GS1AAQ-GS1MAQ

Surface Mount General-purpose Rectifiers

FEATURES

- Glass Passivated Die Construction
- Fast Recovery Time for High Efficiency
- Low reverse leakage
- Ideally Suited for Automatic Assembly
- Meet AEC-Q101 Requirements

DO-214AC(SMA)

Schematic Symbol

MECHANICAL DATA

- Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020

APPROVALS

RoHS	Compliance with 2011/65/EU
HF	Compliance with IEC61249-2-21:2003

MAXIMUM RATINGS AND CHARACTERISTICS (T_A=25°C)

Parameter	Symbol	GS1AAQ	GS1BAQ	GS1DAQ	GS1GAQ	GS1JAQ	GS1KAQ	GS1MAQ	Unit
Marking		GS1A	GS1B	GS1D	GS1G	GS1J	GS1K	GS1M	
Maximum repetitive peak reverse voltage	V_{RRM}	50	100	200	400	600	800	1000	V
Maximum RMS voltage	V_{RMS}	35	70	140	280	420	560	700	
Maximum DC blocking voltage	V_{DC}	50	100	200	400	600	800	1000	
Average rectified output current @60Hz sine wave, resistance load, TL (Fig.1)	I_O	1.0							A
Forward Surge Current (Non-repetitive) @60Hz Half-sine wave,1 cycle, T_j=25°C	I_{FSM}	30							
Typical Junction capacitance Measured at 1MHz and Applied Reverse Voltage of 4.0 V.D.C	C_J	8							pF
Operating junction temperature range	T_J	-55~+150							°C
Storage temperature range	T_{STG}	-55~+150							
Typical Thermal Resistance (1)	$R_{\theta J-A}$	70							°C/W
Typical Thermal Resistance (1)	$R_{\theta J-L}$	22							

Note
(1) Thermal resistance from junction to ambient and from junction to lead mounted on P.C.B. with 0.2" x 0.2" (5.0 mm x 5.0 mm) copper pad areas

ELECTRICAL CHARACTERISTICS (T_A=25°C)

Parameter		Symbol	GS1AAQ	GS1BAQ	GS1DAQ	GS1GAQ	GS1JAQ	GS1KAQ	GS1MAQ	Unit
Maximum instantaneous forward voltage drop per diode @1A		V_F	1.1							V
Maximum reverse current @rated V_R	T_J=25°C	I_R	5							μA
	T_J=125°C		100							

