GOOD-ARK SEMICONDUCTOR

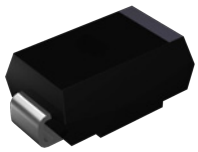
GSHS1Q

Ultrafast Recovery Rectifier
Reverse Voltage 1300V Forward Current 1.0 A

Features

- Glass passivated junction chip
- For surface mounted application
- Solder dip 260°C, 10s
- Built-in strain relief, ideal for automated placement
- Fast switching for high efficiency
- Halogen-free according to IEC 61249-2-21 definition
- Plastic package has Underwriters Laboratory Flammability Classification 94V-0

RoHS COMPLIANT



DO-214AC (SMA)

Typical Applications

For use of general purpose rectification in lighting, cellular phone, portable device, power suppliers and other consumer applications.

Absolute Maximum Ratings (T_A=25°C unless otherwise specified)

Parameter	Symbol	Value	Unit
Maximum Repetitive Peak Reverse Voltage	V_{RRM}	1300	V
Maximum RMS Voltage	V_{RMS}	910	V
Maximum DC Blocking	V_{DC}	1300	V
Maximum Average Forward Rectified Current	$I_{F(AV)}$	1.0	A
Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load	I_{FSM}	20	A
Non-Repetitive Avalanche Energy at T_A=25°C, I_{AS}=1A, L=30mH	E_{AS}	15	mJ
Operating Junction and Storage Temperature Range	T_J, T_{STG}	-55 to + 150	°C
Typical Thermal Resistance[1]	$R_{\theta JA}$	50	°C/W
	$R_{\theta JL}$	20	

Notes:
1. Thermal resistance from junction to ambient and from junction to lead, PCB mounted on 0.95" x 0.95" (24 mm x 24 mm) copper pad areas.

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

Parameter	Symbol	Conditions	Value	Unit
Maximum Instantaneous Forward Voltage[1]	V_F	I_F=1.0A, T_J=25°C	3.0	V
Maximum DC Reverse Current at Rated DC Blocking Voltage[2]	I_R	T_J=25°C	5.0	μA
		T_J=125°C	50	
Typical Reverse Recovery Time	t_{rr}	I_F=0.5A, I_R=1.0A, I_{RR}=0.25A	75	nS
Typical Junction Capacitance	C_J	4.0V, 1MHz	8.0	pF

Note:

