



**ESD3V3D3**  
**ESD5V0D3**  
**ESD12VD3**

## SOD-323 Plastic-Encapsulate Diodes

**3.3V~12Volts**

**Uni-direction  
ESD Protection  
Devices**

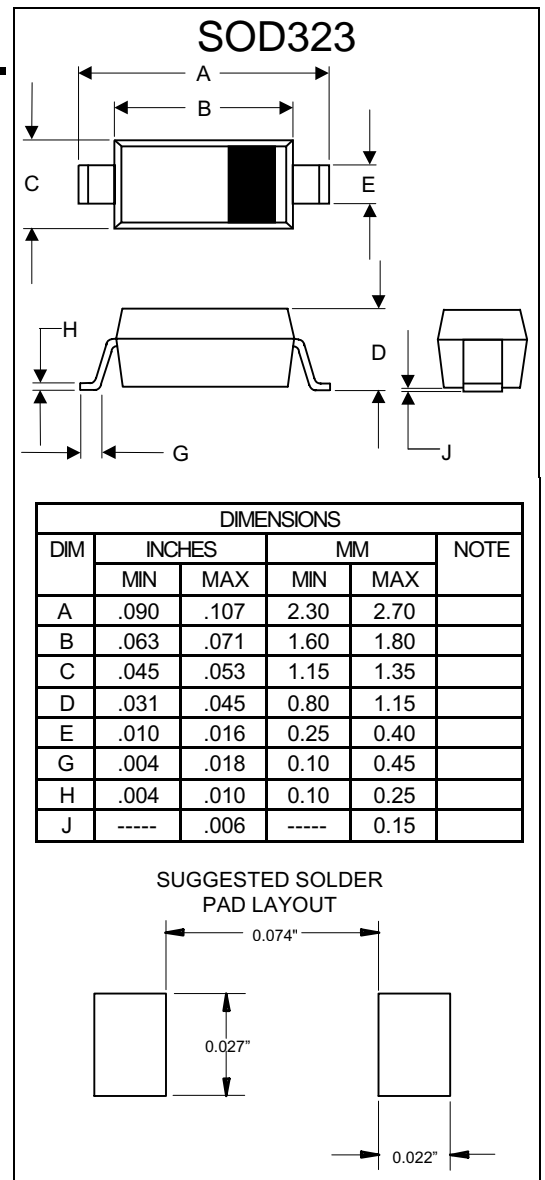
### Features

- Halogen free available upon request by adding suffix "-HF"
- For sensitive ESD protection
- Excellent clamping capability
- Low leakage
- ESD rating of class 3(>16KV)per Human Body Mode
- For space saving application
- Fast response ,response time less than 1ns.
- Epoxy meets UL 94 V-0 flammability rating
- Moisture Sensitivity Level 1

### Maximum Ratings

- Operating Junction & Storage Temperature: -55°C to +150°C
- Maximum Thermal Resistance: 625°C/W Junction To Ambient

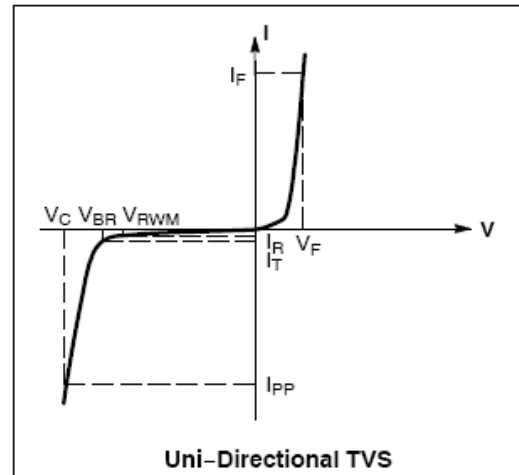
Parameter	Symbol	Limits	unit
IEC61000-4-2(ESD) Air Contact		±15 ±8	KV
ESD Voltage per human body mode		30	KV
Power Dissipation	Pd	200	mw