CHARACTERISTIC CURVES

Fig.1 Forward Current Derating Curve

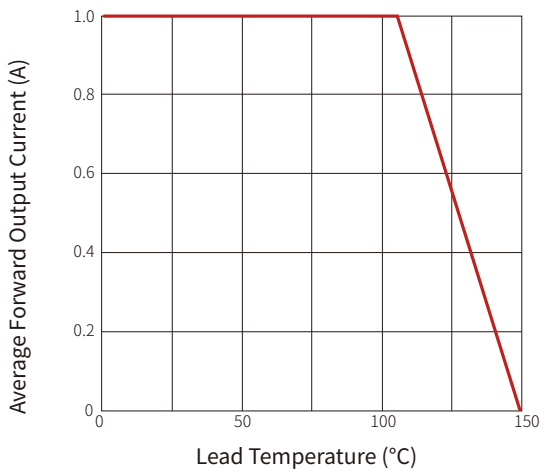


Fig.2 Forward Surge Current Capability

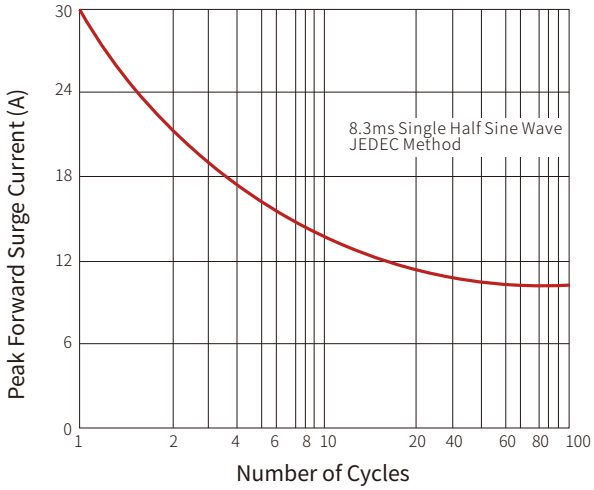


Fig.3 Typical Forward Voltage

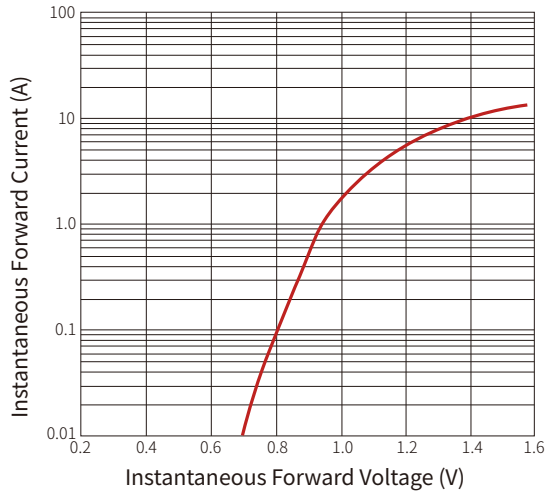
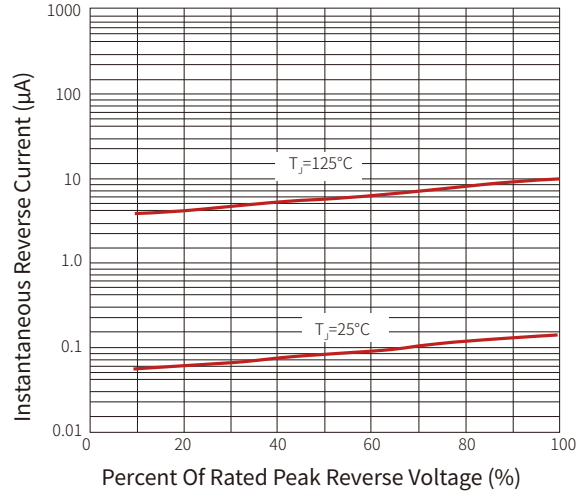
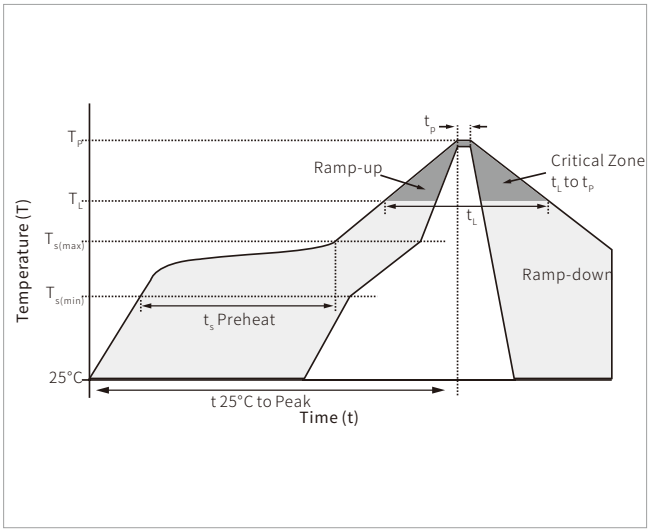


Fig.4 Typical Reverse Characteristics

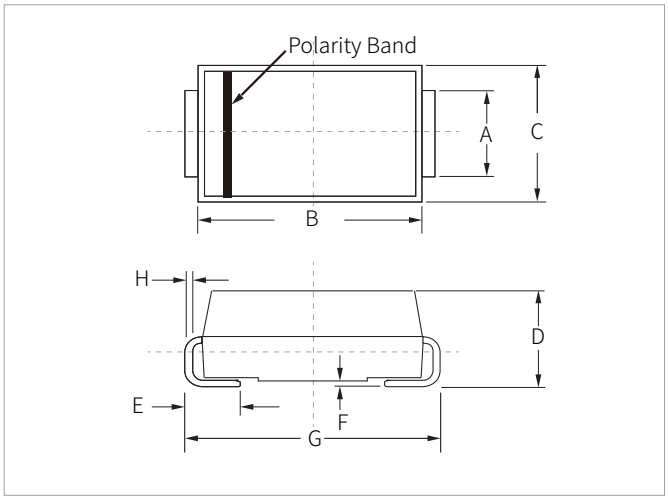


SOLDERING PARAMETERS

Reflow Condition		Lead–free assembly
Pre Heat	Temperature Max ($T_{s(min)}$)	150°C
	Temperature Max ($T_{s(max)}$)	200°C
	Time (min to max) (t_s)	60 – 180 secs
Average ramp up rate (Liquidus Temp (T_L) to peak		3°C/second max
	$T_{S(max)}$ to T_L - Ramp-up Rate	3°C/second max
Reflow	Temperature (T_L) (Liquidus)	217°C
	Time (min to max) (t_L)	60 – 150 seconds
Peak Temperature (T_P)		260°C
Time within 5°C of actual peak Temperature (t_p)		20 – 40 seconds
Ramp-down Rate		6°C/second max
Time 25°C to peak Temperature (T_P)		8 minutes max.
Do not exceed		260°C

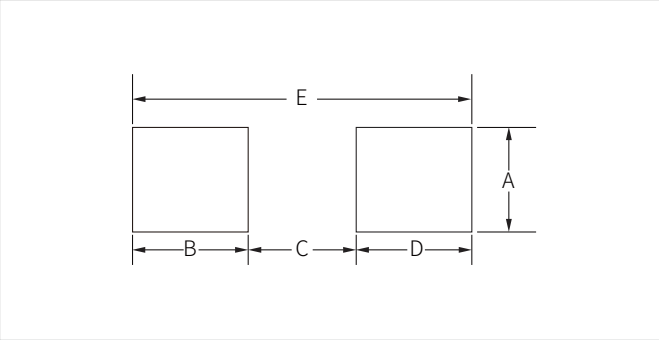


DO-214AC(SMA) PACKAGE INFORMATION



Ref.	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	1.20	1.60	0.047	0.063
B	4.20	4.60	0.165	0.181
C	2.40	2.80	0.094	0.110
D	2.00	2.40	0.079	0.094
E	0.76	1.52	0.030	0.060
F	0.02	0.20	0.001	0.008
G	4.85	5.25	0.191	0.207
H	0.15	0.30	0.006	0.012

RECOMMENDED PAD LAYOUT DIMENSIONS



Ref.	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	1.63	-	0.064	-
B	1.45	-	0.057	-
C	-	2.80	-	0.090
D	1.45	-	0.057	-
E	5.28REF		0.208REF	

ORDERING INFORMATION

Part Number	Component Package	QTY/Reel	Reel Size
GS1AAQ-GS1MAQ	DO-214AC(SMA)	5000PCS	13”

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