1. Pulse test: 300μs pulse width, 1% duty cycle
2. Pulse test: Pulse width ≤40ms

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

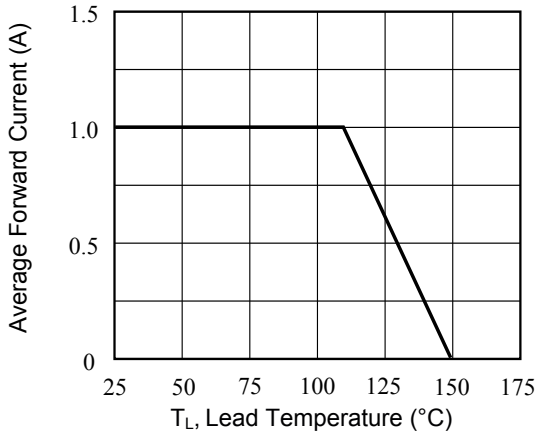


Figure 1. Maximum Forward Current Derating Curve

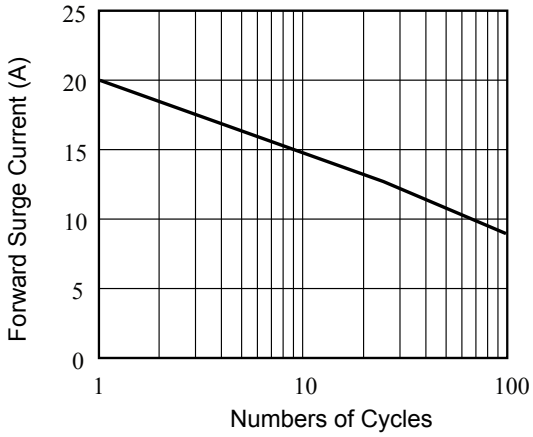


Figure 2. Maximum Non-Repetitive Forward Surge Current

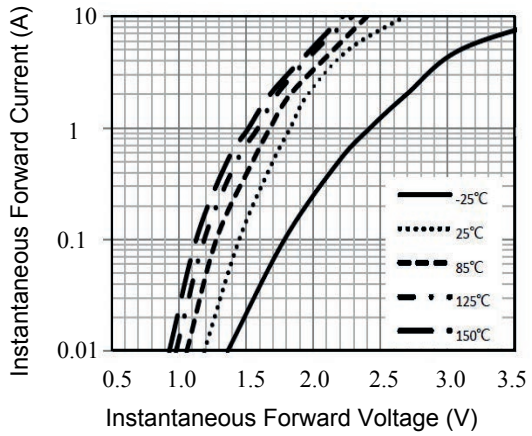


Figure 3. Typical Instantaneous Forward Characteristics

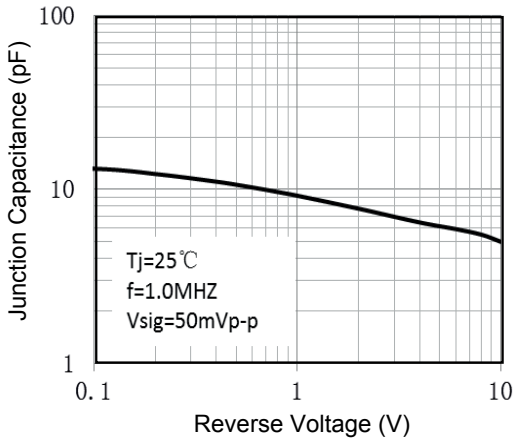


Figure 4. Typical Junction Capacitance

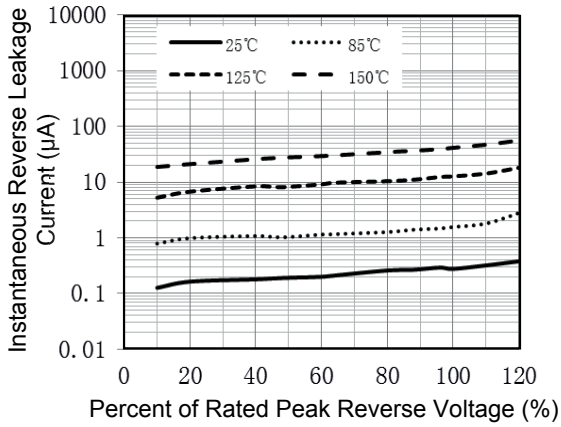
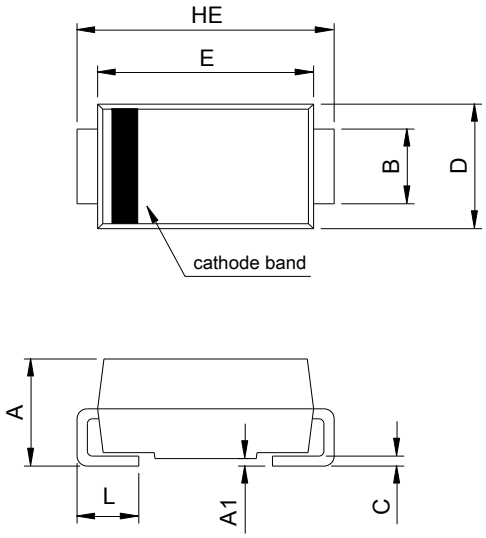


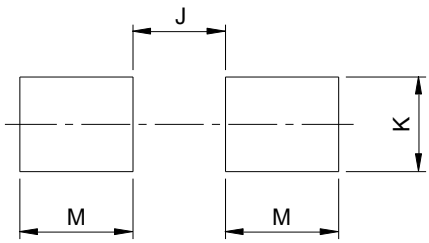
Figure 5. Typical Reverse Leakage Characteristics

Package Outline Dimensions DO-214AC (SMA)



SMA (DO-214AC)				
DIM	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	1.90	2.30	0.075	0.091
A1	0.00	0.20	0.000	0.008
B	1.25	1.65	0.049	0.065
C	0.15	0.31	0.006	0.012
D	2.35	2.90	0.093	0.114
E	3.99	4.60	0.157	0.181
HE	4.80	5.30	0.189	0.209
L	0.76	1.52	0.030	0.060

Recommended Pad Layout



Recommended Pad Layout (Reference ONLY)				
DIM	Millimeters		Inches	
	Min.	Max.	Min.	Max.
J	-	2.20	-	0.087
K	1.72	-	0.068	-
M	2.00	-	0.079	-