Elektronische Bauelemente

SD12

300 W, 12V

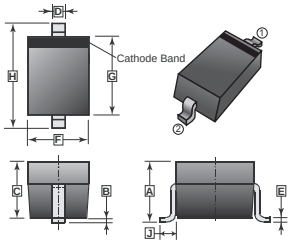
Plasetic Encapsulate ESD Protection Diodes

RoHS Compliant Product
A suffix of "-C" specifies halogen & lead-free

DESCRIPTION

The SD12 is designed to protect voltage sensitive components from ESD. Excellent clamping capability, low leakage, and fast response time provide best in class protection on designs that are exposed to ESD. 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.

SOD - 323



REF.	Millimeter		REF.	Millimeter	
	Min.	Max.		Min.	Max.
A	1.05 REF.		E	0.080	0.180
B	0.20 REF.		F	1.15	1.45
C	0.80	1.00	G	1.60	1.80
D	0.25	0.40	H	2.30	2.70

APPLICATIONS

- Stand-off voltage: 12V
- Low leakage
- Response time is typically < 1 ns
- ESD rating of class 3 (>16kV) per human body model
- IEC61000-4-2 level 4 ESD protection
- These are Pb-Free devices

DEVICE MARKING: ZC, 6U

ABSOLUTE RATINGS (T_A = 25°C)

RATING		SYMBOL	VALUE	UNIT
IEC 61000-4-2 (ESD)	Air		±15	KV
	Contact		±8.0	
ESD voltage	per human body model		30	KV
Total power dissipation on FR-5 Board (Note 1)		P_D	200	mW
Thermal Resistance Junction−to−Ambient		$R_{\theta JA}$	625	°C / W
Junction and Storage Temperature Range		T_J, T_{STG}	-55 ~ +150	°C
Lead Solder Temperature – Maximum (10 Second Duration)		T_L	260	°C

Stresses exceeding Maximum Ratings may damage the device. Maximum Ratings are stress ratings only. Functional operation above the recommended. Operating Conditions is not implied. Extended exposure to stresses above the Recommended Operating Conditions may affect device reliability.

1. FR-5 = 1.0 x 0.75 x 0.62 in.

ELECTRICAL CHARACTERISTICS

(Ratings at 25°C ambient temperature unless otherwise specified. V_F = 0.9V max at I_F = 10mA for all types)

PARAMETER		SYMBOL	RATING	UNIT
Working Peak Reverse Voltage (Max.)		V_{RWM}	12	V
Maximum Reverse Leakage Current @ V_{RWM}(Max.)		I_R	1.0	μA
Breakdown Voltage @ I_T	Max.	V_{BR}	15.75	V
	Min.		13.3	V
Test Current		I_T	1.0	mA
Clamping Voltage @ I_{PP}=5A		V_C	22	V
Maximum Reverse Peak Pulse Current (Max.) *		I_{PP}	12	A
Clamping Voltage @ I_{PP} (Max.) *		V_C	33	V
Peak Power Dissipation *		P_{PK}	300	W
Max. Capacitance @ V_R =0 and f =1MHz (Typ.)		C	150	pF

+Surge current waveform per Figure 1.

