

SOD-323 Plastic-Encapsulate ESD Protection Diodes

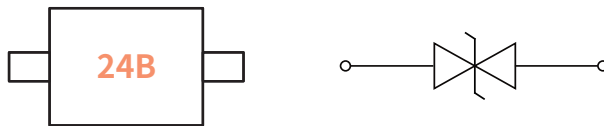
Features

- 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): 6A

Applications

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

Function Diagram



Reverse Working Voltage
24V Max.
Normal capacitance
30pF(Max.)

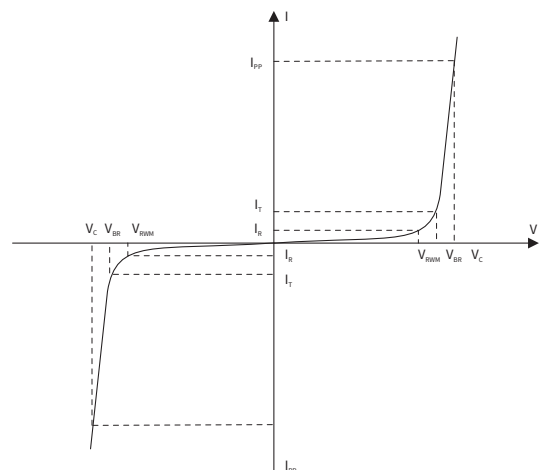


Maximum Ratings (Ta=25°C Unless otherwise specified)

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	300	W
I _{PP}	Rated Peak Pulse Current	tp = 8/20 μs	6.0	A
T _J	Operating JunctionTemperature Range	—	-55 to +125	°C
T _{STG}	Operating JunctionTemperature Range	—	-55 to +150	°C

