



DW05R-AT-E ESD Protection Diode

Feature

- Uni-directional ESD protection of two lines
- 50Watts peak pulse power ($t_p = 8/20\mu s$ I/O-GND)
- Working voltage: 5V
- Junction Capacitance: 0.3pF(Typ I/O-I/O)
- Low clamping voltage
- Low leakage current
- AEC-Q101 qualified
- IEC 61000-4-2 $\pm 15kV$ contact $\pm 20kV$ air
- IEC 61000-4-5 (Lightning) 4A ($8/20\mu s$ I/O-GND)

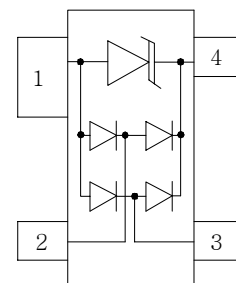
Application

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

Mechanical Data

- Package: SOT-143
- Molding compound flammability rating: UL 94V-0
- RoHS/WEEE Compliant

Schematic & PIN Configuration



Ordering Information

Part Number	Package	Marking	QTY per Reel	Reel Size
DW05R-AT-E	SOT-143		3000 pcs	7 inches



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

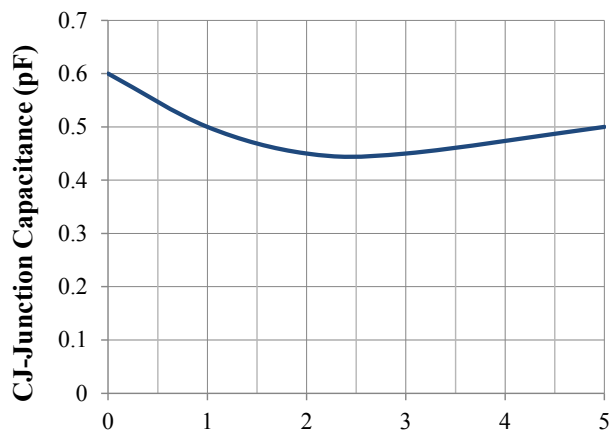
Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20 μs , I/O-GND)	P_{PK}	50	W
Peak Pulse Power (8/20 μs , Vcc-GND)	P_{PK}	240	W
Peak Pulse Current (8/20 μs , I/O-GND)	I_{PP}	4	A
Peak Pulse Current (8/20 μs , Vcc-GND)	I_{PP}	15	A
ESD per IEC 61000-4-2 (Air) ESD per IEC 61000-4-2 (Contact)	V_{ESD}, V_{DD}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

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

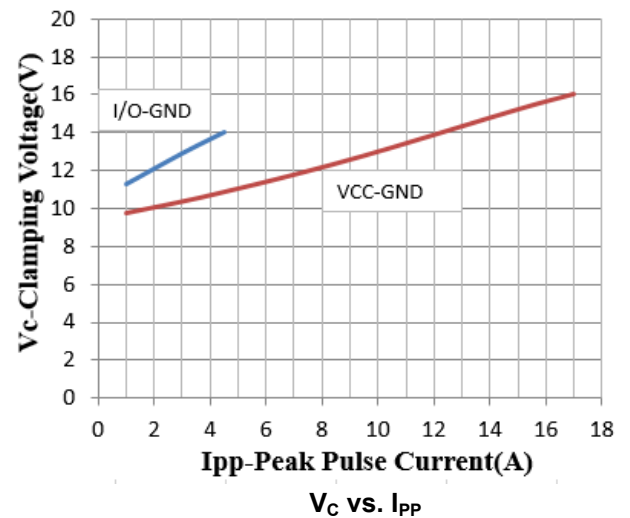
Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Reverse Working Voltage	V_{RWM}	I/O-GND			5	V
Breakdown Voltage	V_{BR}	$I_T = 1\text{mA}$, I/O-GND	6	7.0	9	V
Breakdown Voltage	V_{BR}	$I_T = 1\text{mA}$, VCC-GND	6	7.2	9	
Reverse Leakage Current	I_R	$V_{RWM} = 5\text{V}$			1	$\times\text{A}$
Clamping Voltage	V_C	$I_{PP} = 4\text{A}$ (8 x 20 $\times\text{s}$ pulse), I/O-GND		14.0	16.0	V
Clamping Voltage	V_C	$I_{PP} = 15\text{A}$ (8 x 20 $\times\text{s}$ pulse), VCC-GND		15.0	17.0	V
Junction Capacitance	C_J	$V_R = 0\text{V}$, $f = 1\text{MHz}$, I/O-I/O		0.3	0.5	pF
Junction Capacitance	C_J	$V_R = 0\text{V}$, $f = 1\text{MHz}$, I/O-GND		0.6	0.9	pF



