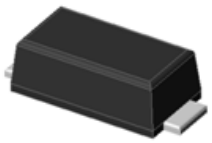
1A,50-1200V High Efficient Rectifiers

Features

- Low leakage current
- Low forward voltage drop
- Glass passivated chip junction
- Moisture sensitivity: level 1, per J-STD-020
- Halogen-free according to IEC 61249-2-21 definition
- High temperature soldering guaranteed: 260℃/10 seconds
- AEC-Q101 qualified

RoHS
COMPLIANT



eSGA (SOD-123FL)

Applications

For use of fast switching rectification in lighting, cellular phone, portable device, power supplies and other consumer applications.

Maximum Ratings & Electrical Characteristics (T_A=25℃ unless otherwise noted)

Parameter	Symbol	AFH1	AFH2	AFH3	AFH4	AFH5	AFH6	AFH7	AFH8	Unit
Maximum repetitive peak reverse voltage	V_{RRM}	50	100	200	400	600	800	1000	1200	V
Maximum RMS voltage	V_{RMS}	35	70	140	280	420	560	700	840	V
Maximum DC blocking voltage	V_{DC}	50	100	200	400	600	800	1000	1200	V
Maximum average forward rectified current	$I_{F(AV)}$	1								A
Peak forward surge current,8.3ms single half sine-wave superimposed on rated load per diode	I_{FSM}	30								A
Operating junction temperature range	T_J	-55 to +150								°C
Storage temperature range	T_{STG}	-55 to +150								°C

Thermal-Mechanical Specifications (T_A=25℃ unless otherwise noted)

Parameter	Symbol	Typ	Unit
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	100	°C /W
Thermal Resistance, Junction to Case	$R_{\theta JC}$	20	°C /W
Thermal Resistance, Junction to Lead	$R_{\theta JL}$	20	°C /W

Electrical Specifications (T_A=25℃ unless otherwise noted)

Parameter	Symbol	Test Conditions	AFH1	AFH2	AFH3	AFH4	AFH5	AFH6	AFH7	AFH8	Unit
Forward Drop Voltage	V_F	I_F=1A	1.3				1.7			1.9	V
Reverse leakage current @V_R	I_R	T_J =25℃	5								uA
		T_J =125℃	100								
Maximum reverse recovery time	trr	I_F=0.5A, I_R=1.0A, I_{RR}=0.25A	50				75				nS

Note：

1. Mounted on copper pad area of 0.2x0.2” (5.0 x 5.0mm) to each terminal.

Ratings and Characteristics Curves

(T_A = 25℃ unless otherwise noted)

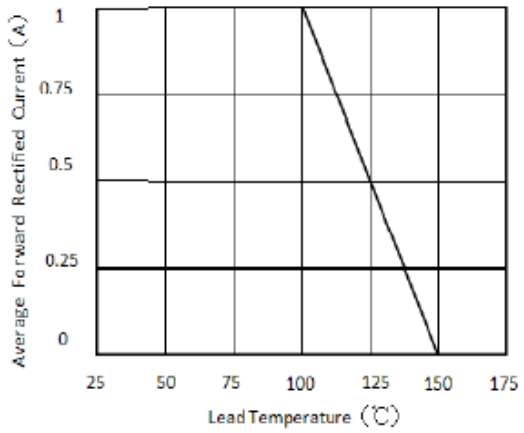


Figure 1.Forward Current Derating Curve

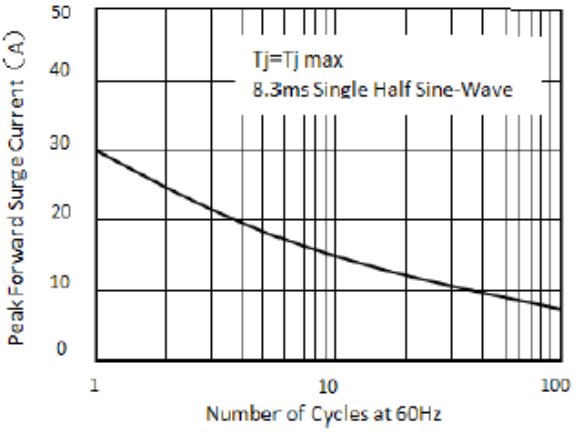


Figure 2.Maximum Non-Repetitive Peak Forward Surge Current

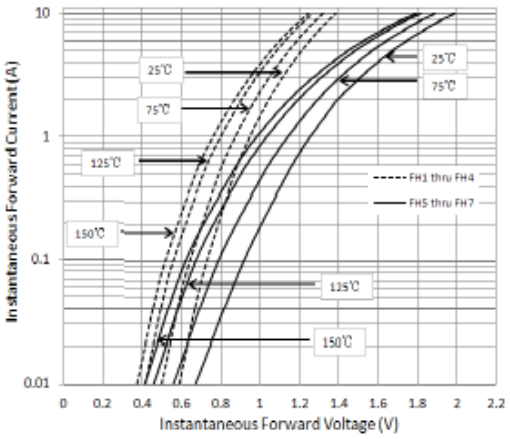


Figure 3. Typical Instantaneous Forward Characteristics

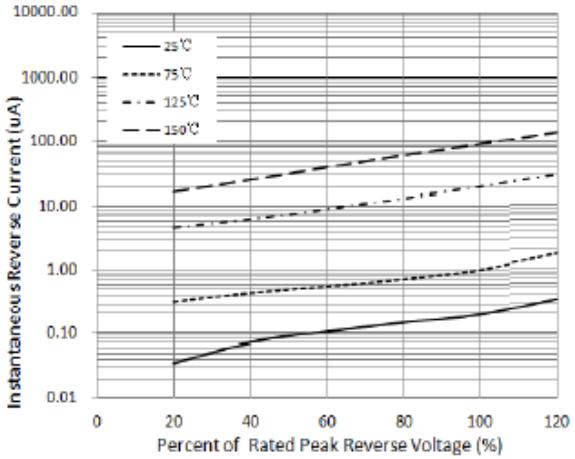
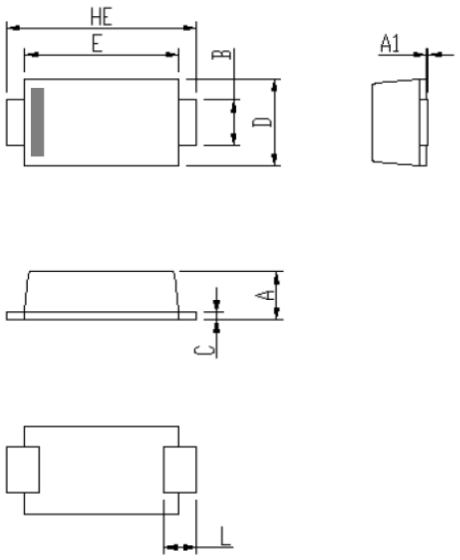


Figure 4. Typical Reverse Characteristics

Package Outline Dimensions

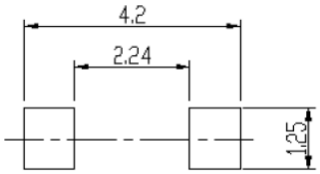
in inches (millimeters)

eSGA (SOD-123FL)



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



Revision History

Document Version	Date of release	Discroption of changes
Rev.A	2021.06.01	Released Datasheet
Rev.B	2023.10.23	Modify document format
Rev.C	2023.12.18	Add AFH8 product information

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