

GSUS2A thru GSUS2M

Surface Mount High Efficient Rectifiers
 Reverse Voltage 50V-1000V Forward Current 2.0A

Features

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



DO-214AA (SMB)

Mechanical Data

- Package: DO-214AA (SMB)
- Molding compound meets UL 94V-0 flammability rating, RoHS-compliant, halogen-free
- Terminals: Tin plated leads, solderable per STD-002 and JESD22-B102
- Polarity: Cathode line denotes the cathode end

Typical Applications

For use in high frequency rectification of power supplies, inverters, converters, and freewheeling diodes for consumer and telecommunication.

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

Parameter	Symbol	GS US2A	GS US2B	GS US2D	GS US2F	GS US2G	GS US2J	GS US2K	GS US2M	Unit
Maximum Repetitive Peak Reverse Voltage	V _{RRM}	50	100	200	300	400	600	800	1000	V
Maximum RMS Voltage	V _{RMS}	35	70	140	210	280	420	560	700	V
Maximum DC Blocking Voltage	V _{DC}	50	100	200	300	400	600	800	1000	V
Average Rectified Output Current @ 60Hz Sine Wave, Resistance Load, T _L (Fig.1)	I _o	2.0								A
Forward Surge Current (Non-repetitive) @ 60Hz Half-Sine Wave, 1 cycle, T _J =25°C	I _{FSM}	50								A
Forward Surge Current (Non-repetitive) @ 1ms, Square Wave, 1 cycle, T _J =25°C		100								
Current Squared Time @ 1ms ≤ t ≤ 8.3ms, T _J =25°C, Rating of Per Diode	I ² t	10.375								A ² s
Typical Junction Capacitance @ Measured at 1MHz and Applied Reverse Voltage of 4.0V.D.C	C _J	32			17		12			pF
Typical Thermal Resistance ¹	R _{θJA}	70								°C/W
	R _{θJL}	22								
	R _{θJC}	18								
Storage Temperature	T _{stg}	-55 to +150								°C
Junction Temperature	T _J	-55 to +150								°C

Note:

1. Thermal resistance from junction to ambient and from junction to lead mounted on P.C.B. with 0.3" x 0.3" (8.0 mm x 8.0 mm) copper pad areas.

Electrical Characteristics ($T_A=25^\circ\text{C}$ unless otherwise noted)

Parameter	Symbol	Test Conditions	GS US2A	GS US2B	GS US2D	GS US2F	GS US2G	GS US2J	GS US2K	GS US2M	Unit
Maximum Instantaneous Forward Voltage Drop Per Diode	V_F	$I_{FM}=2.0\text{A}$	1.0			1.3		1.7			V
Maximum Reverse Recovery Time	t_{rr}	$I_F=0.5\text{A}$, $I_R=1.0\text{A}$, $I_{rr}=0.25\text{A}$	50					75			ns
Maximum DC Reverse Current at Rated DC Blocking Voltage Per Diode	I_R	$T_J=25^\circ\text{C}$	5.0								μA
		$T_J=125^\circ\text{C}$	100								