Electrical Parameter

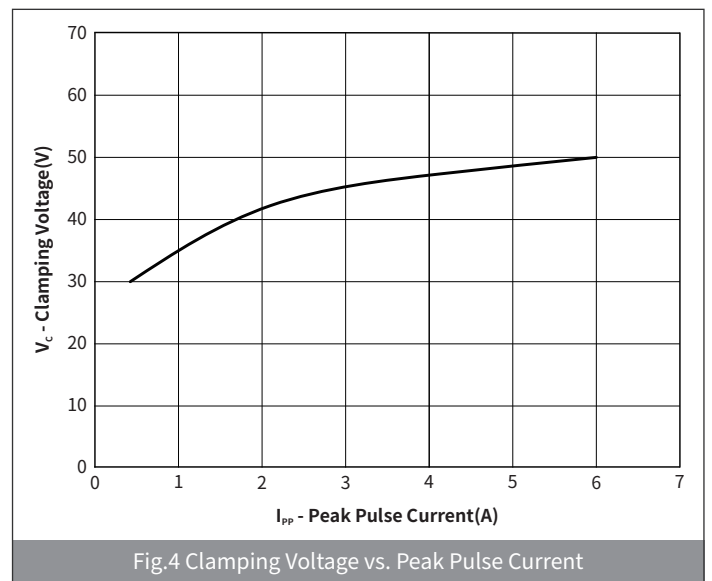
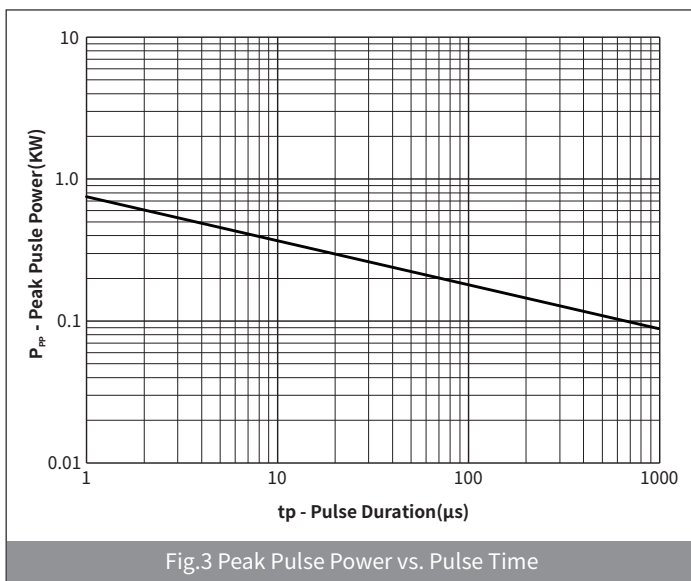
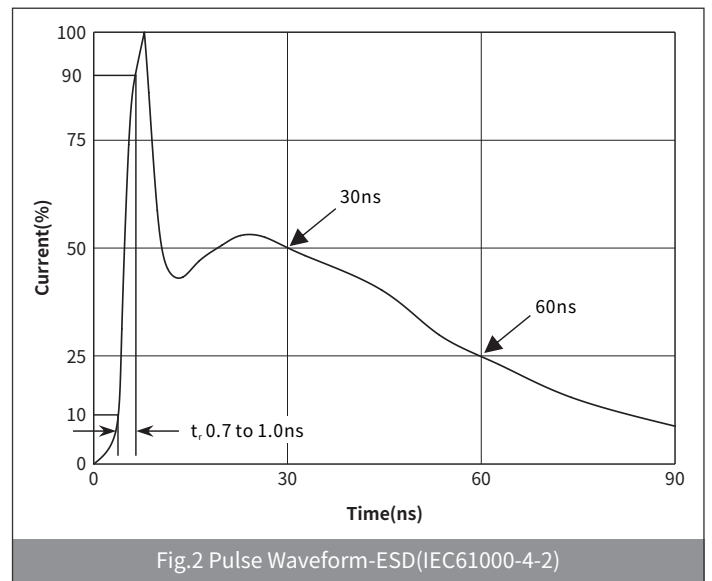
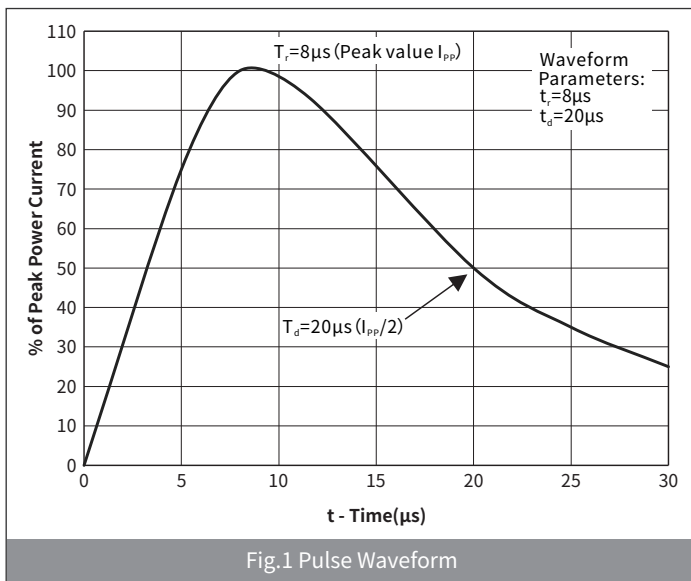
SYMBOL	PARAMETER
V _C	Clamping Voltage @ I _{PP}
V _{BR}	Breakdown Voltage @ I _T
I _{PP}	Peak Pulse Current
I _T	Test Current
I _R	Reverse Leakage Current @ VRWM
V _{RWM}	Peak Reverse Working Voltage
P _{PP}	Peak Pulse Power Dissipation
C _J	Junction Capacitance @ V _R =0V,f=1MHz
I _F	Forward Current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



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

PARAMETER	SYMBOL	CONDITION	Min	Typ	Max	UNIT
Peak Reverse Working Voltage	V_{RWM}	$T_a=25^\circ\text{C}$	—	—	24	V
Breakdown Voltage	V_{BR}	$I_R=1.0\text{mA}, T_a=25^\circ\text{C}$	26.5	—	31	V
Reverse Leakage Current	I_R	$V_R=24\text{V}, T_a=25^\circ\text{C}$	—	—	1.0	μA
Clamping Voltage	V_C	$I_{PP}=1.0\text{A}, t_p=8/20\mu\text{s}$	—	—	35	V
		$I_{PP}=6.0\text{A}, t_p=8/20\mu\text{s}$	—	—	50	
Junction Capacitance	C_J	$V_R=0\text{V}, f=1\text{MHz}$	—	—	30	pF

