

DW05M2T-B-01-S ESD Protection Diode

Feature

- Bi-directional ESD protection of two lines
- 450 Watts peak pulse power ($t_p = 8/20\mu s$)
- Working voltage: 5V
- Junction capacitance: 60pF(Typ)
- Ultra low leakage: nA level
- Low clamping voltage
- IEC 61000-4-2 $\pm 30kV$ contact $\pm 30kV$ air
- IEC61000-4-4 (EFT) 80A (5/50ns)
- IEC 61000-4-5 (Lightning) 30A (8/20 μs)

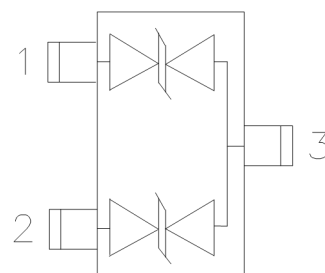
Application

- Cellular Handsets and Accessories
- Notebooks and Handhelds
- Portable Instrumentation
- Set Top Box
- Industrial Controls
- Server and Desktop PC

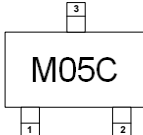
Mechanical Data

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

Schematic & PIN Configuration



Ordering Information

Part Number	Package	Marking	Packing	Reel Size
DW05M2T-B-01-S	SOT-23		3000 Tape & Reel	7 inches

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

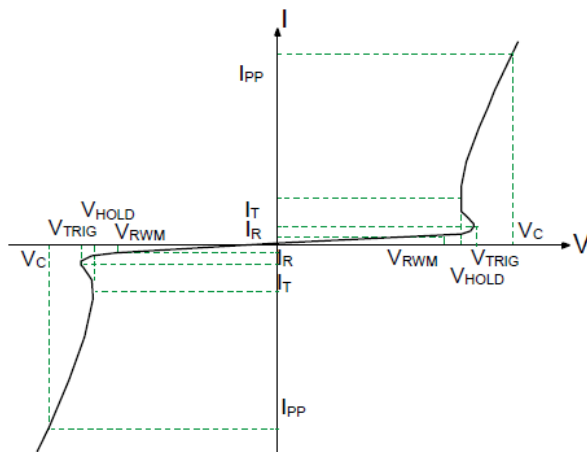
Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20 μs)	Ppk	450	W
Peak Pulse Current (8/20 μs)	I _{PP}	30	A
ESD per IEC 61000-4-2 (Air) ESD per IEC 61000-4-2 (Contact)	V _{ESD}	± 30 ± 30	kV
Operating Temperature Range	T _J	-55 to +125	°C
Storage Temperature Range	T _{stg}	-55 to +150	°C

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

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Reverse Working Voltage	V _{RWM}				5.0	V
Breakdown Voltage	V _{BR}	I _T = 1mA	6.0			V
Reverse Leakage Current	I _R	V _{RWM} = 5.0V			1.0	μA
Clamping Voltage	V _C	I _{PP} = 1A (8 x 20 μs pulse)			8.0	V
Clamping Voltage	V _C	I _{PP} = 30A (8 x 20 μs pulse)		12.5	15.0	V
Junction Capacitance	C _J	V _R = 0V, f = 1MHz, IO-GND		60	100	pF

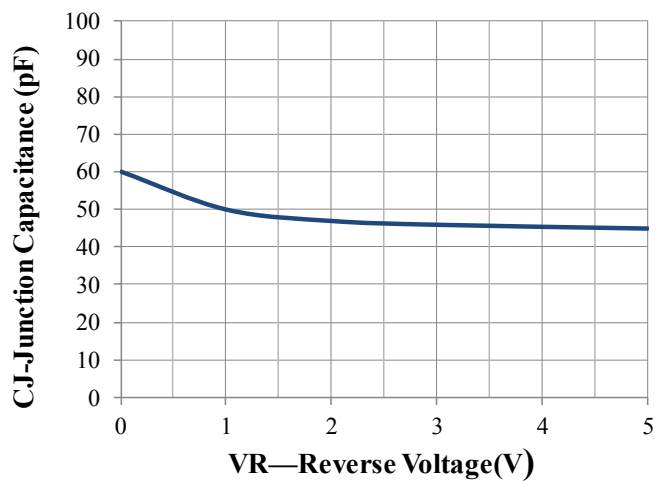
Electrical Parameters

Symbol	Parameter
I _T	Test Current
I _{PP}	Maximum Reverse Peak Pulse Current
V _C	Clamping Voltage @I _C

