

Surface Mount Fast Recovery Rectifier Diode

Features

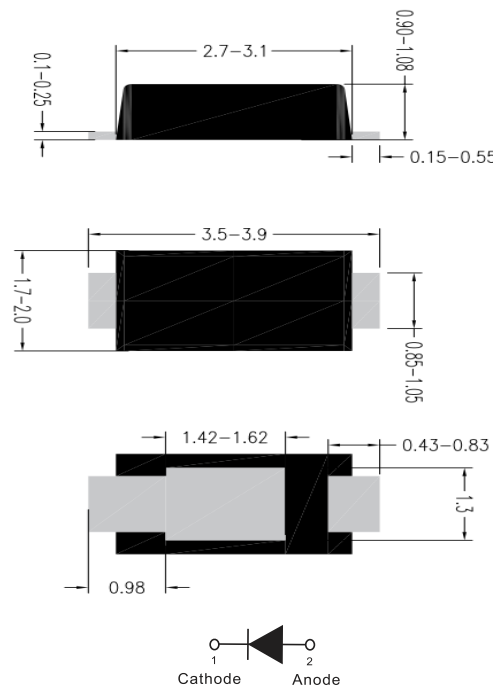
- Low profile package
- Ideal for automated placement
- Glass passivated chip junction
- Fast switching for fast recovery
- High forward surge capability
- AEC-Q101 qualified
- Meets MSL level 1, per J-STD-020, LF maximum peak of 260°C

Mechanical Data

- **Package:** SOD-123HE
Molding compound meets UL 94 V-0 flammability rating, RoHS-compliant, halogen-free
- **Terminals:** Tin plated leads, solderable per J-STD-002 and JESD22-B102
- **Polarity:** Cathode line denotes the cathode end

SOD-123HE

Unit : inch(mm)



Maximum Ratings and Electrical Characteristics (T_A=25°C unless otherwise noted)

Parameter	Symbol	RS1A HEQ	RS1B HEQ	RS1D HEQ	RS1G HEQ	RS1J HEQ	RS1K HEQ	RS1M HEQ	Unit
Maximum repetitive 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 rectified current	I _{F(AV)}	1							A
Peak forward surge current, 8.3 ms single half sine-wave superimposed on rated load	I _{FSM}	30							A
Maximum instantaneous forward voltage (Note 1) @1A	V _F	1.3							V
Maximum reverse current @ rated V _R T _J =25°C T _J =125°C	I _R	5 50							μA
Maximum reverse recovery time (Note 2)	t _{rr}	150				250	500		ns
Typical junction capacitance (Note 3)	C _J	10							pF
Typical thermal resistance	R _{θJC} R _{θJA}	45 90							°C/W
Operating junction temperature range	T _J	- 55 to +150							°C
Storage temperature range	T _{STG}	- 55 to +150							°C

Note:

1. Pulse test with PW=300μs, 1% duty cycle
2. Reverse Recovery Test Conditions: I_F=0.5A, I_R=1.0A, I_{RR}=0.25A
3. Measured at 1 MHz and Applied Reverse Voltage of 4.0V D.C.



