

SOD-323 Plastic-Encapsulate ESD Protection Diodes

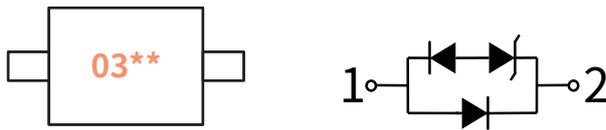
● Features

- Low leakage current
- SOD-323 surface mount package
- IEC 61000-4-2 (ESD Air): $\pm 30\text{kV}$
- IEC 61000-4-2 (ESD Contact): $\pm 30\text{kV}$
- IEC 61000-4-5 (Lightning 8/20 μs): 20A

● Applications

- LED Lighting Modules
- RS232/RS485
- CAN and LIN Bus
- Portable Instrumentation
- General Purpose I/O

● Function Diagram



Reverse Working Voltage
3.3V Max.
Low capacitance
0.8pF(Max.)



● Maximum Ratings (Ta=25°C Unless otherwise specified)

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
V _{ESD}	Electrostatic Discharge Voltage	ESD per IEC 61000-4-2(Air)	± 30	KV
		ESD per IEC 61000-4-2(Contact)	± 30	KV
P _{PP}	Peak Pulse Power	tp = 8/20 μs	240	W
I _{PP}	Rated Peak Pulse Current	tp = 8/20 μs	20	A
T _J	Operating JunctionTemperature Range	—	-55 to +125	°C
T _{STG}	Operating JunctionTemperature Range	—	-55 to +125	°C

● Electrical Parameter

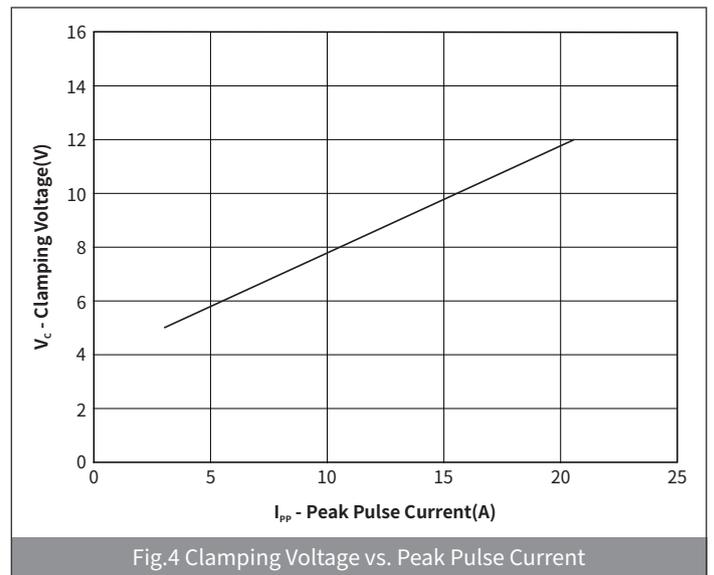
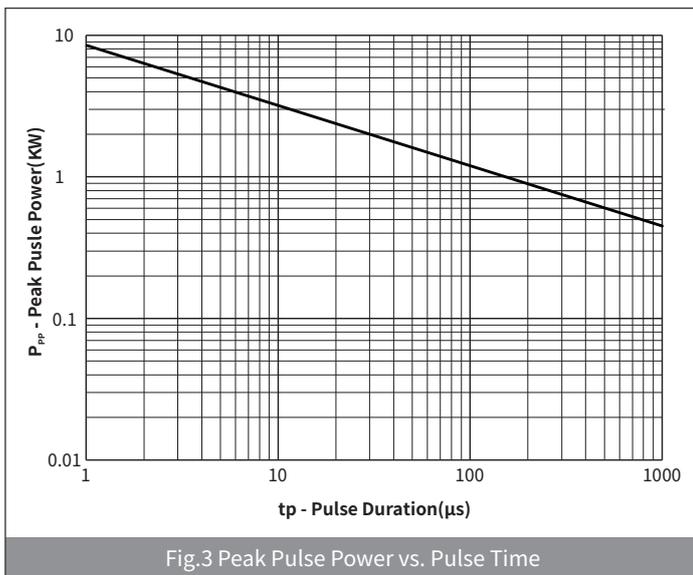
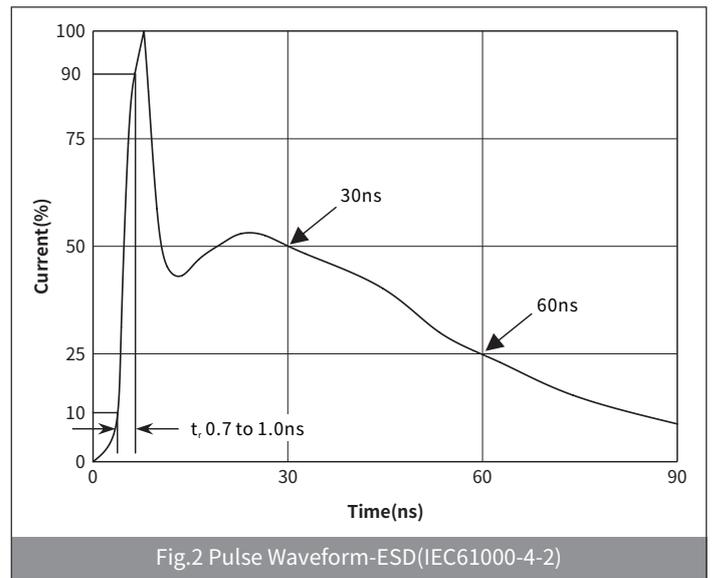
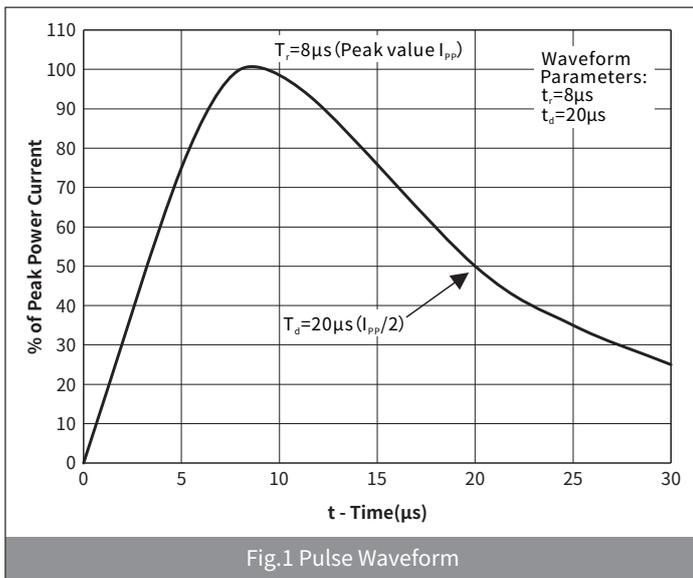
SYMBOL	PARAMETER
V _C	Clamping Voltage @ I _{PP}
V _{BR}	Breakdown Voltage @ I _T
I _{PP}	Peak Pulse Current
I _T	Test Current
I _R	Reverse Leakage Current @ VRWM
V _{RWM}	Peak Reverse Working Voltage
P _{PP}	Peak Pulse Power Dissipation
C _J	Junction Capacitance @ V _R =0V,f=1MHz
I _F	Forward Current
V _F	Forward Voltage @I _F