2. V_{BR} is measured with a pulse test current I_T at an ambient temperature of 25°C

RATINGS AND CHARACTERISTICS CURVES

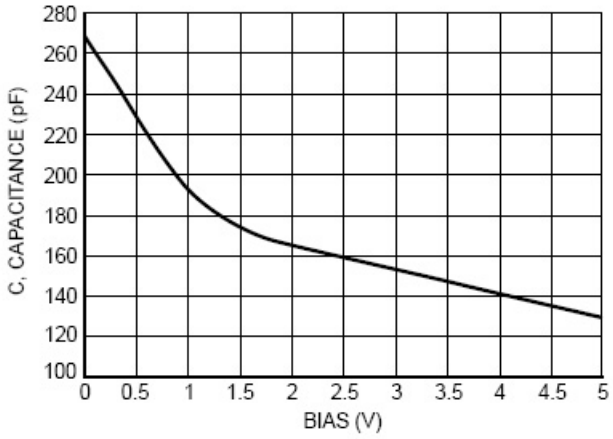


Figure 1. SD05 Typical Capacitance versus Bias Voltage

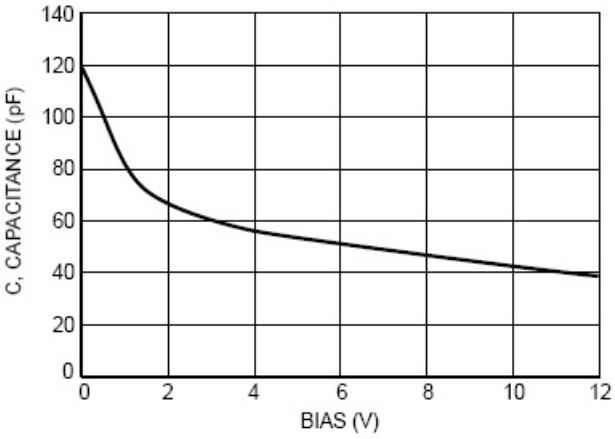


Figure 2. SD12 Typical Capacitance versus Bias Voltage

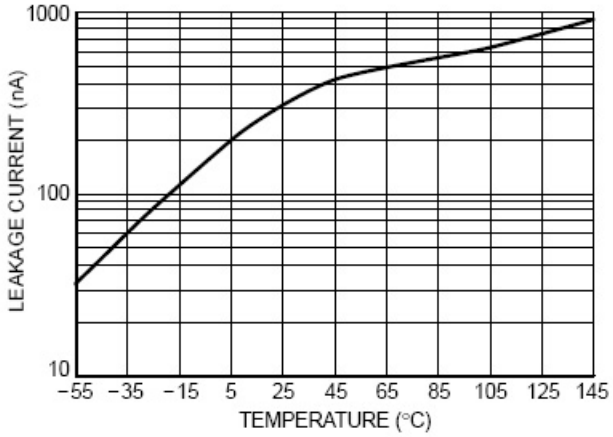


Figure 3. SD05 Typical Leakage Current versus Temperature

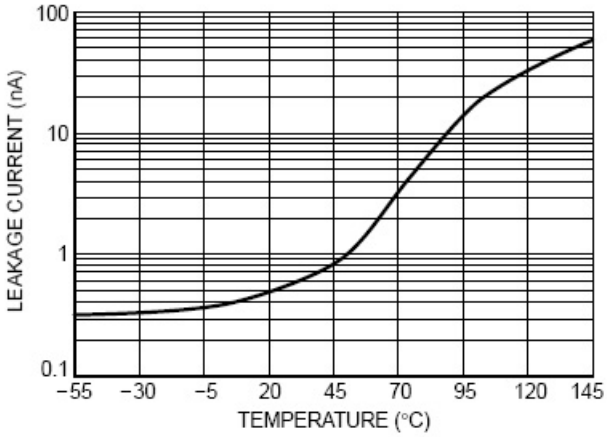


Figure 4. SD12 Typical Leakage Current versus Temperature

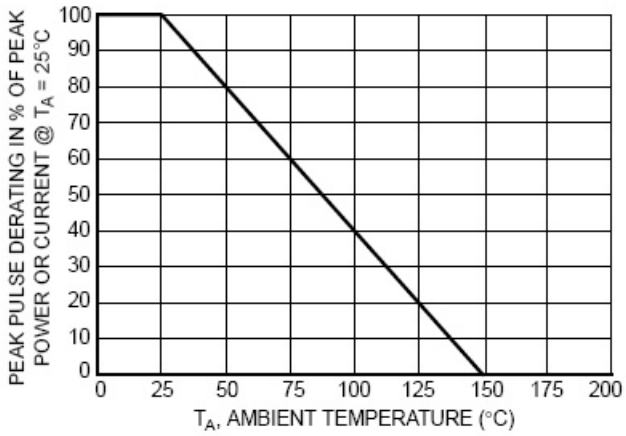


Figure 5. Pulse Derating Curve

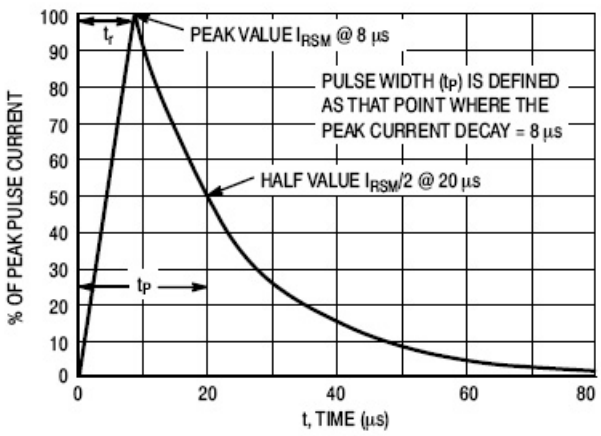
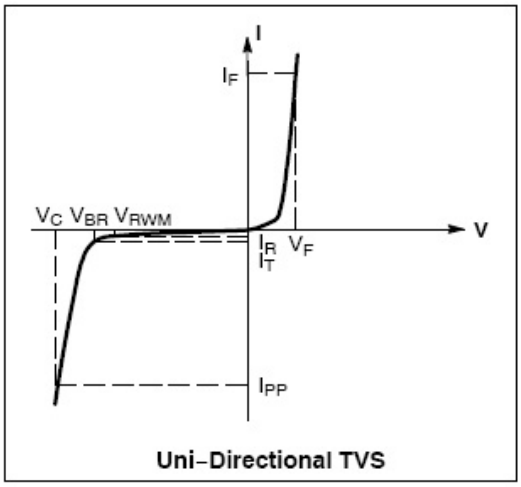


Figure 6. 8 × 20 µs Pulse Waveform

RATINGS AND CHARACTERISTICS CURVES



Uni–Directional TVS