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

FIG.1 FORWARD CURRENT DERATING CURVE

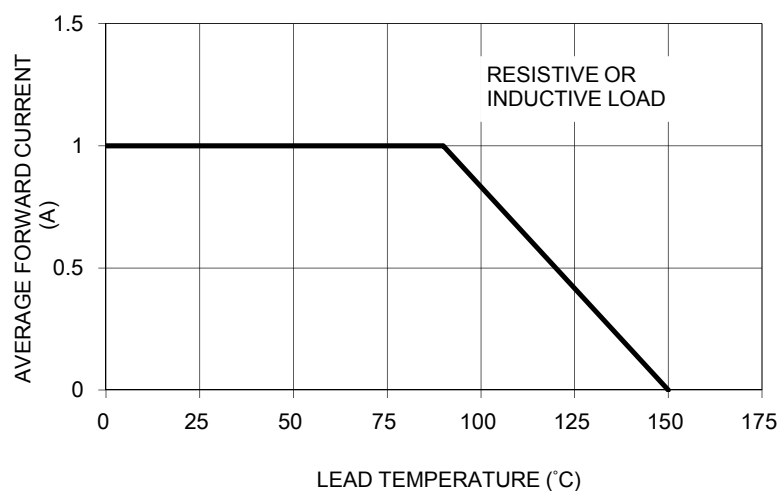


FIG. 2 TYPICAL REVERSE CHARACTERISTICS

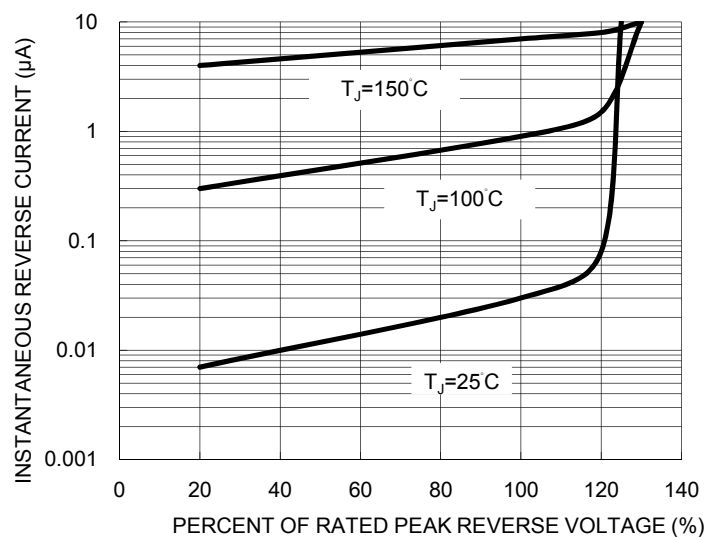


FIG. 3 MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

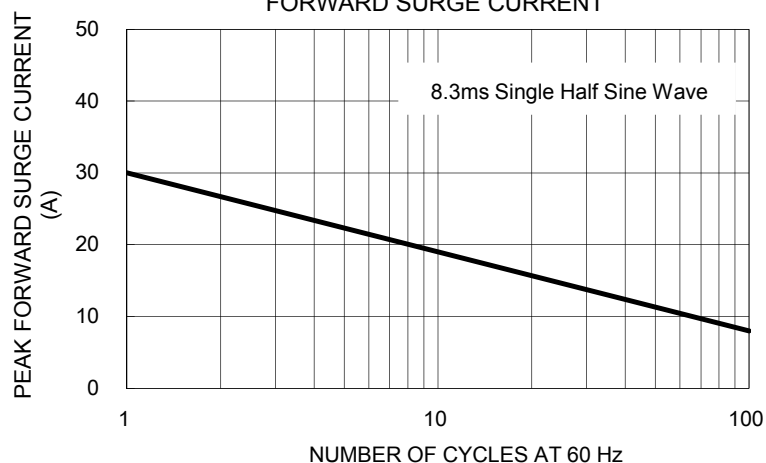


FIG. 4 TYPICAL FORWARD CHARACTERISTICS

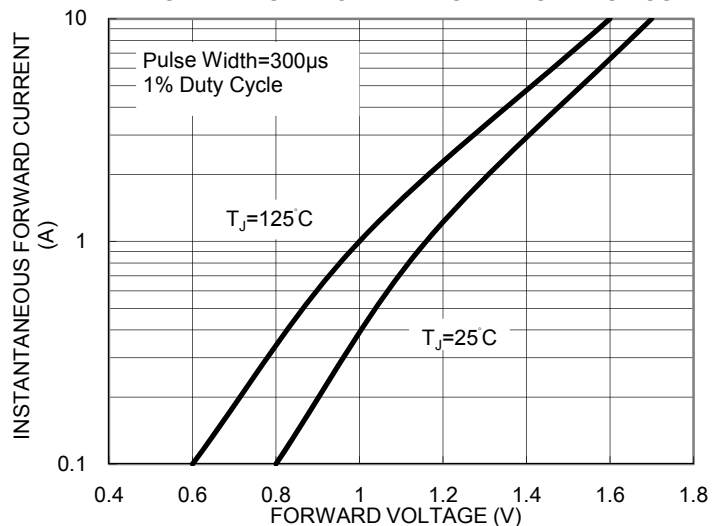


FIG. 5 TYPICAL JUNCTION CAPACITANCE

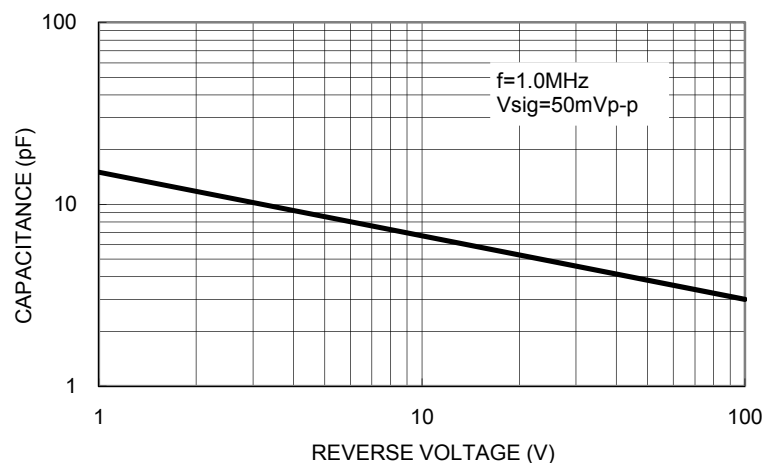


FIG.6- REVERSE RECOVERY TIME CHARACTERISTIC AND TEST CIRCUIT DIAGRAM

