

ESD Protection Diode

Features

- 300 Watts Peak Pulse Power per Line ($t_p = 8/20\mu s$)
Replacement for MLV (0805)
- Unidirectional & Bidirectional Configurations
- Protects one I/O or power line
- Low Clamping Voltage
- Working Voltage: 3.3V, 5V, 12V, 15V and 24V, 36V
- Low Leakage Current
- Response Time is Typically $< 1\text{ ns}$
- AEC-Q101 qualified (Automotive grade with suffix "Q".)
- Expsemi electronics



IEC COMPATIBILITY (EN61000-4)

- IEC 61000-4-2 (ESD) $\pm 15\text{kV}$ (air), $\pm 8\text{kV}$ (contact)
- IEC 61000-4-4 (EFT) 40A (5/50ns)
- IEC 61000-4-5 (Lightning) 24A (8/20 μs)

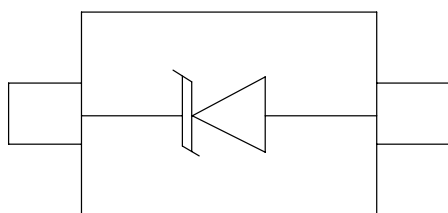
Mechanical Characteristics

- JEDEC SOD-323 package
- Molding compound flammability rating: UL 94V-0
- Marking: Marking Code
- Packaging: Tape and Reel per EIA
- 481 RoHS/WEEE Compliant

Applications

- Laptop Computers
- Cellular Phones
- Digital Cameras
- Personal Digital Assistants (PDAs)

Schematic & PIN Configuration

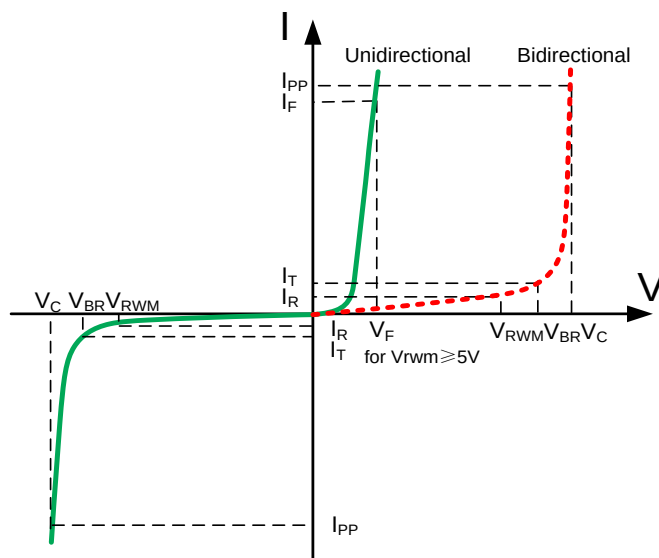


SOD-323

Absolute Maximum Rating			
Rating	Symbol	Value	Units
Unidirectional Peak Pulse Power ($t_p=8/20\mu s$) -See Figure 1	P_{PP}	300	Watts
Bidirectional Peak Pulse Power ($t_p=8/20\mu s$) -See Figure 1	P_{pp}	300	Watts
Operating Temperature	T_J	-55 to + 125	$^{\circ}C$
Storage Temperature	T_{STG}	-55 to +150	$^{\circ}C$

Electrical Parameters (T=25 $^{\circ}C$)

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



Electrical Characteristics

Part Number	Reverse Stand off Voltage V_{RWM} (Volts)	Minimum Breakdown Voltage $V_{BR}@1mA$ (Volts)	Maximum Clamping Voltage $V_C @ I_{PP}$ (Volts)	Maximum Peak Pulse Current I_{pp} (Amps)	Maximum Reverse Leakage $I_R @ V_{RWM}$ (μA)	Typical Capacitance DC=0V CJ@ 1 MHz (pF)
EPD03	3.3	4.0	12.5	24	70	400
EPD05	05	6.0	14	21	1	300
EPD12	12	13.3	25	12	1	250
EPD15	15	16.7	30	10	1	150
EPD24	24	26.7	50	6	1	100
EPD36	36	40	72	4.16	1	100

