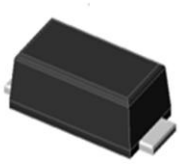
AF1A thru AF7A

Surface Mount Glass Passivated Standard Rectifier
Reverse Voltage 50~1000V Forward Current 1A

Features

- Glass passivated Standard Rectifiers
- Very low profile - typical height of 1.0 mm
- Low forward voltage drop
- Low leakage current
- Moisture sensitivity: level 1, per J-STD-020
- AEC-Q101 Qualified
- High temperature soldering guaranteed: 260℃/10 seconds
- Halogen-free according to IEC 61249-2-21 definition

RoHS COMPLIANT



eSGA
(SOD-123FL)

Typical Applications

For use of general purpose rectification in lighting, cellular phone, portable device, power supplies and automotive electronics applications.

Maximum Ratings (TA = 25 °C unless otherwise noted)

Parameter	Symbol	AF1A	AF2A	AF3A	AF4A	AF5A	AF6A	AF7A	Unit
Maximum repetitive peak reverse voltage	VRRM	50	100	200	400	600	800	1000	V
Maximum RMS voltage	VRMS	35	70	140	280	420	560	700	V
Maximum DC blocking voltage	VDC	50	100	200	400	600	800	1000	V
Maximum average forward rectified current at TL (See Fig.1)	IF(AV)	1.0							A
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	IFSM	40							A
Operating junction and storage temperature range	TJ, TSTG	- 55 to + 150							°C

Electrical Characteristics (TA = 25 °C unless otherwise noted)

Parameter	Test Conditions	Symbol	AF1A	AF2A	AF3A	AF4A	AF5A	AF6A	AF7A	Unit
Maximum instantaneous forward voltage	1 A	V_F	1.0							Volts
Maximum DC reverse current at rated DC blocking voltage	TA=25℃ TA=125℃	I_R	5 50							μA
Typical reverse recovery time	I_F=0.5A,I_R=1.0A, I_{rr}=0.25A	t_{rr}	1.8							uS
Typical junction capacitance	4.0 V, 1 MHz	C_J	6							pF
Typical thermal resistance[1)]	juntion to ambient	$R_{\theta JA}$	125							℃/W
	juntion to case	$R_{\theta JC}$	60							
	juntion to lead	$R_{\theta JL}$	20							

Note:1),The thermal resistance from junction to ambient,case or lead,mounted on P.C.B with 5×5mm copper pads,2 OZ,FR4 PCB

Ratings and Characteristics Curves

(TA = 25℃ unless otherwise noted)