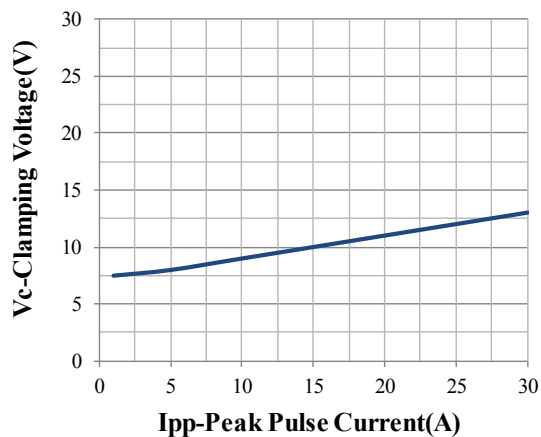




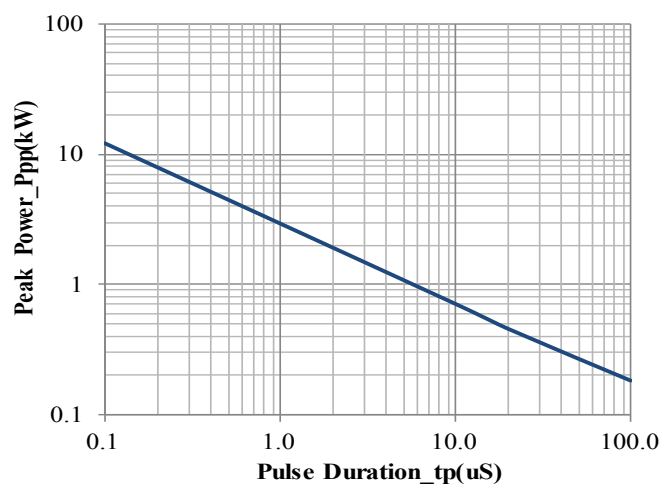
Typical Characteristic ($T_A = 25^\circ\text{C}$ unless otherwise noted)



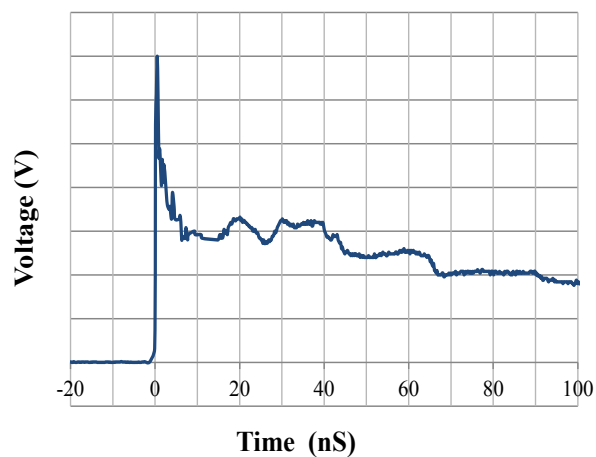
Junction Capacitance vs. Reverse Voltage



