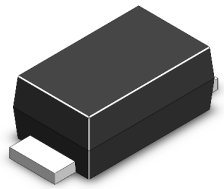
Transient Voltage Suppressors

ESD92D series

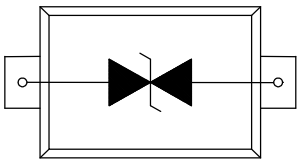
Description:

The ESD92D05C is designed to protect voltage sensitive components from ESD and transient voltage events. Excellent clamping capability, low leakage, and fast response time,make these parts ideal for ESD protection on designs where board space is at a premium. Because of its small size, it is suited for use in cellular phones, MP3 players, digital cameras and many other portable applications where board space is at a premium.

Appearance:



Functional Diagram:



Bidirectional

Features:

- Bidirectional Configurations
- 80 Watts Peak Pulse Power per Line (tp = 8/20μs)
- Protects one I/O or power line
- Low Clamping Voltage
- Low Leakage Current
- Response Time is Typically < 1 ns
- **IEC-61000-4-2 ESD 15KV(Air), 8KV (Contact)**
- **IEC61000-4-4 (EFT): 40A (5/50ns)**

Packaging :

Part Number	Component Package	Quantity	Packaging
ESD92D05C	SOD-923	8K PCS	Reel

Mechanical Characteristics :

- JEDEC DFN-2L package (0402 size)
- Molding compound flammability rating: UL 94V-0
- Marking :Marking Code
- RoHS Compliant

Applications:

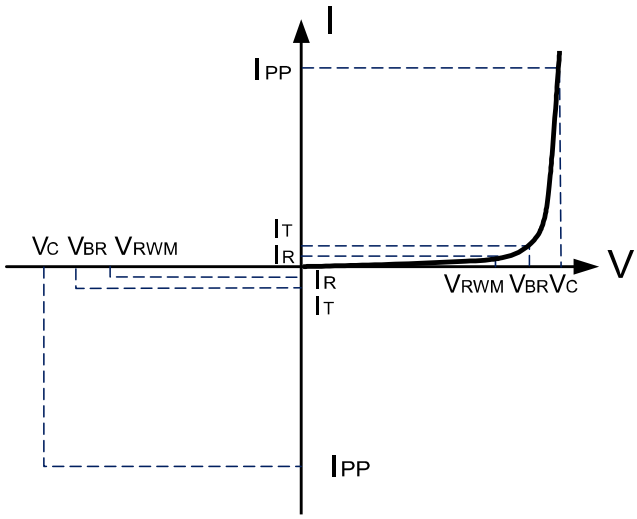
- Cellular Handsets & Accessories
- Personal Digital Assistants (PDAs)
- Notebooks & Handhelds
- Portable Instrumentation
- Digital Cameras
- MP3 Players

Maximum Ratings (TA= 25 °C unless otherwise noted)

Parameter		Symbol	Value	Unit
Peak Pulse Power (t_p = 8/20μs)		P_{PP}	80	W
ESD Voltage(HBM Waveform per IEC 61000-4-2)	Air Discharge	V_{ESD}	±15	KV
	Contact Discharge		±8	
Operating Temperature		T_J	-55 to + 125	°C
Storage Temperature		T_{stg}	-55 to +150	°C

Electrical Parameters

V_{RWM}	Working Peak Reverse Voltage
I_T	Test Current
V_{BR}	Breakdown Voltage @ I_T
V_C	Clamping Voltage @ I_{PP}
I_{PP}	Maximum Reverse Peak Pulse Current
I_R	Maximum Reverse Leakage Current @ V_{RWM}
I_F	Forward Current
V_F	Forward Voltage @ I_F



Electrical Characteristics (TA= 25 °C unless otherwise noted)

