

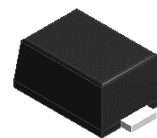
1A,400-600V Superfast Rectifiers

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°C/10 seconds



RoHS
COMPLIANT



eSGP(SOD-323F)

Applications

For use in secondary rectification and freewheeling for superfast switching speeds of converters in consumer applications.

Maximum Ratings & Electrical Characteristics (T _A =25°C unless otherwise noted)				
Parameter	Symbol	SGP4U	SGP5U	Unit
Maximum repetitive peak reverse voltage	V _{RRM}	400	600	V
Maximum RMS voltage	V _{RMS}	280	420	V
Maximum DC blocking voltage	V _{DC}	400	600	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}	25		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°C unless otherwise noted)			
Parameter	Symbol	Typ	Unit
Thermal Resistance, Junction to Ambient	R _{θJA}	120	°C/W
Thermal Resistance, Junction to Case	R _{θJC}	40	°C/W
Thermal Resistance, Junction to Lead	R _{θJL}	40	°C/W

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

Parameter	Symbol	Test Conditions	SGP4U	SGP5U	Unit
Forward Drop Voltage	V _F	I _F =1A	1.3	1.7	V
Reverse leakage current @V _R	I _R	T _J =25°C	5		uA
		T _J =125°C	50		
Typical junction capacitance	C _J	4.0 V 1 MHz	6.2	4.3	pF
Maximum reverse recovery time	trr	I _F =0.5A, I _R =1.0A, I _{RR} =0.25A	35		nS

Note:

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

Ratings and Characteristics Curves

(TA = 25°C unless otherwise noted)

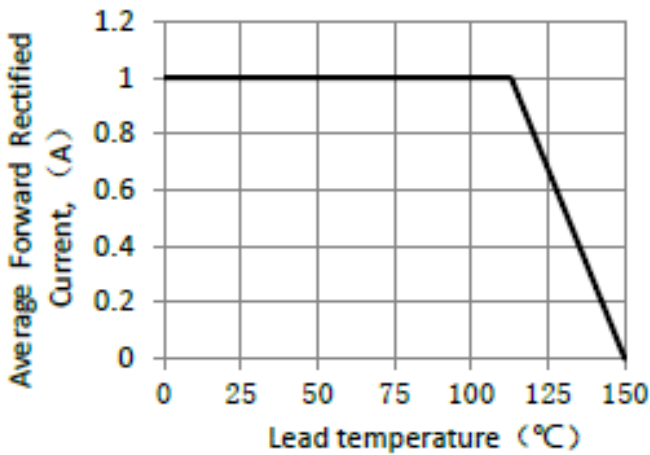


Figure 1. Forward Current Derating Curve

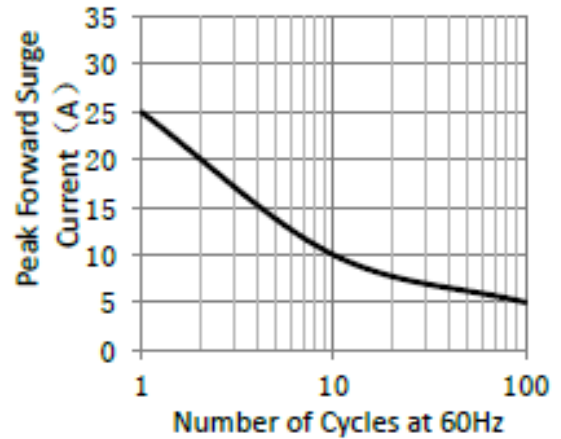


Figure 2. Maximum Non-Repetitive Peak Forward Surge Current

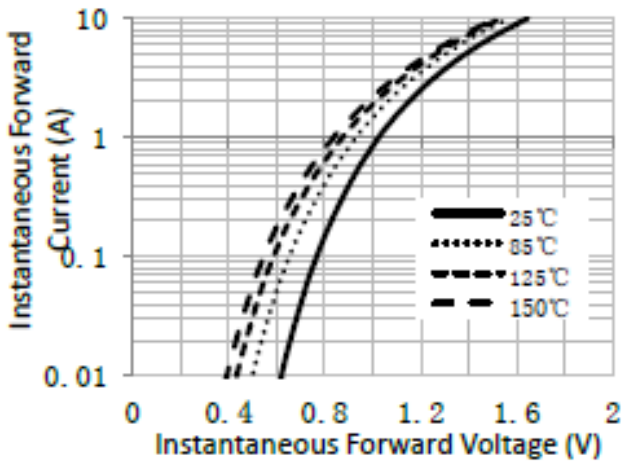


Figure 3. Typical Instantaneous Forward Characteristics (SGP4U)