# SOD-323 Plastic-Encapsulate Diodes

**ELECTRICAL CHARACTERISTICS** ( $T_A = 25^\circ\text{C}$  unless otherwise noted)

Symbol	Parameter
$I_{PP}$	Maximum Reverse Peak Pulse Current
$V_C$	Clamping Voltage @ $I_{PP}$
$V_{RWM}$	Working Peak Reverse Voltage
$I_R$	Maximum Reverse Leakage Current @ $V_{RWM}$
$V_{BR}$	Breakdown Voltage @ $I_T$
$I_T$	Test Current
$I_F$	Forward Current
$V_F$	Forward Voltage @ $I_F$
$P_{pk}$	Peak Power Dissipation
C	Max. Capacitance @ $V_R=0$ and $f=1\text{MHz}$



**ELECTRICAL CHARACTERISTICS** ( $T_A = 25^\circ\text{C}$  unless otherwise noted,  $V_F = 0.9\text{ V Max. @ } I_F = 10\text{mA}$  for all types)

Device*	Device Marking	$V_{RWM}$	$I_R (\mu\text{A})$	$V_{BR} (\text{V})$		$I_T$	$V_C$	$I_{PP}(\text{A})^+$	$V_C (\text{V})$	$P_{pk}^+$	C
		(V)	@ $V_{RWM}$	@ $I_T(\text{Note 2})$	@ $I_{PP} = 5\text{ A}$		@ $\text{Max } I_{PP}^+$		(W)		
		Max	Max	Min	Max	mA	V	Max	Max	Max	Typ
ESD3V3D3	YU	3.3	10	5.0	5.9	1.0	9.3	15	13.5	350	450
ESD5V0D3	ZA	5.0	10	6.2	7.3	1.0	9.8	15	15.5	350	350
ESD12VD3	ZC	12	1.0	13.3	15.75	1.0	22	12	33	350	150

+Surge current waveform per Figure 6.

2.  $V_{BR}$  is measured with a pulse test current  $I_T$  at an ambient temperature of  $25^\circ\text{C}$ .

