

GSE1AH thru GSE1JH

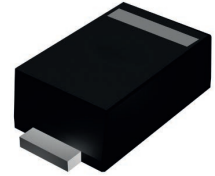
Surface Mount Super Fast Recovery Rectifiers
 Reverse Voltage 50V to 600V Forward Current 1A

Features

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



RoHS
COMPLIANT



SOD-123FL



Schematic Diagram

Mechanical Data

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

Applications

For use in super fast switching rectification of power supply, inverters, converters, and freewheeling diodes for consumer and telecommunication.

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

Parameter	Symbol	GS E1AH	GS E1BH	GS E1DH	GS E1FH	GS E1GH	GS E1JH	Unit
Maximum Repetitive Peak Reverse Voltage	V_{RRM}	50	100	200	300	400	600	V
Maximum RMS Voltage	V_{RMS}	35	70	140	210	280	420	V
Maximum DC Blocking Voltage	V_{DC}	50	100	200	300	400	600	V
Average Rectified Output Current @ 60Hz Sine Wave, Resistance Load, T_L (FIG.1)	I_O	1.0						A
Forward Surge Current (Non-Repetitive) @ 60Hz Half-Sine Wave, 1 Cycle, $T_J=25^\circ\text{C}$	I_{FSM}	30						A
Forward Surge Current (Non-Repetitive) @ 1ms, Square Wave, 1 Cycle, $T_J=25^\circ\text{C}$		60						
Current Squared Time @ $1\text{ms} \leq t \leq 8.3\text{ms}$, $T_J=25^\circ\text{C}$	I^2t	3.735						A^2s
Typical Thermal Resistance, Junction to Ambient ¹	$R_{\theta JA}$	60						$^\circ\text{C/W}$
Typical Thermal Resistance, Junction to Lead ¹	$R_{\theta JL}$	20						$^\circ\text{C/W}$
Typical Thermal Resistance, Junction to Case ¹	$R_{\theta JC}$	18						$^\circ\text{C/W}$
Storage Temperature Range	T_{STG}	-55 to +150						$^\circ\text{C}$
Junction Temperature Range	T_J	-55 to +150						$^\circ\text{C}$

Notes:

1. Thermal resistance between junction and ambient and between junction and lead mounted on P.C.B with 3mm x 3mm copper pad areas.

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

Parameter	Symbol	Condition	GS	GS	GS	GS	GS	Unit	
			E1AH	E1BH	E1DH	E1FH	E1GH		E1JH
Maximum Instantaneous Forward Voltage	V _F	I _{FM} =1.0A	0.95		1.3		1.7	V	
Maximum Reverse Recovery Time	t _{rr}	I _F =0.5A, I _R =1.0A, I _{rr} =0.25A	35						nS
Maximum DC Reverse Current at Rated DC Blocking Voltage	I _R	T _J =25°C	5						μA
		T _J =125°C	100						
Typical Junction Capacitance	C _J	Measured at 1MHz and Applied Reverse Voltage of 4.0V.D.C	18		12		7	pF	