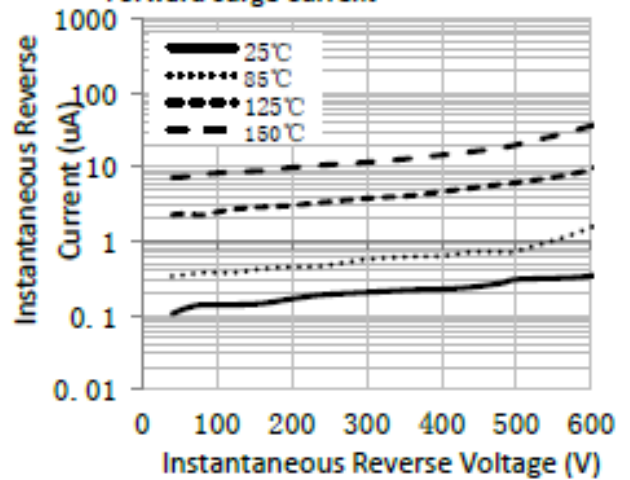


Figure 4. Typical Reverse Characteristics

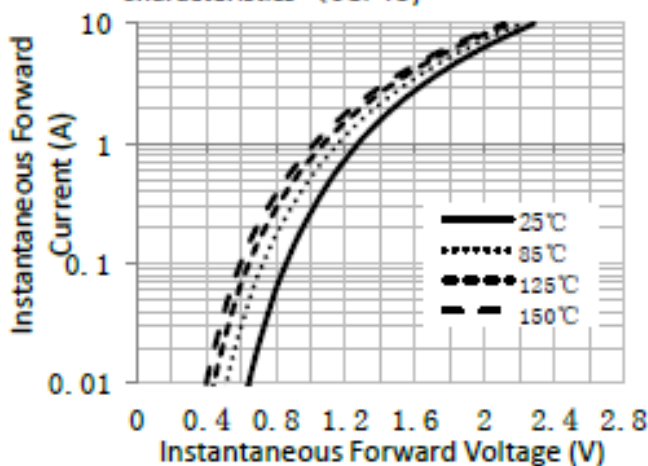


Figure 5. Typical Instantaneous Forward Characteristics (SGP5U)

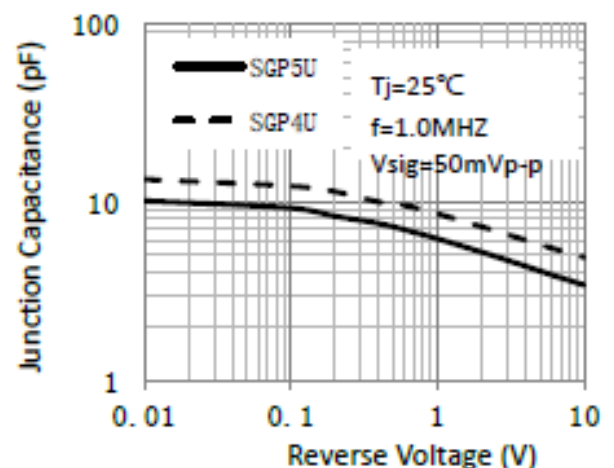
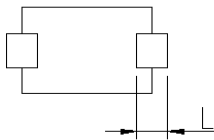
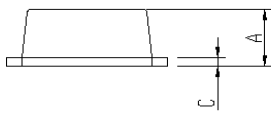
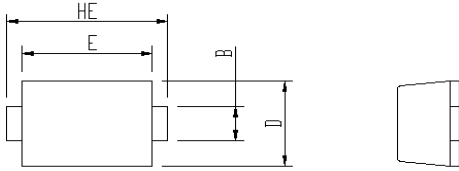


Figure 6. Typical Junction Capacitance

Package Outline Dimensions

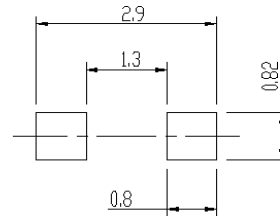
in inches (millimeters)

eSGP (SOD-323F)



Package	Unit:mm		Unit:inch	
	MIN	MAX	MIN	MAX
A	0.9	1.08	0.035	0.043
B	0.5	0.7	0.020	0.028
C	0.1	0.25	0.004	0.010
D	1.4	1.6	0.055	0.063
E	2.0	2.2	0.079	0.087
L	0.35	0.65	0.014	0.026
HE	2.4	2.8	0.094	0.110

Soldering footprint



Revision History

Document Version	Date of release	Description of changes
Rev.A	2021.06.01	Released Datasheet
Rev.B	2023.10.16	Modify document format

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