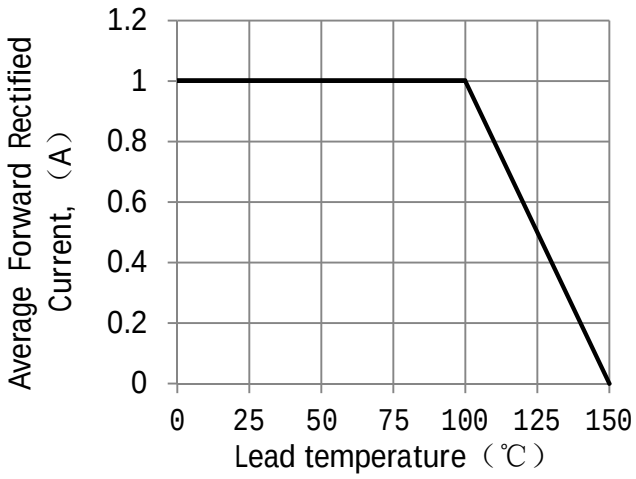


Figure 1.Forward Current Derating Curve

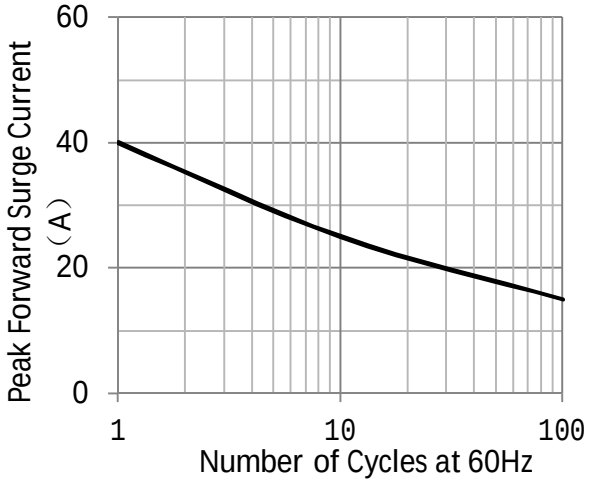


Figure 2.Maximum Non-Repetitive Peak Forward Surge Current

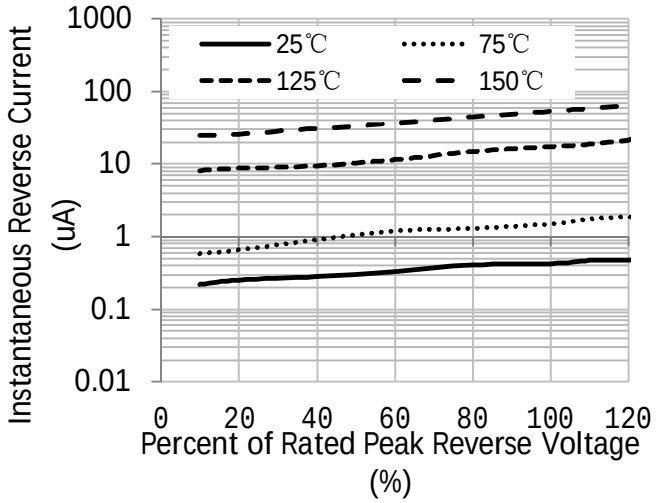


Figure 3. Typical Reverse Characteristics

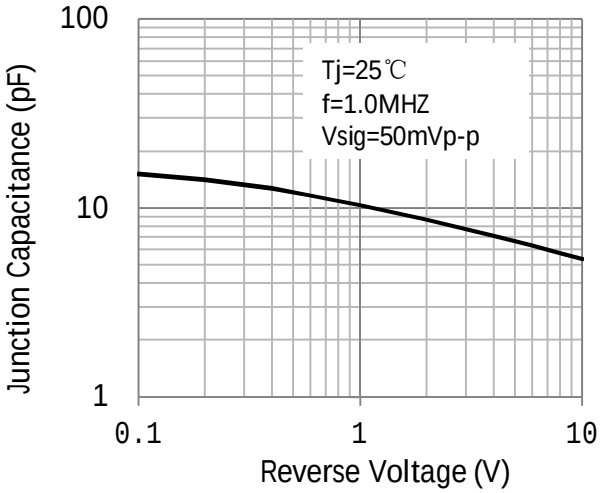


Figure 4. Typical Junction Capacitance

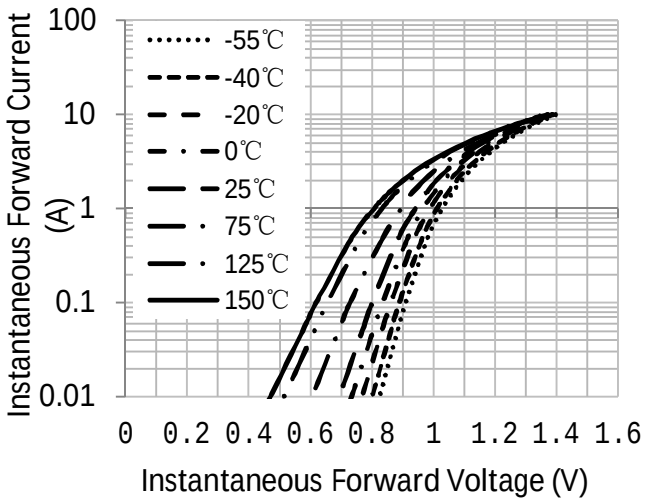
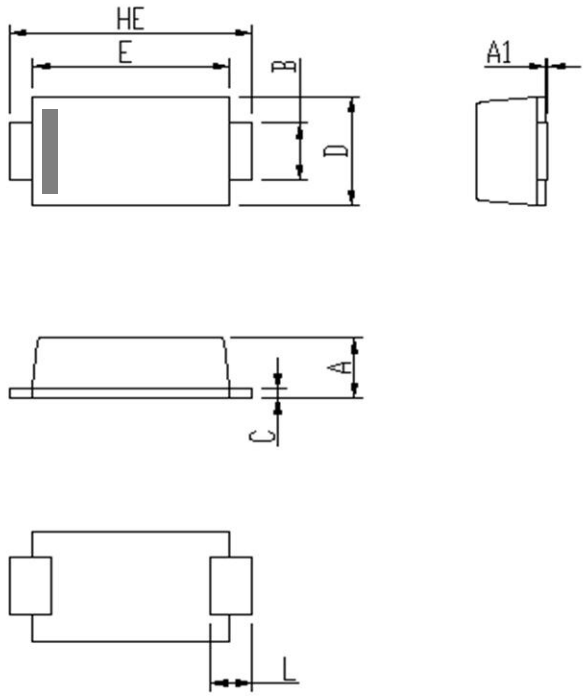


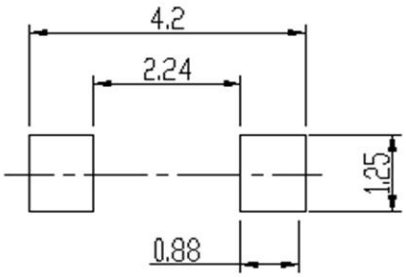
Figure 5. Typical Instantaneous Forward Characteristics

Package Outline Dimensions



DIM	Unit: mm		Unit: inch	
	MIN	MAX	MIN	MAX
A	0.9	1.08	0.035	0.043
A1	0	0.1	0.000	0.004
B	0.85	1.05	0.033	0.041
C	0.1	0.25	0.004	0.010
D	1.7	2	0.067	0.079
E	2.9	3.1	0.114	0.122
L	0.43	0.83	0.017	0.033
HE	3.5	3.9	0.138	0.154