## Ordering Information :

Device	Packing
Part Number-TP	Tape&Reel: 3Kpcs/Reel

Note : Adding "-HF" suffix for halogen free, eg. Part Number-TP-HF



## TYPICAL CHARACTERISTICS

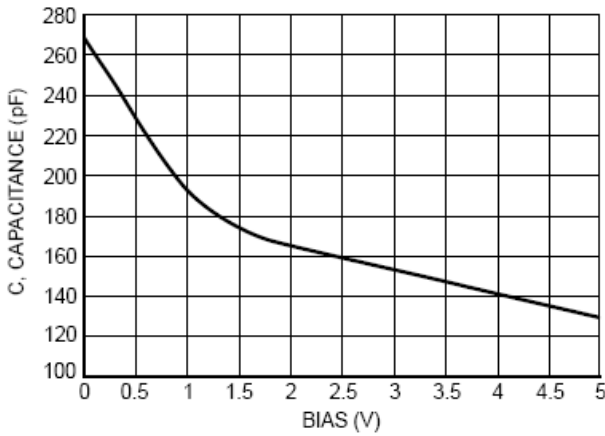


Figure 1. SD05 Typical Capacitance versus Bias Voltage

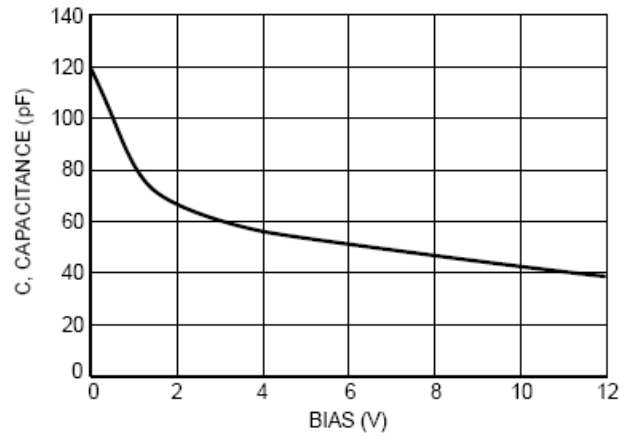


Figure 2. SD12 Typical Capacitance versus Bias Voltage

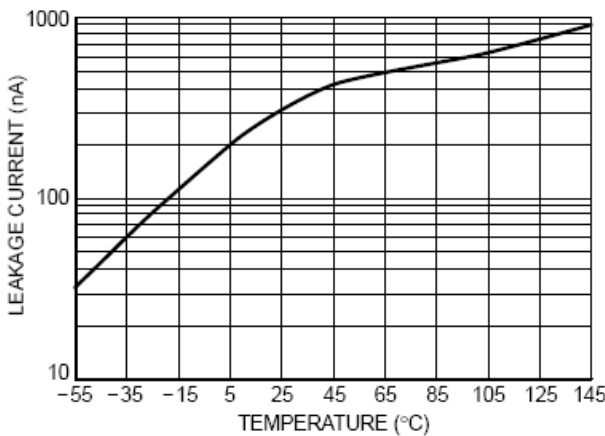


Figure 3. SD05 Typical Leakage Current versus Temperature

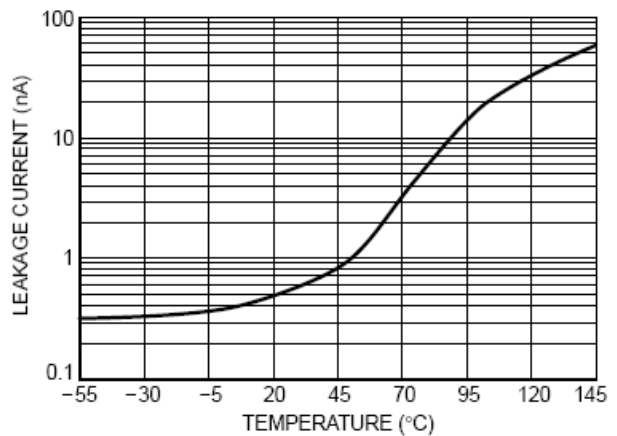


Figure 4. SD12 Typical Leakage Current versus Temperature

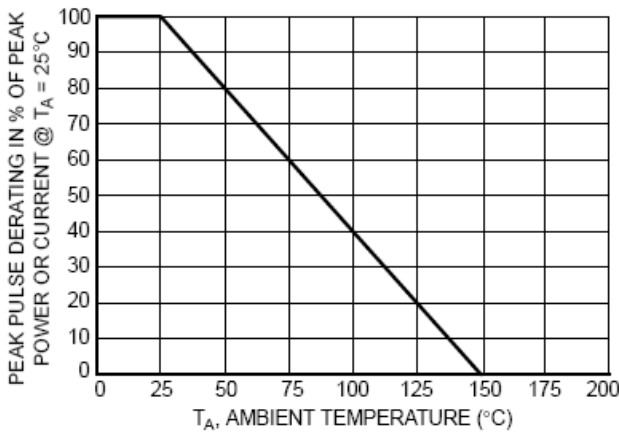


Figure 5. Pulse Derating Curve

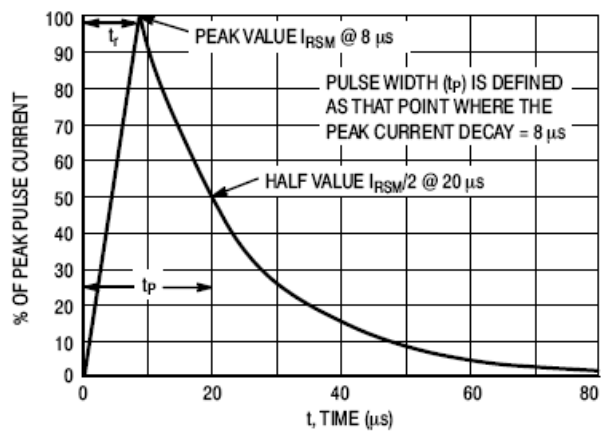


Figure 6. 8 × 20  $\mu s$  Pulse Waveform