Typical Ratings and Characteristics Curves

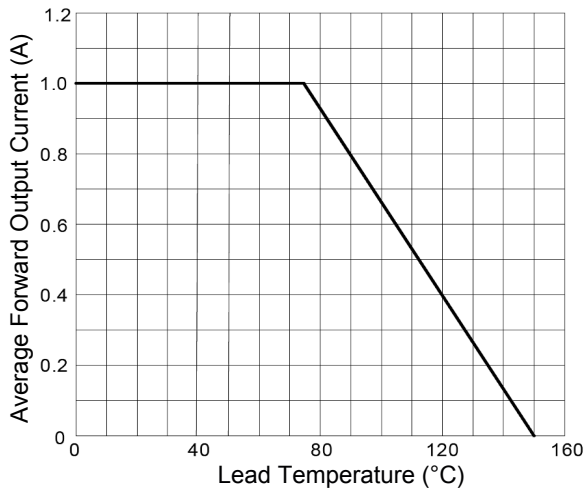


Figure 1. I_O-T_L Curve

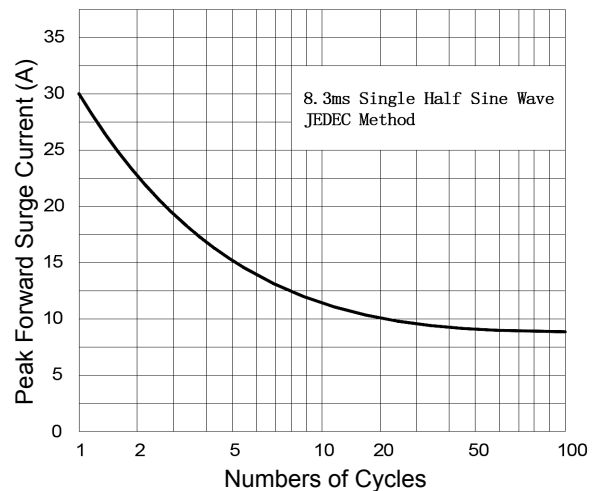


Figure 2. Surge Forward Current Capability

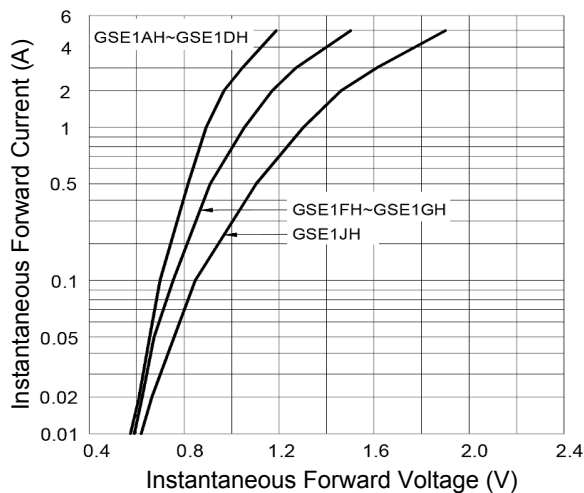


Figure 3. Typical Forward Characteristics

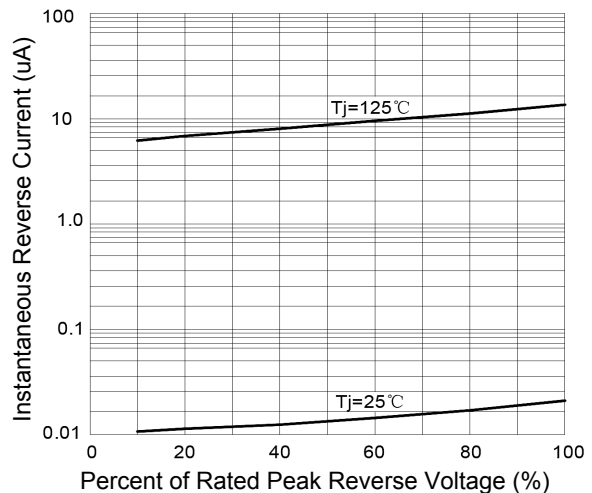


Figure 4. Typical Reverse Characteristics

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Package Outline Dimensions (SOD-123FL)



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.90	1.08	0.035	0.043
A1	0.00	0.10	0.000	0.004
B	0.90	1.10	0.035	0.043
C	0.10	0.20	0.004	0.008
D	1.70	1.90	0.067	0.075
E	2.90	3.10	0.114	0.122
L	0.56	0.76	0.022	0.030
HE	3.60	3.80	0.142	0.150

Order Information

Device	Package	Marking	Carrier	Quantity
GSE1AH	SOD-123FL	E1AH	Tape & Reel	3,000 Pcs / Reel
GSE1BH	SOD-123FL	E1BH	Tape & Reel	3,000 Pcs / Reel
GSE1DH	SOD-123FL	E1DH	Tape & Reel	3,000 Pcs / Reel
GSE1FH	SOD-123FL	E1FH	Tape & Reel	3,000 Pcs / Reel
GSE1GH	SOD-123FL	E1GH	Tape & Reel	3,000 Pcs / Reel
GSE1JH	SOD-123FL	E1JH	Tape & Reel	3,000 Pcs / Reel