The graph shows the current-voltage (I-V) characteristics of the diode. The vertical axis is current (I) and the horizontal axis is voltage (V). The curve shows a sharp increase in current at the forward voltage (V_F) and a sharp decrease in current at the breakdown voltage (V_{BR}). Key points on the graph include V_C (clamping voltage), V_{BR} (breakdown voltage), V_{SRM} (peak reverse working voltage), I_R (reverse leakage current), V (forward voltage), and I_F (forward current).

● **Electrical Characteristics** (Ta=25°C Unless otherwise specified)

PARAMETER	SYMBOL	CONDITION	Min	Typ	Max	UNIT
Peak Reverse Working Voltage	V_{RWM}	$T_a=25^{\circ}C$	—	—	3.3	V
Breakdown Voltage	V_{BR}	$I_R=1.0mA, T_a=25^{\circ}C$	6	—	—	V
Reverse Leakage Current	I_R	$V_R=3.3V, T_a=25^{\circ}C$	—	—	0.1	μA
Clamping Voltage	V_C	$I_{PP}=20.0A, t_p=8/20\mu s$	—	12	—	V
Junction Capacitance	C_J	$V_R=0V, f=1MHz$	—	0.8	—	pF

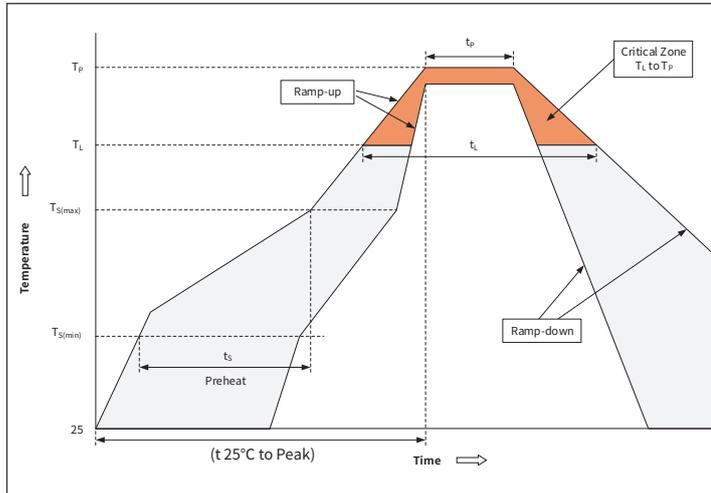
● **Ratings And Characteristics Curves** (Ta=25°C Unless otherwise specified)



Ordering Information

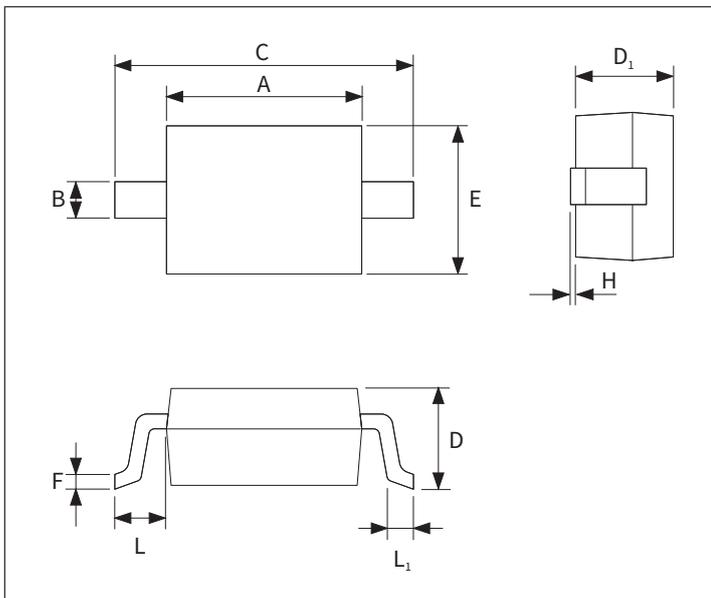
PREFERRED P/N	PACKAGE	SIZE(mm)	DELIVERY MODE	MPQ(PCS)
H3V3LD3U	SOD-323	2.55×1.30×0.95	7" REEL	3000

Recommended Soldering Conditions



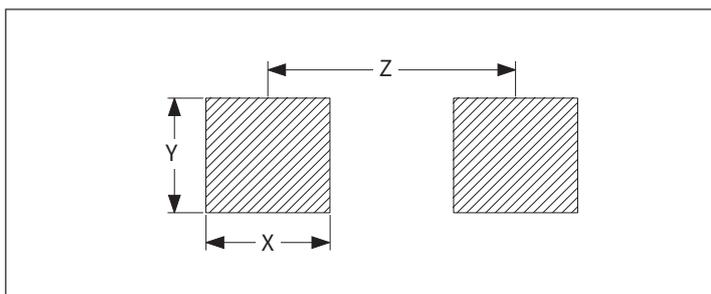
	Profile Feature	Pb-Free Assembly
Pre-heat	Temperature Min ($T_{S(min)}$)	+150°C
	Temperature Max ($T_{S(max)}$)	+200°C
	Time (Min to Max) (t_s)	60-180 secs.
Average ramp up rate (Liquid us Temp (T_L) to peak)		3°C/sec. Max
$T_{S(max)}$ to T_L - Ramp-up Rate		3°C/sec. Max
Reflow	Temperature(T_L)(Liquid us)	+217°C
	Temperature(t_L)	60-150 secs.
Peak Temp (T_P)		+260(+0/-5)°C
Time within 5°C of actual Peak Temp (t_p)		20-40secs
Ramp-down Rate		6°C/sec. Max
Time 25°C to Peak Temp (T_P)		8 min. Max
Do not exceed		+260°C

Package Outline Dimensions (SOD-323)



Symbol	Dimensions			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	1.60	1.80	0.063	0.071
B	0.25	0.40	0.010	0.016
C	2.30	2.80	0.091	0.110
D	0.80	1.10	0.031	0.043
D ₁	0.80	0.90	0.031	0.035
E	1.20	1.40	0.047	0.055
F	0.08	0.18	0.003	0.007
L	0.475REF		0.019REF	
L ₁	0.25	0.40	0.010	0.016
H	-	0.14	-	0.006

Suggested Pad Layout



Symbol	Dimensions			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
X	0.65	0.75	0.026	0.030
Y	0.65	0.75	0.026	0.030
Z	2.10	2.20	0.084	0.088