

Features

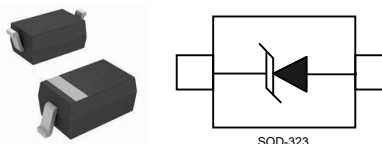
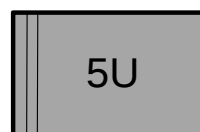
400Watts peak pulse power ($t_p = 8/20\mu s$)
Unidirectional configurations
Solid-state silicon-avalanche technology
Low clamping voltage
Low leakage current
IEC 61000-4-2 $\pm 30kV$ contact $\pm 30kV$ air
IEC 61000-4-4 (EFT) 40A (5/50ns)
IEC 61000-4-5 (Lightning) 27A (8/20 μs)

Mechanical Data

SOD323 package
Molding compound flammability rating: UL 94V-0
Packaging: Tape and Reel
RoHS/WEEE Compliant

Applications

USB Vbus,
Power Line
Power management



Absolute Maximum Rating

Rating	Symbol	Value	Units
Peak Pulse Power ($t_p = 8/20\mu s$)	P_{PP}	400	Watts
Peak Pulse Current ($t_p = 8/20\mu s$) (note1)	I_{pp}	27	A
ESD per IEC 61000-4-2 (Air) ESD per IEC 61000-4-2 (Contact)	V_{ESD}	30 30	kV
Lead Soldering Temperature	T_L	260(10seconds)	$^{\circ}C$
Junction Temperature	T_J	-55 to + 150	$^{\circ}C$
Storage Temperature	T_{stg}	-55 to + 150	$^{\circ}C$

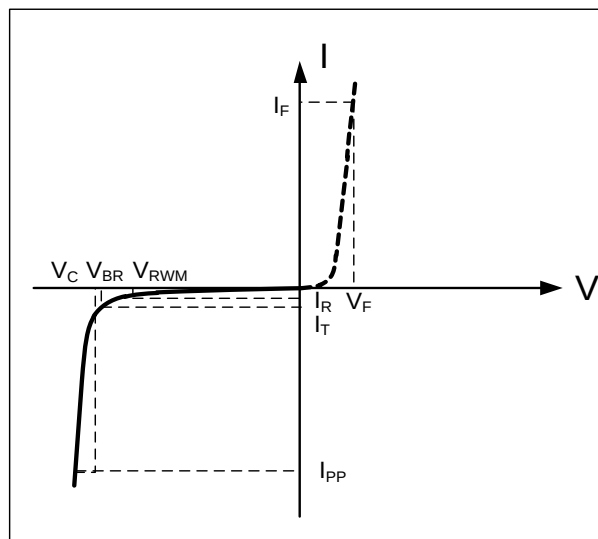
Electrical Characteristics

Parameter	Symbol	Conditions	Min	Typical	Max	Units
Reverse Stand-Off Voltage	V_{RWM}				5.0	V
Reverse Breakdown Voltage	V_{BR}	$I_T=1mA$	6.0			V
Reverse Leakage Current	I_R	$V_{RWM}=5V, T=25^{\circ}C$			1	μA
Clamping Voltage	V_C	$I_{PP}=27A, t_p=8/20\mu s$		16	20	V
Junction Capacitance	C_j	$V_R = 0V, f = 1MHz$		165	200	pF

Electrical Parameters (TA = 25°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

Note: 8/20 μs pulse waveform.