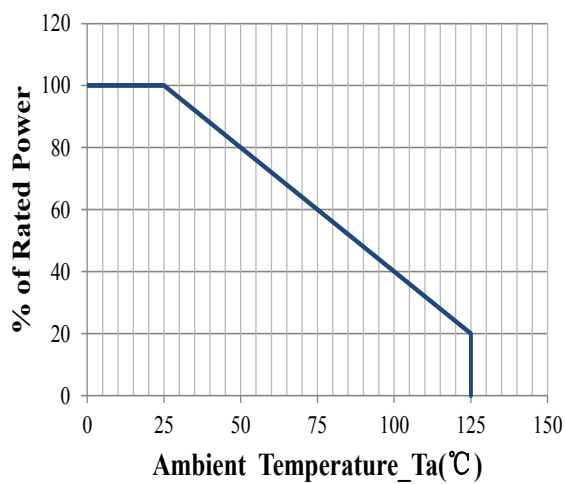
Typical Characteristics



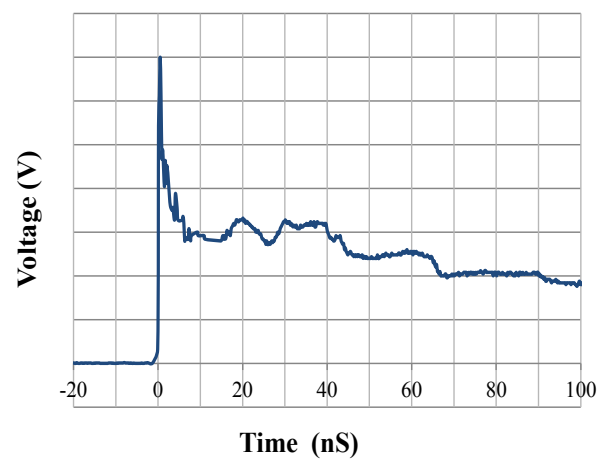
Capacitance Characteristics



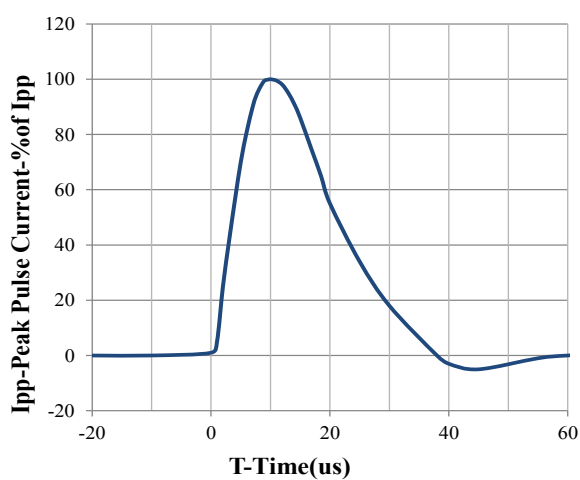
V_C vs. I_{PP}



Power Derating Curve



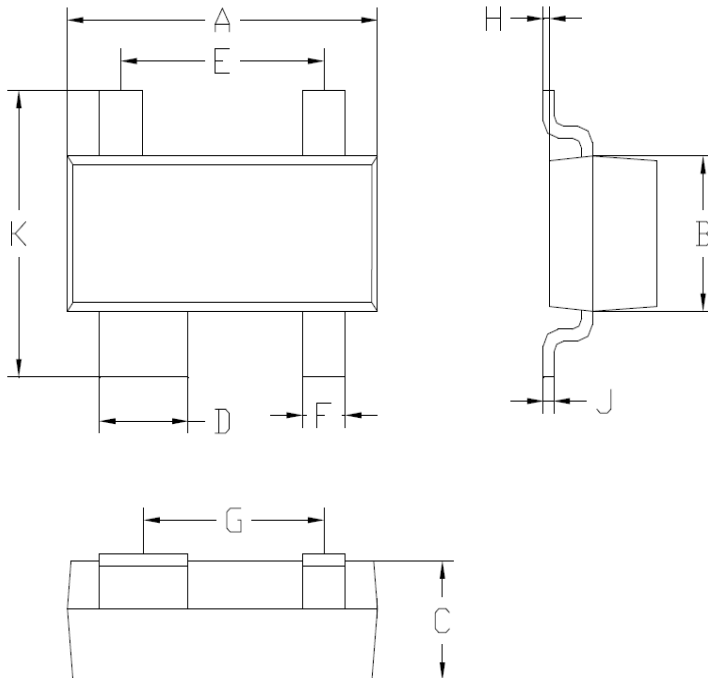
IEC61000-4-2 Pulse Waveform



8 X 20us Pulse Waveform



SOT-143 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		