Typical Characteristics Curves

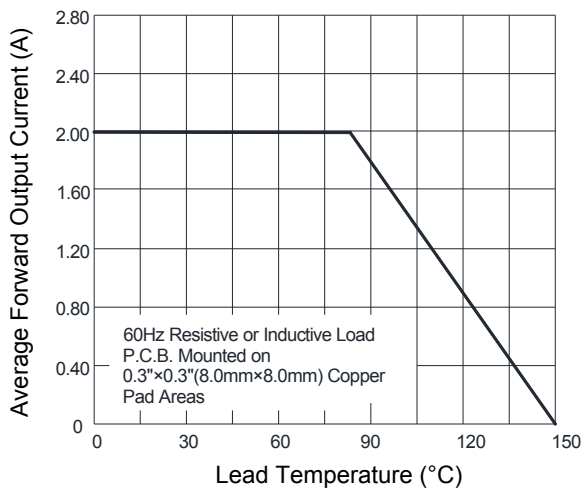


Figure 1. I_o - T_L Curve

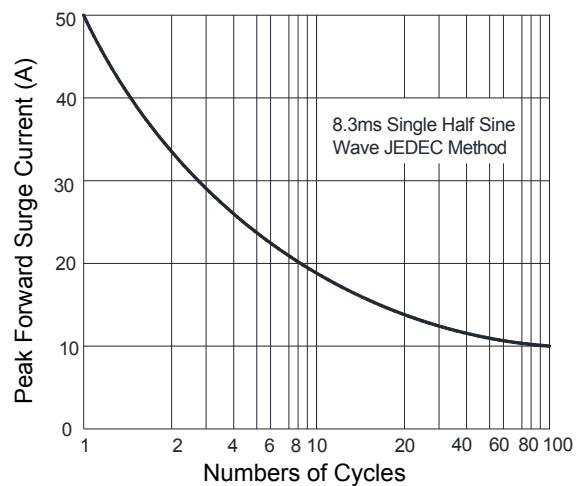


Figure 2. Forward Surge Current Capability

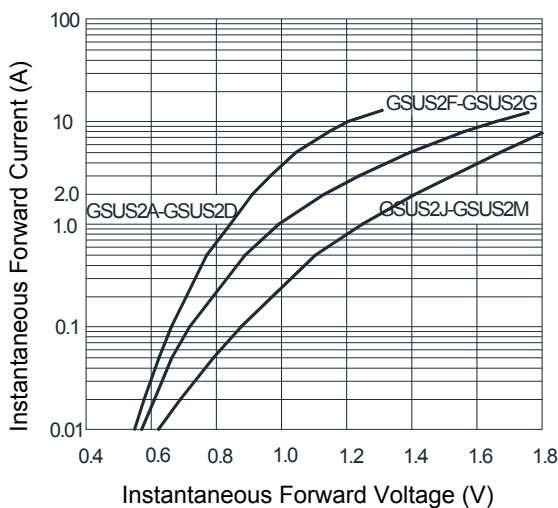


Figure 3. Typical Forward Characteristics

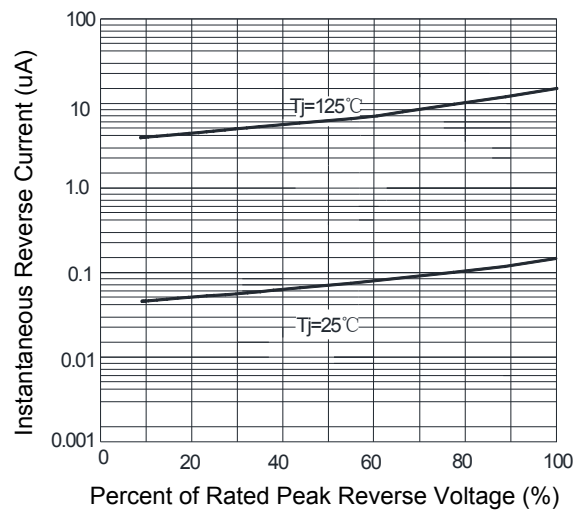
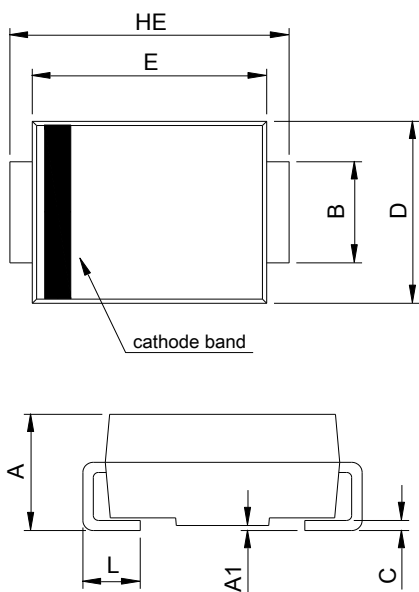


Figure 4. Typical Reverse Characteristics

GSUS2A thru GSUS2M

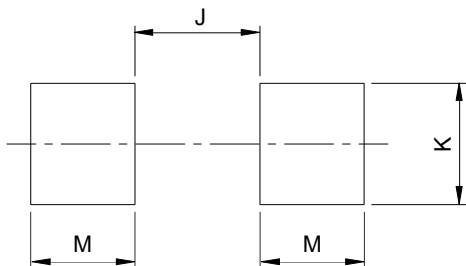
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Package Outline Dimensions DO-214AA (SMB)



SMB (DO-214AA)				
DIM	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	1.95	2.65	0.077	0.104
A1	0.00	0.20	0.000	0.008
B	1.95	2.20	0.077	0.087
C	0.15	0.31	0.006	0.012
D	3.30	3.95	0.130	0.156
E	4.06	4.60	0.160	0.181
HE	5.10	5.60	0.201	0.220
L	0.76	1.60	0.030	0.063

Recommended Pad Layout



Recommended Pad Layout (Reference ONLY)				
DIM	Millimeters		Inches	
	Min.	Max.	Min.	Max.
J	-	2.60	-	0.102
K	2.20	-	0.087	-
M	1.80	-	0.071	-

Order Information

Device	Package	Marking	Carrier	Quantity
GSUS2A	DO-214AA (SMB)	US2A	Tape & Reel	3,000 pcs / Reel
GSUS2B	DO-214AA (SMB)	US2B	Tape & Reel	3,000 pcs / Reel
GSUS2D	DO-214AA (SMB)	US2D	Tape & Reel	3,000 pcs / Reel
GSUS2F	DO-214AA (SMB)	US2F	Tape & Reel	3,000 pcs / Reel
GSUS2G	DO-214AA (SMB)	US2G	Tape & Reel	3,000 pcs / Reel
GSUS2J	DO-214AA (SMB)	US2J	Tape & Reel	3,000 pcs / Reel
GSUS2K	DO-214AA (SMB)	US2K	Tape & Reel	3,000 pcs / Reel
GSUS2M	DO-214AA (SMB)	US2M	Tape & Reel	3,000 pcs / Reel

For more information, please contact us at: inquiry@goodarksemi.com