



DW05-4R-AT-S ESD Protection Diode

Feature

- Uni-directional ESD protection of four lines
- 400Watts peak pulse power ($t_p = 8/20\mu s$, I/O-GND)
- Working voltage: 5V
- Junction Capacitance: 3pF(Typ, I/O-GND)
- Low clamping voltage
- Low leakage current
- AEC-Q101 qualified
- IEC 61000-4-2 $\pm 30kV$ contact $\pm 30kV$ air
- IEC 61000-4-5 (Lightning) 26A ($8/20\mu s$, I/O-GND)

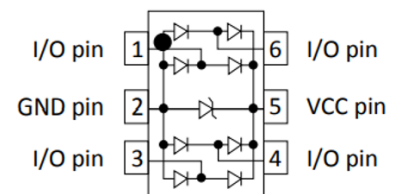
Application

- 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

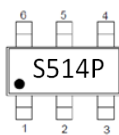
Mechanical Data

- 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
DW05-4R-AT-S	SOT-23-6L		3000 pcs	7 inches



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

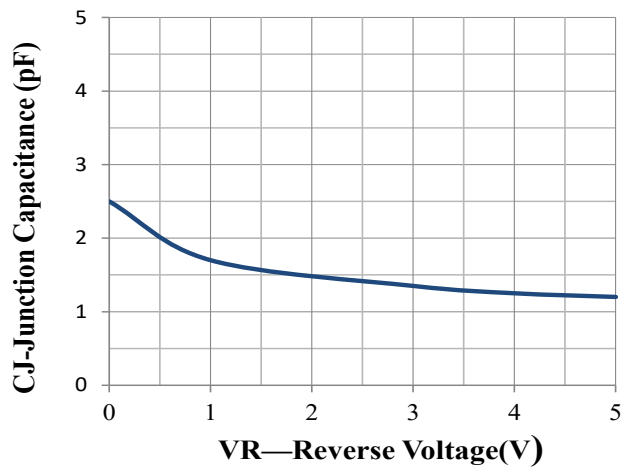
Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20 μs , I/O-GND)	P_{PK}	400	W
Peak Pulse Power (8/20 μs , Vcc-GND)	P_{PK}	600	W
Peak Pulse Current (8/20 μs , I/O-GND)	I_{PP}	26	A
Peak Pulse Current (8/20 μs , Vcc-GND)	I_{PP}	40	A
ESD per IEC 61000-4-2 (Air)	V_{ESD}, V_{DD}	± 30	kV
ESD per IEC 61000-4-2 (Contact)	$V_{ESD}, I/O$	± 30	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)

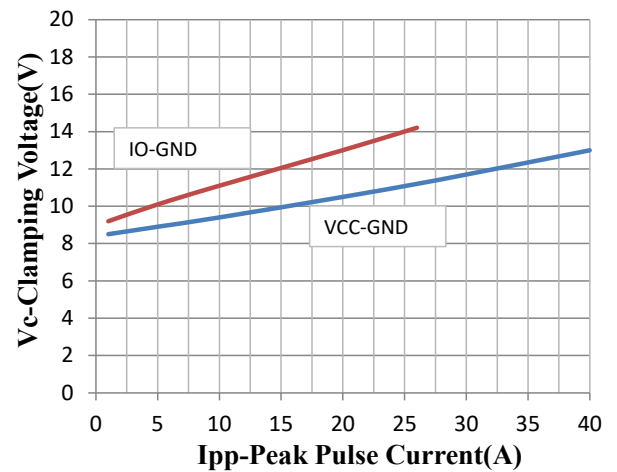
Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Reverse Working Voltage	V_{RWM}	Pin 5 to GND, I/O-GND			5.0	V
Breakdown Voltage	V_{BR}	$I_T = 1\text{mA}$ (Pin 5 to GND, I/O-GND)	6.5	8.5		V
Reverse Leakage Current	I_R	$V_{RWM} = 5.0\text{V}$ (IO-GND, IO-IO, VCC-GND)			0.2	μA
Forward Breakdown Voltage	V_F	$I_F = 15\text{mA}$, GND to Pin 5/IO		0.8	1.2	V
Clamping Voltage	V_C	$I_{PP} = 26\text{A}$ (8 x 20 μs pulse, I/O to GND)		14.0	17.0	V
Clamping Voltage	V_C	$I_{PP} = 40\text{A}$ (8 x 20 μs pulse, Pin 5 to GND)		13.0	16.0	V
Junction Capacitance	C_J	$V_{pin5} = 5\text{V}$, $I/O=0\text{V}$, $f = 1\text{MHz}$, I/O-GND		3.0	4.0	pF
Junction Capacitance	C_J	$V_{pin5} = 5\text{V}$, $I/O=0\text{V}$, $f = 1\text{MHz}$, I/O-I/O pins		1.8	2.0	pF