Soldering footprint

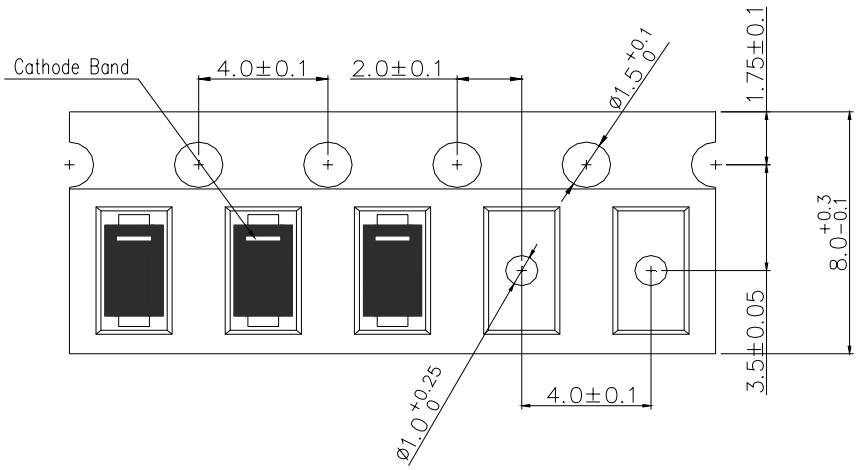


Packing Information

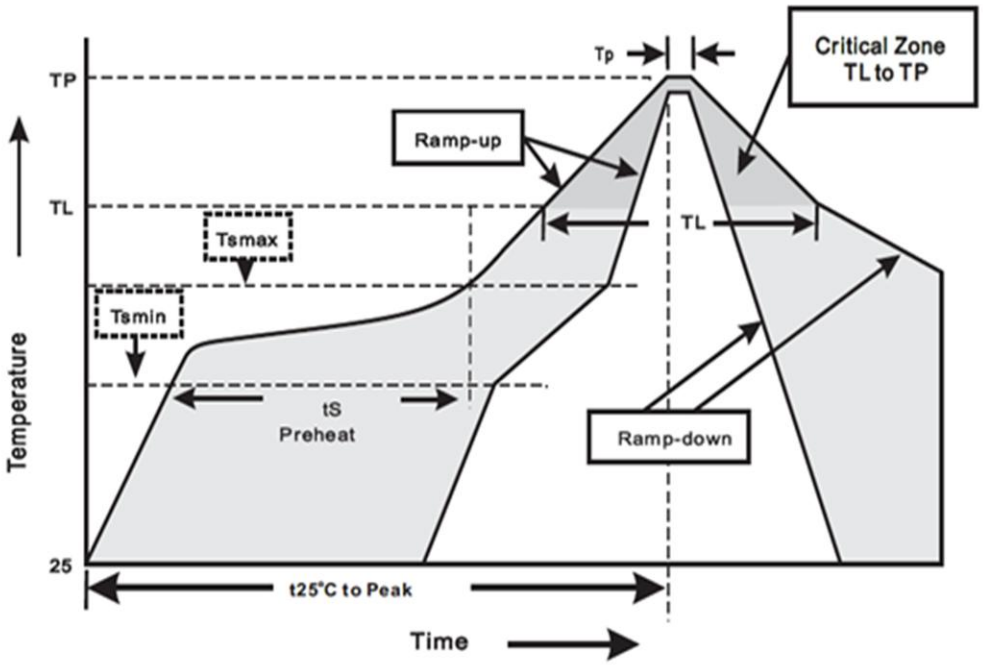
Packing quantities:

10,000 pcs/Reel, 2 Reels/Inner box,18 Reels/Outer Carton; 8mm Tape,13" Reel

Tape & Reel Specification



Soldering Parameters



Reflow Soldering		Sn-Pb Eutectic Assembly	Pb-Free assembly
Pre Heat	- Temperature Min (Ts(min))	100℃	150℃
	- Temperature Max (Ts(max))	150℃	200℃
	- Time (min to max) (ts)	60 – 120 secs	60 – 180 secs
Average ramp up rate (Liquidus)Temp (TL) to peak		3℃/second max	3℃/second max
TS(max) to TL - Ramp-up Rate		3℃/second max	3℃/second max
Reflow	- Temperature (TL) (Liquidus)	183℃	217℃
	- Time (min to max) (ts)	60 – 150 seconds	60 – 150 seconds
Peak Temperature (TP)		240+0/-5 ℃	260+0/-5℃
Time within 5℃ of actual peak Temperature (tp)		10 –30 seconds	20 – 40 seconds
Ramp-down Rate		6℃/second max	6℃/second max
Time 25℃ to peak Temperature (TP)		6 minutes Max.	8 minutes Max.
Do not exceed		240℃	260℃

Wave Soldering	
Peak Temperature :	265+0/-5℃
Dipping Time :	10 seconds
Soldering :	1 time

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