

SURFACE MOUNT ULTRAFAST RECTIFIER

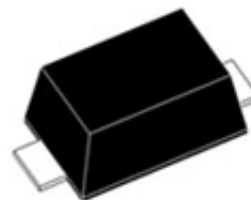
VOLTAGE 50 to 1000 Volt CURRENT 1 Ampere

Features

- For surface mounted applications in order to optimize board space
- Plastic package has Underwriters Laboratory Flammability
- Easy pick and place
- Classification 94V-O
- Ultrafast recovery times for high efficiency
- Glass Passivated Chip Junction
- Lead free in compliance with EU RoHS 2.0
- Green molding compound as per IEC61249 Std. . (Halogen Free)
- AEC-Q101 qualified (Automotive grade with suffix "Q".)
- Expsemi electronics

Mechanical Data

- Case: JEDEC SOD-123FL molded plastic
- Terminals: Solder plated, solderable per MIL-STD-750, Method 2026
- Polarity: Color band denotes cathode end
- Mounting Position : Any



Maximum Ratings ($T_A=25^{\circ}\text{C}$ unless otherwise noted)

PARAM	SYMBOL	USS1A	USS1B	USS1D	USS1G	USS1J	USS1K	USS1M	UNITS
Maximum Recurrent Peak Reverse Voltage	V _{RRM}	50	100	200	400	600	800	1000	V
Maximum RMS Voltage	V _{RMS}	35	70	140	280	420	560	700	V
Maximum DC Blocking Voltage	V _{DC}	50	100	200	400	600	800	1000	V
Maximum Average Forward Current	I _{F(AV)}	1							A
Peak Forward Surge Current : 8.3ms single half sine-wave superimposed on rated load	I _{FSM}	30							A
Maximum Forward Voltage at 1A	V _F	1			1.3	1.7			V
Maximum DC Reverse Current at Rated DC Blocking Voltage T _J =25°C T _J =125°C	I _R	5 100							μA
Typical Thermal Resistance (Note 2)	R _{θJL}	30							°C / W
	R _{θJA}	75							
Maximum Reverse Recovery Time (Note 1)	T _{RR}	50				75			ns
Operating Junction and Storage Temperature Range	T _J ,T _{STG}	-55 to +150							°C

NOTES: 1. Reverse Recovery Test Conditions: $I_F=0.5\text{A}$, $I_R=-1\text{A}$, $I_{rr}=-0.25\text{A}$
 2. 8mm^2 (0.013mm thick) land areas.