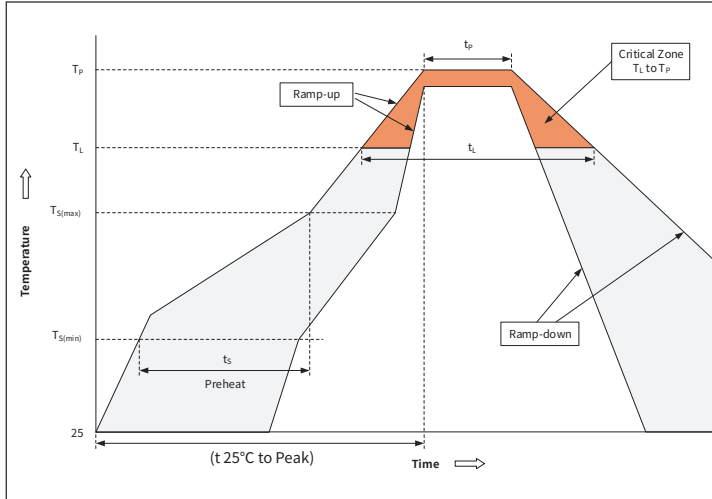
● **Ratings And Characteristics Curves** (Ta=25°C Unless otherwise specified)



Ordering Information

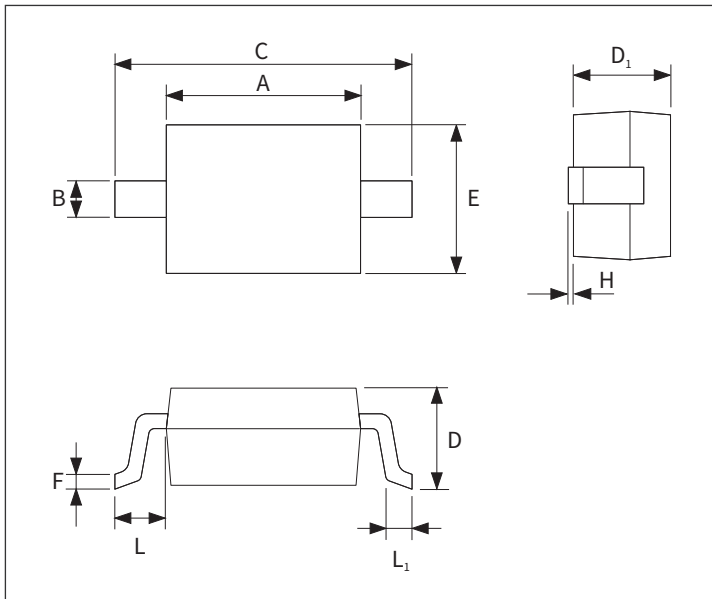
PACKAGE	PACKAGE CODE	UNIT WEIGHT(g)	REEL(pcs)	BOX(pcs)	CARTON(pcs)	DELIVERY MODE
SOD-323	R1	0.0048	3000	45000	180000	7"

Recommended Soldering Conditions



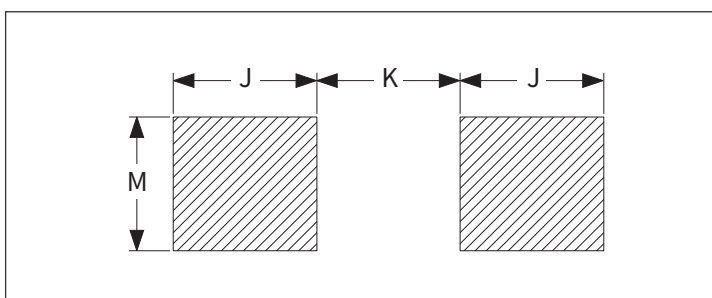
Profile Feature		Pb-Free Assembly
Pre-heat	Temperature Min ($T_{S(min)}$)	+150°C
	Temperature Max ($T_{S(max)}$)	+200°C
	Time (Min to Max) (t_s)	60-180 secs.
Average ramp up rate (Liquid us Temp (T_l) to peak)		3°C/sec. Max
$T_{S(max)}$ to T_l - Ramp-up Rate		3°C/sec. Max
Reflow	Temperature (T_l) (Liquid 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.
J	0.80	-	0.031	-
K	-	1.40	-	0.055
M	0.80	-	0.031	-