RATING AND CHARACTERISTIC CURVES

Figure 1: Peak Pulse Power vs. Pulse Time

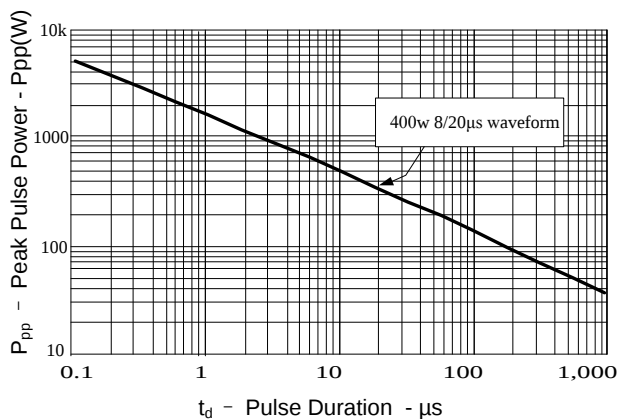


Figure 2: Power Derating Curve

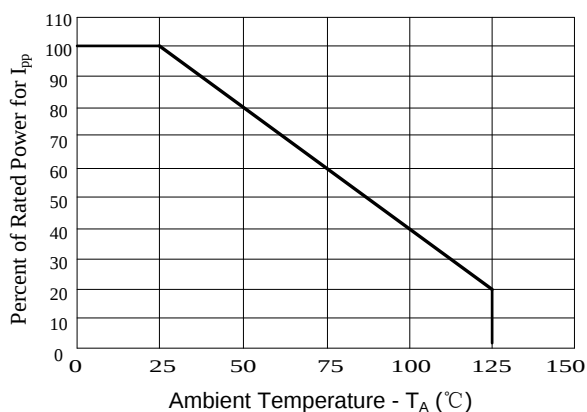


Figure3: Pulse Waveform

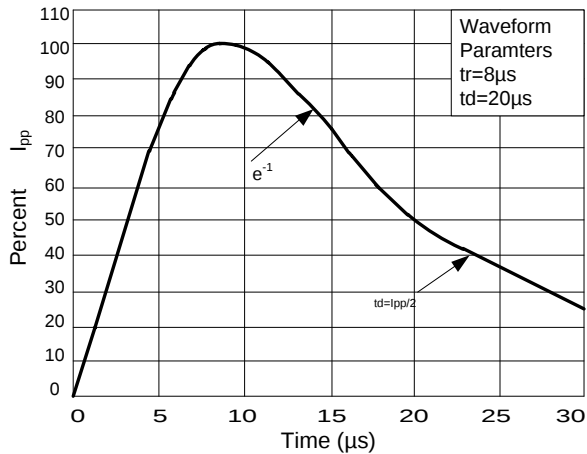
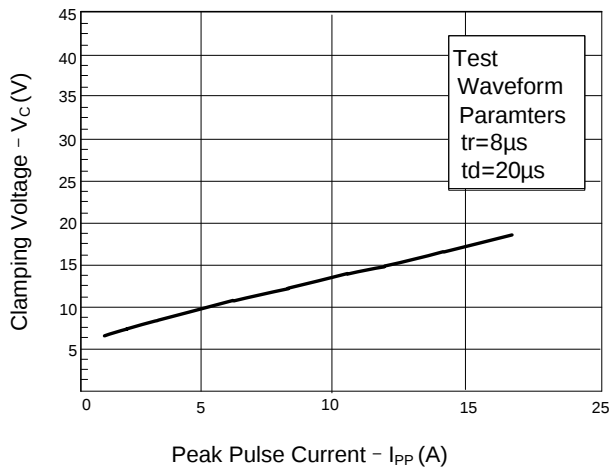
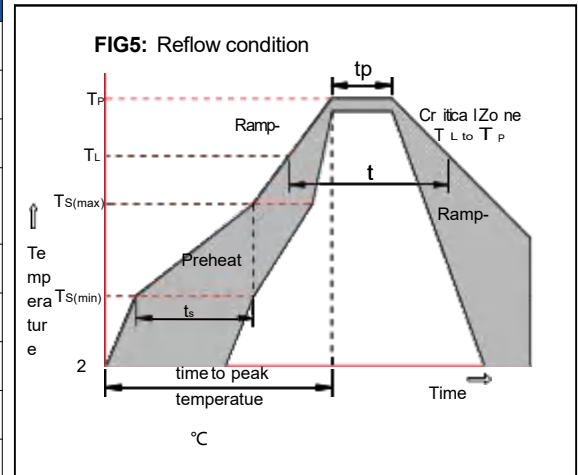