RATING AND CHARACTERISTIC CURVES

Fig.1 FORWARD CURRENT DERATING CURVE

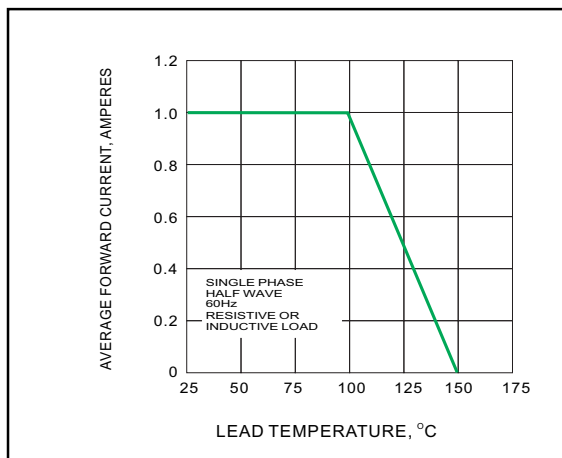


Fig.2 PEAK FORWARD SURGE CURRENT

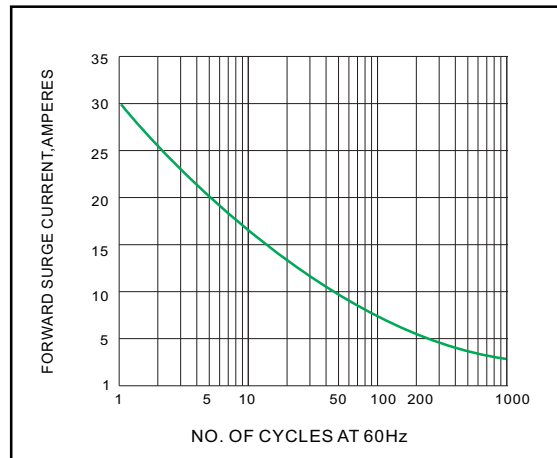


Fig.3 FORWARD CHARACTERISTICS

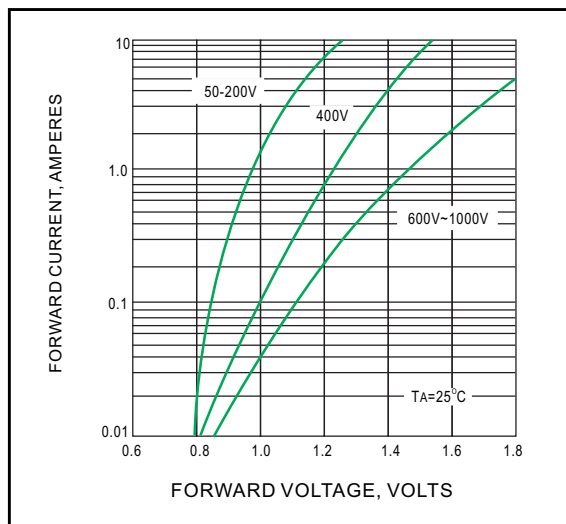


Fig.4-TYPICAL REVERSE CHARACTERISTIC

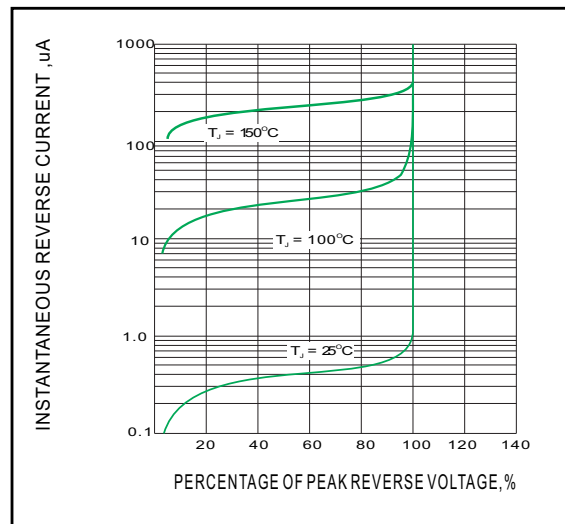
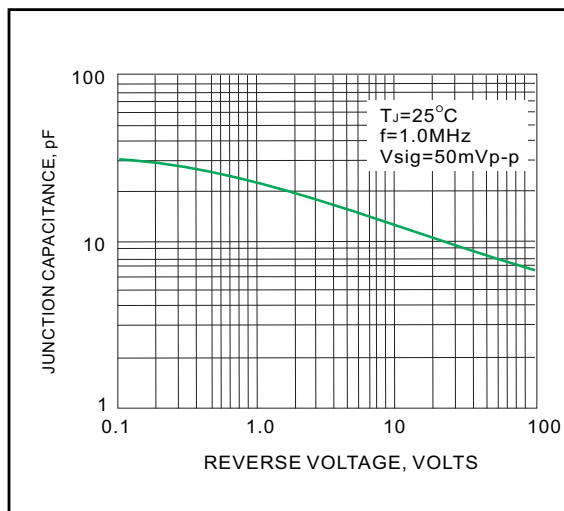
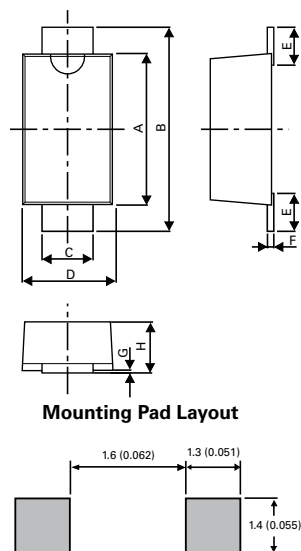


Fig.5 TYPICAL JUNCTION CAPACITANCE



Dimensions

SOD-123FL Package

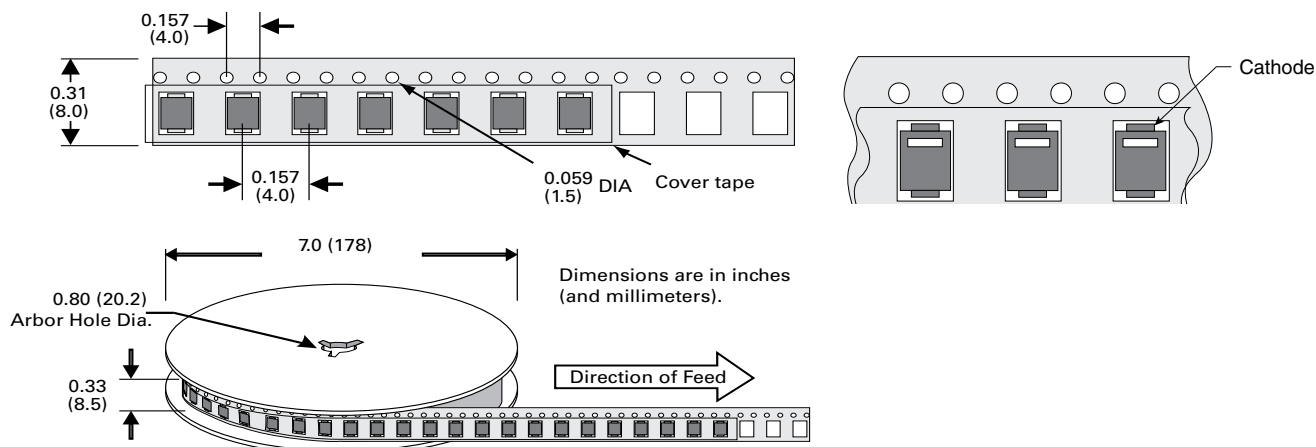


Dimensions	Millimeters		Inches	
	Min	Max	Min	Max
A	2.50	3.20	0.0984	0.1259
B	3.40	3.90	0.1339	0.1535
C	0.70	1.35	0.0275	0.0531
D	1.50	2.00	0.0591	0.0787
E	0.35	0.90	0.0138	0.0354
F	0.05	0.26	0.0020	0.0102
G	0.00	0.10	0.000	0.0039
H	0.70	1.35	0.0275	0.0531

Packaging Options

Part number	Component Package	Quantity	Packaging Option	Packaging Specification
USS1X	SOD-123FL	3000	Tape & Reel – 8mm tape/7" reel	EIA RS-481

Tape and Reel Specification



Note: Devices are packed in accordance with EIA standard RS-481-A and specification given above.