ESD92D05C

Parameter	Symbol	Conditions	Minimum	Typical	Maximum	Units
Reverse Stand-Off Voltage	V_{RWM}		-	-	5.0	V
Reverse Breakdown Voltage	V_{BR}	I_T=1mA	6.0	-	-	V
Reverse Leakage Current	I_R	V_{RWM}=5V, T=25℃	-	-	1.0	uA
Peak Pulse Current	I_{PP}	t_p =8/20μs	-	-	4.0	A
Clamping Voltage	V_C	I_{PP}=1A, t_p=8/20μs	-	-	9.5	V
		I_{PP}= 4A, t_p=8/20μs	-	13.5	15	V
Junction Capacitance	C_j	V_R =0V, f =1MHz	-	-	10	pF

Typical Characteristics

Figure 1: Peak Pulse Power Vs Pulse Time

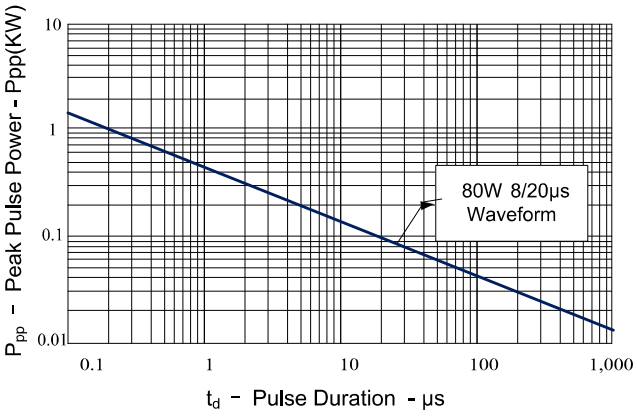


Figure 2: Pulse Derating Curve

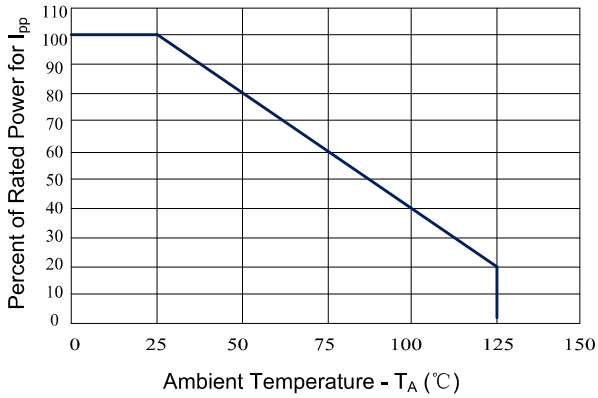


Figure 3: Clamping Voltage vs. Peak Pulse Current

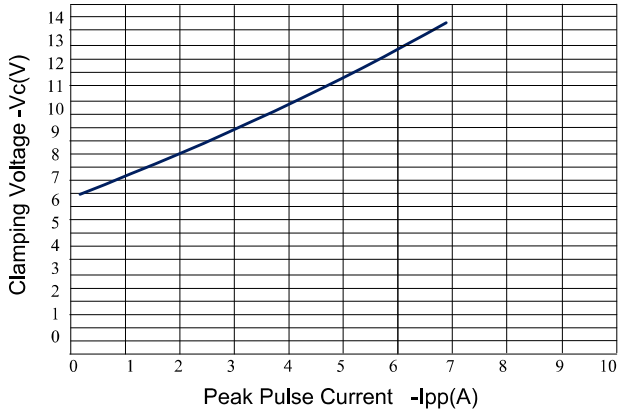


Figure 4: Normalized Junction Capacitance vs. Reverse Voltage

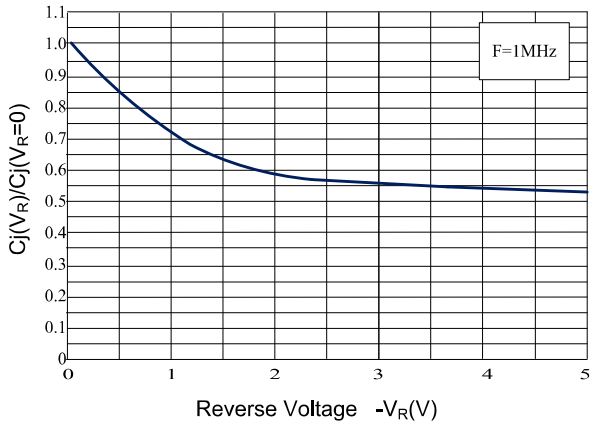