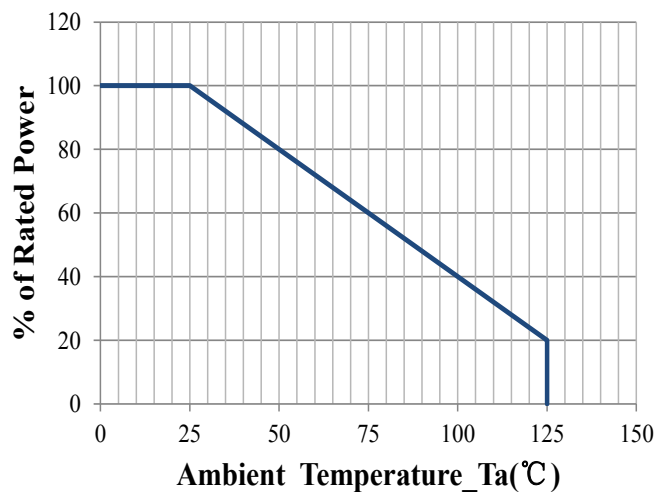
Clamping Voltage vs. Peak Pulse Current



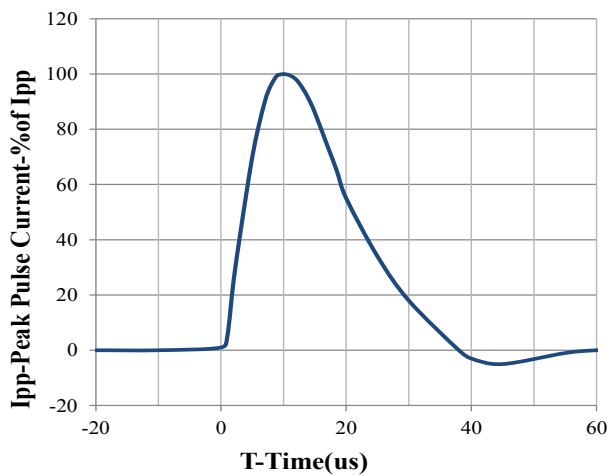
Peak Pulse Power vs. Pulse Time



IEC61000-4-2 Pulse Waveform



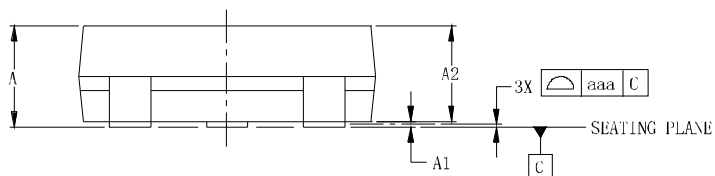
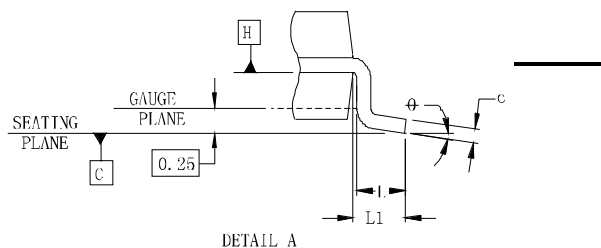
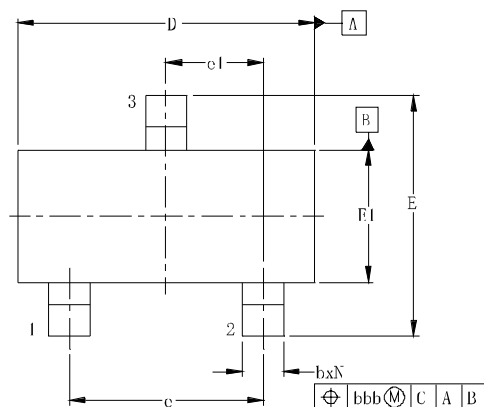
Power Derating Curve



8 X 20us Pulse Waveform



Outline Drawing – SOT-23



DIM	DIMENSIONS					
	INCHES			MILLIMETERS		
	MTN	NOM	MAX	MTN	NOM	MAX
A	.035	—	.044	0.89	—	1.12
A1	.000	—	.004	0.01	—	0.10
A2	.035	.037	.040	0.88	0.95	1.02
b	.012	—	.020	0.30	—	0.51
c	.003	—	.007	0.08	—	0.18
D	.110	.111	.120	2.80	2.90	3.04
E	.082	.093	.104	2.10	2.37	2.64
F1	.047	.051	.055	1.20	1.30	1.40
e	.075			1.90 BSC		
e1	.037			0.95 BSC		
L	.015	.020	.024	0.40	0.50	0.60
L1	.022			(0.55)		
N	3			3		
theta	0°	—	8°	0°	—	8°
aaa	.001			0.10		
bbb	.008			0.20		