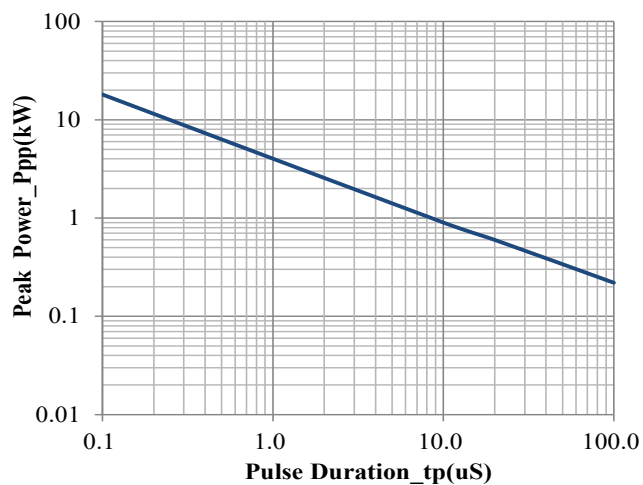
Typical Characteristics



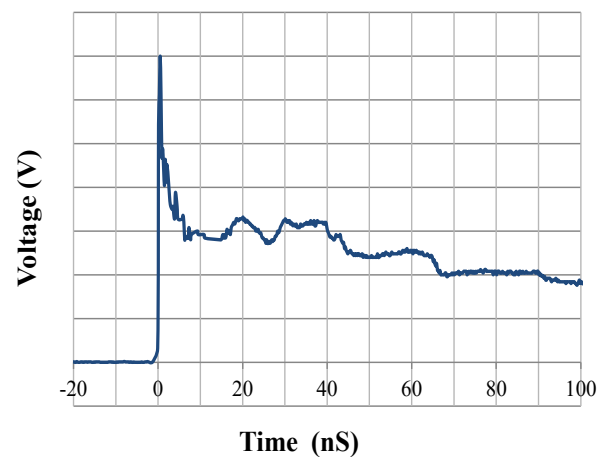
Junction Capacitance vs. Reverse Voltage



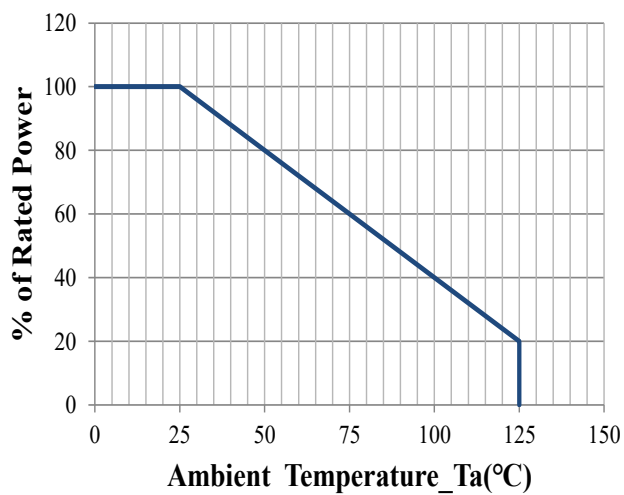
Clamping Voltage vs. Peak Pulse Current



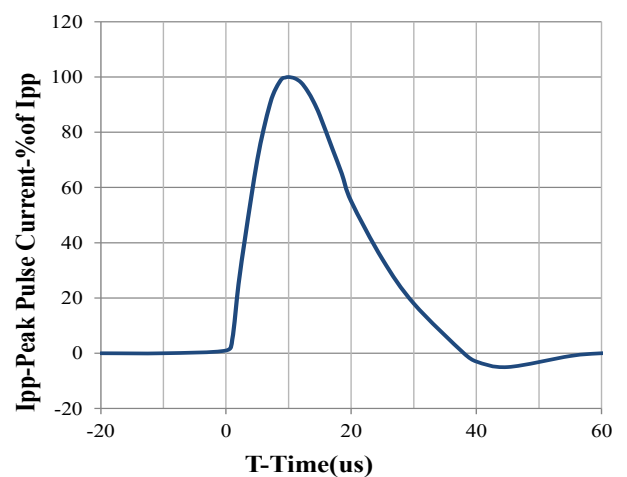
Peak Pulse Power vs. Pulse Time



IEC61000-4-2 Pulse Waveform



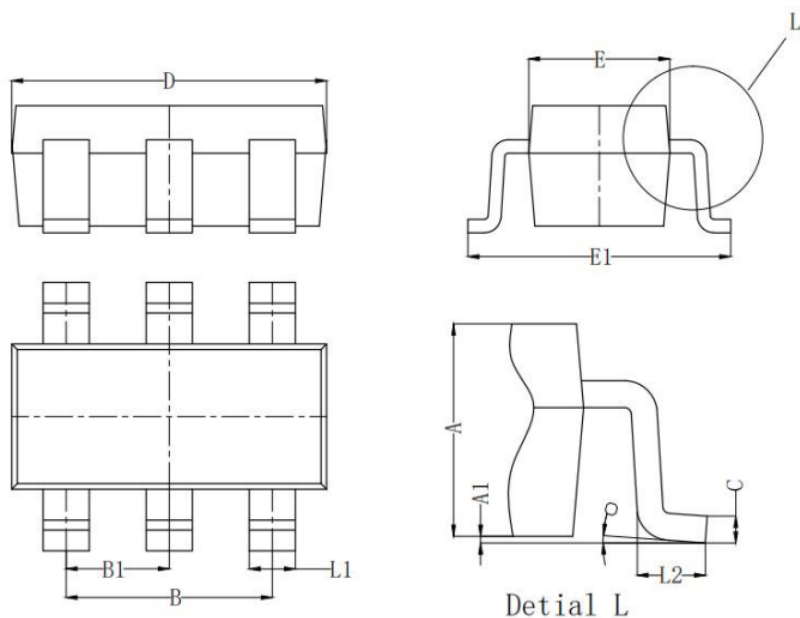
Power Derating Curve



8 X 20us Pulse Waveform



SOT-23-6L Outline Drawing



Symbol	Dim in mm		
	最小值	中间值	最大值
A	1.050	1.100	1.150
A1	0.000	0.050	0.100
B	1.800	1.900	2.000
B1	0.950 TYP		
C	0.100	0.150	0.200
D	2.820	2.920	3.020
E	1.500	1.600	1.700
E1	2.650	2.800	2.950
L1	0.300	0.400	0.500
L2	0.300	0.450	0.600
o	0°	4°	8°