Figure 5: Pulse Waveform

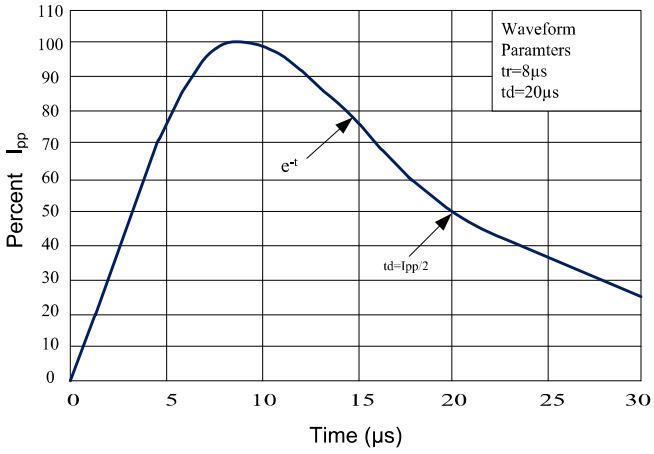
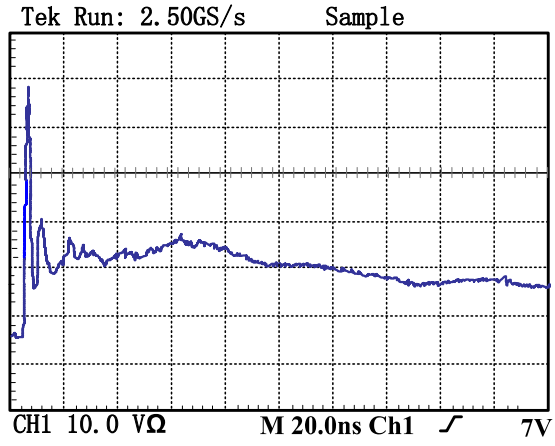
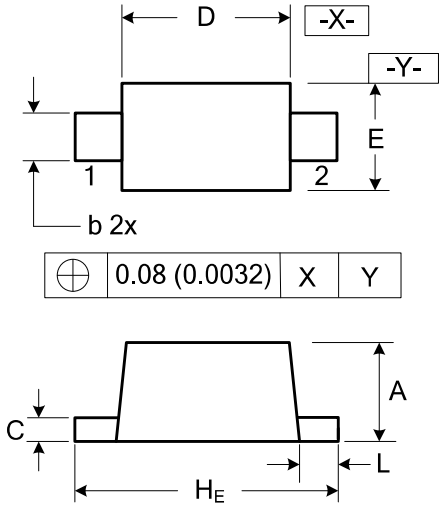


Figure 6: ESD Clamping(8kV Contact per IEC 61000-4-2)



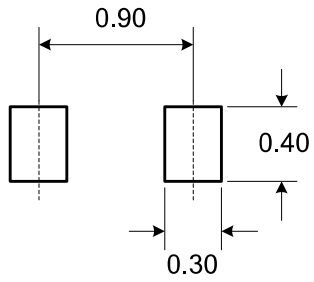
Outline Drawing



SOD-882/DFN1006

Symbol	Inches		Millimeters	
	Min.	Max.	Min.	Max.
A	0.014	0.017	0.36	0.43
b	0.006	0.010	0.15	0.25
C	0.003	0.007	0.07	0.17
D	0.030	0.033	0.75	0.85
E	0.026	0.028	0.55	0.65
H_E	0.037	0.041	0.95	1.05
L	0.002	0.006	0.05	0.15

Soldering Footprint



DIMENSIONS: MILLIMETERS

Notes

1. DIMENSIONING AND TOLERANCING PER ANSI
2. CONTROLLING DIMENSION: MILLIMETERS.
3. MAXIMUM LEAD THICKNESS INCLUDES LEAD FINISH THICKNESS. MINIMUM LEAD THICKNESS IS THE MINIMUM THICKNESS OF BASE MATERIAL