Figure 4: Clamping Voltage vs. Ipp



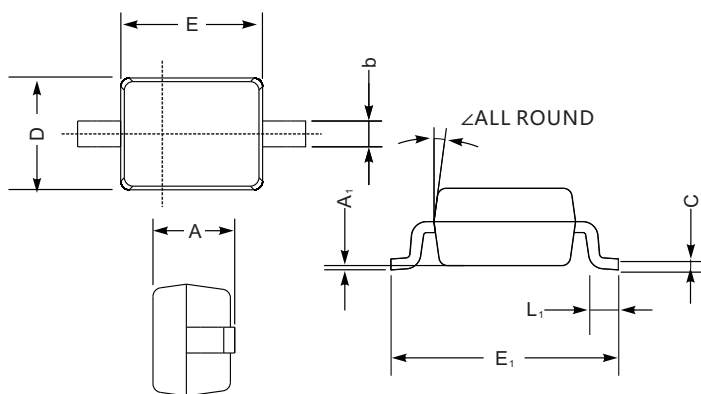
Soldering parameters

Reflow Condition		Pb-Free assembly (see as below)
Pre Heat	-Temperature Min ($T_{s(min)}$)	+150°C
	-Temperature Max($T_{s(max)}$)	+200°C
	-Time (Min to Max) (ts)	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)		30 secs. Max
Ramp-down Rate		6°C/sec. Max
Time 25°C to Peak Temp (T_P)		8 min. Max
Do not exceed		+260°C



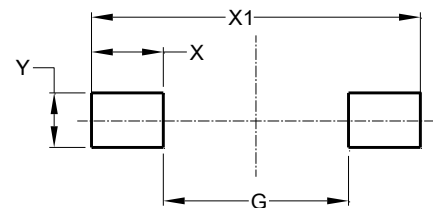
Package Dimensions & Suggested Pad Layout

SOD323



SOD-323 mechanical data

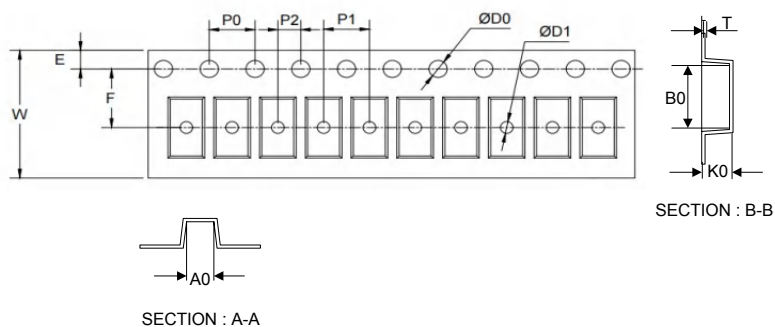
UNIT		A	C	D	E	E ₁	b	L ₁	A ₁	∠
mm	max	1.1	0.15	1.4	1.8	2.75	0.4	0.45	0.2	9°
	min	0.8	0.08	1.2	1.4	2.55	0.25	0.2	—	
mil	max	43	5.9	55	70	108	16	16	8	
	min	32	3.1	47	63	100	9.8	7.9	—	



Dimensions	Value (in mm)
G	1.40
X	1.20
X1	3.80
Y	1.00

Tape & reel specification

Tape



Symbol	Dimension (mm)
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P0	4.00±0.20
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P1	4.00±0.20
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P2	2.00±0.20
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D0	1.55±0.20
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D1	1.00±0.20
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E	1.55±0.25
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F	3.60±0.20
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W	8.00±0.20
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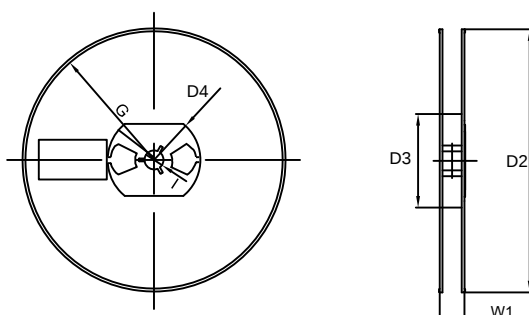
A0	2.00±0.20
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B0	3.25±0.20
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K0	1.35±0.20
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T	0.23±0.10
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7" Reel



D2	177.0±5.0
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D3	55Min.
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D4	R24.6±2.0
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G	R82.0±2.0
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I	13.0±2.0
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W1	10.20±3.0
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Quantity: 3000PCS