Typical Characteristics

Figure 1: Peak Pulse Power vs. Pulse Time

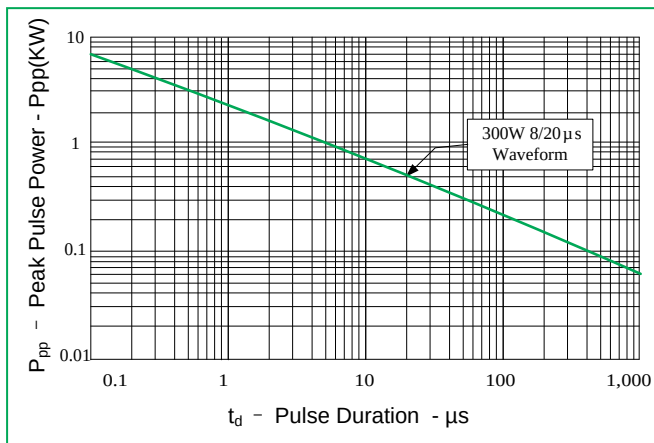


Figure 2: Power Derating Curve

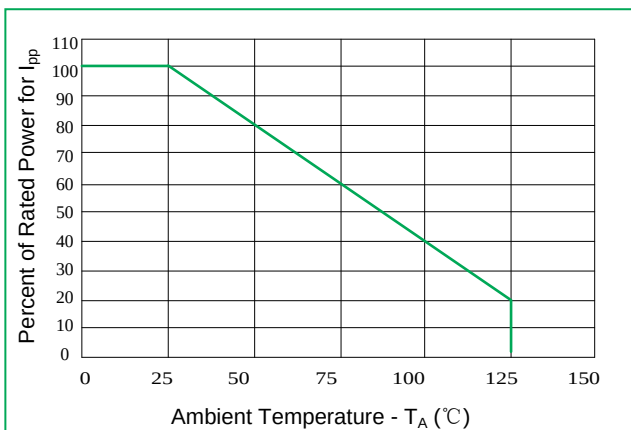


Figure 3: Pulse Waveform

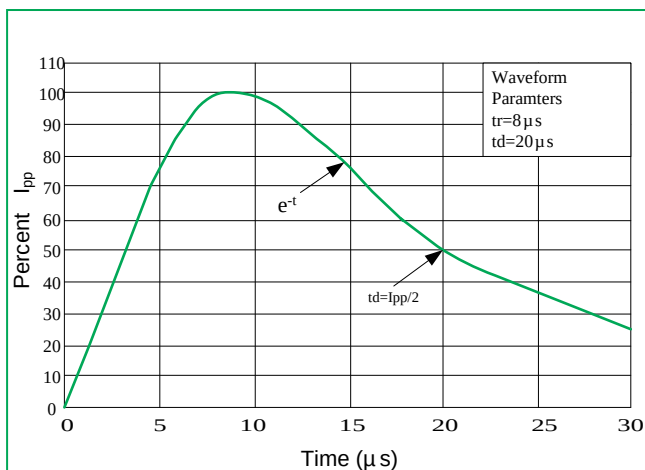


Figure 4: Clamping Voltage vs. Peak Pulse Current

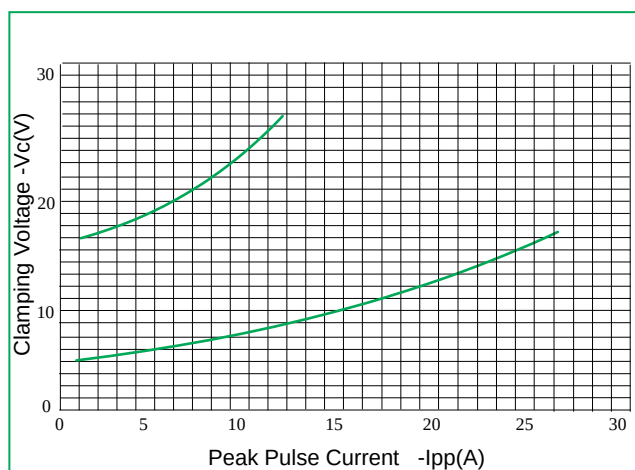
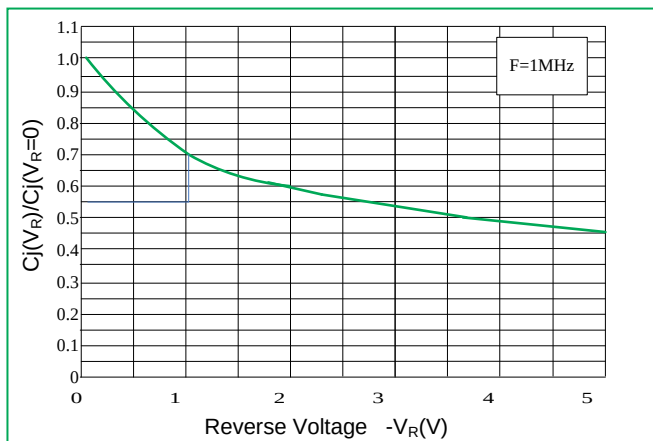
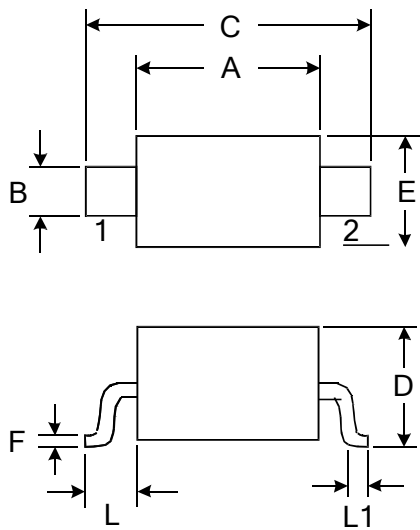


Figure 5: Normalized Junction capacitance vs. Reverse Voltage



Outline Drawing SOD-323



DIMENSIONS				
SYMBOL	MILLIMETER		INCHES	
	MIN	MAX	MIN	MAX
A	1.600	1.800	0.063	0.071
B	0.250	0.350	0.010	0.014
C	2.500	2.700	0.098	0.106
D		1.150		0.043
E	1.200	1.400	0.047	0.055
F	0.080	0.150	0.003	0.006
L	0.475 REF		0.019 REF	
L1	0.250	0.400	0.010	0.016
H	0.000	0.100	0.000	0.004

Marking

Part Number	Marking
EPD03	333/03W
EPD05	305/05W
EPD08	308/08W
EPD12	312/12W
EPD15	315/15W
EPD24	324/24W
EPD36	336/36W

Ordering information

Order code	Package	Base qty	Delivery mode
EPDXX	SOD-323	3000	Tape and reel