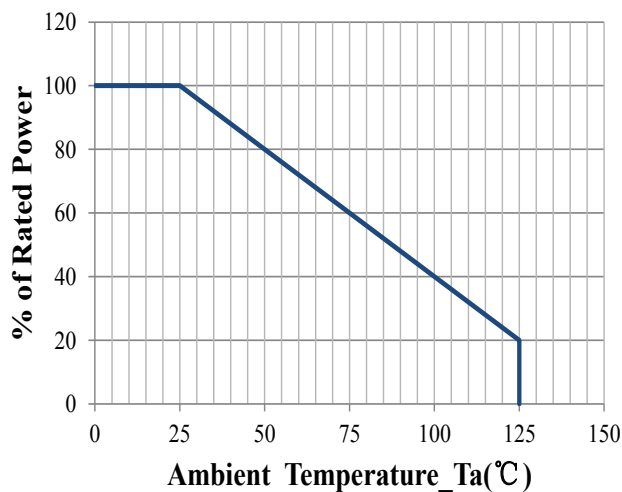
Clamping Voltage vs. Peak Pulse Current



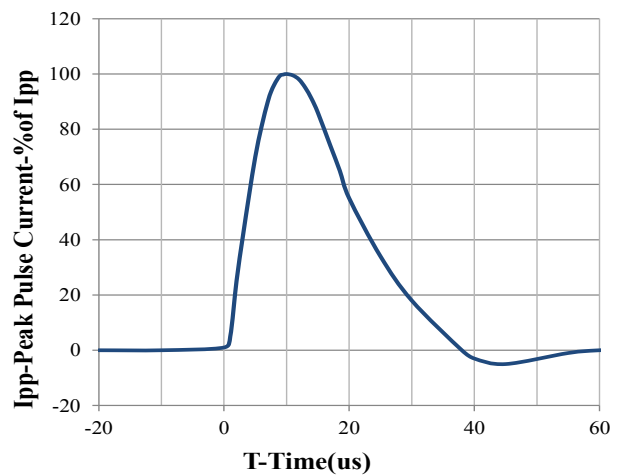
Peak Pulse Power vs. Pulse Time



IEC61000-4-2 Pulse Waveform



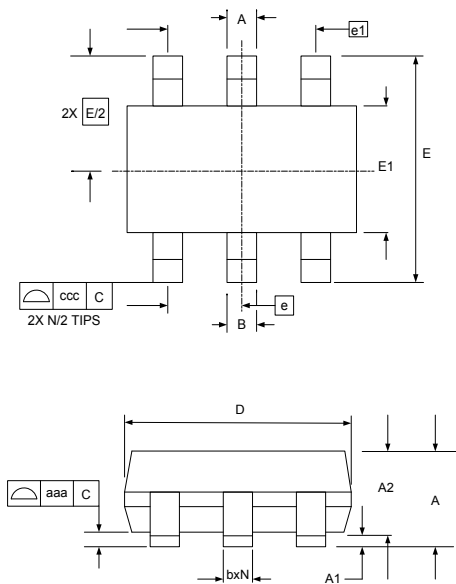
Power Derating Curve



8 X 20us Pulse Waveform



SOT-23-6L Outline Drawing



Sym	Dimensions					
	Millimeters			Inches		
	MIN	NOM	MAX	MIN	NOM	MAX
A	0.90		1.45	0.035		0.057
A1	0.00		0.15	0.000		0.006
A2	0.90	1.15	1.30	0.035	0.045	0.051
b	0.25		0.50	0.010		0.020
c	0.08		0.22	0.003		0.009
D	2.80	2.90	3.10	0.110	0.114	0.122
E1	1.50	1.60	1.75	0.060	0.063	0.069
E	2.80 BSC			0.110 BSC		
e	0.95 BSC			0.037 BSC		
e1	1.90 BSC			0.075 BSC		
N	6			6		
aaa	0.10			0.004		
ccc	0.20			0.008		