

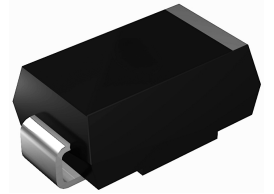
# GSH5MC100 thru GSH5MC600

Super Fast Recovery Rectifiers

Reverse Voltage 100V to 600V Forward Current 5.0A

## Features

- Super fast reverse recovery time
- Low leakage current
- Low switching losses, high efficiency
- High forward surge capability
- Solder dip 260°C max. 10s, per JESD 22-B106



## Typical Applications

DO-214AB (SMC)

For use in high frequency rectification and freewheeling application in switching mode converters and inverters for consumer, computer and telecommunication.

## Mechanical Data

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

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

Parameter	Symbol	GSH5MC 100	GSH5MC 200	GSH5MC 400	GSH5MC 600	Unit
Maximum Repetitive Peak Reverse Voltage	$V_{RRM}$	100	200	400	600	V
Maximum RMS Voltage	$V_{RMS}$	70	140	280	420	V
Maximum DC Blocking Voltage	$V_{DC}$	100	200	400	600	V
Average Rectified Output Current @ 60Hz Sine Wave, Resistance Load, $T_L$ (FIG.1)	$I_o$	5.0				A
Forward Surge Current (Non-Repetitive) @ 60Hz Half-Sine Wave, 1 Cycle, $T_J=25^\circ\text{C}$	$I_{FSM}$	150.0				A
Forward Surge Current (Non-Repetitive) @ 1ms, Square Wave, 1 Cycle, $T_J=25^\circ\text{C}$		300.0				
Current Squared Time @ $1\text{ms} \leq t \leq 8.3\text{ms}$ , $T_J=25^\circ\text{C}$	$I^2t$	94.0				$\text{A}^2\text{S}$
Typical Thermal Resistance, Junction to Ambient <sup>1</sup>	$R_{\theta JA}$	50.0				$^\circ\text{C}/\text{W}$
Typical Thermal Resistance, Junction to Lead <sup>1</sup>	$R_{\theta JL}$	15.0				$^\circ\text{C}/\text{W}$
Typical Thermal Resistance, Junction to Case <sup>1</sup>	$R_{\theta JC}$	12.0				$^\circ\text{C}/\text{W}$
Storage Temperature Range	$T_{STG}$	-55 to +150				$^\circ\text{C}$
Junction Temperature Range	$T_J$	-55 to +150				$^\circ\text{C}$

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## Electrical Characteristics (T<sub>A</sub>=25°C unless otherwise noted)

Parameter	Symbol	Condition	GSH5MC 100	GSH5MC 200	GSH5MC 400	GSH5MC 600	Unit
Maximum Instantaneous Forward Voltage	V <sub>F</sub>	I <sub>FM</sub> =5.0A	0.95		1.3	1.7	V
Maximum Reverse Recovery Time	t <sub>rr</sub>	I <sub>F</sub> =0.5A, I <sub>R</sub> =1.0A, I <sub>rr</sub> =0.25A	35				nS
Maximum DC Reverse Current at Rated DC Blocking Voltage	I <sub>R</sub>	T <sub>J</sub> =25°C	5				μA
		T <sub>J</sub> =125°C	100				
Typical Junction Capacitance	C <sub>J</sub>	Measured at 1MHz and Applied Reverse Voltage of 4.0V.D.C	75		37	35	pF

Note:

1. Thermal resistance from junction to ambient and from junction to lead mounted on P.C.B. with 0.6" x 0.6" (16mm x 16mm) copper pad areas

## Ratings and Characteristics Curves

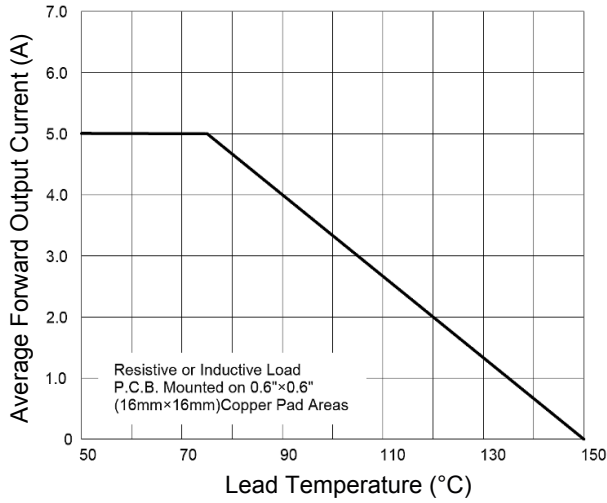


Figure 1.  $I_o$ - $T_L$  Curve

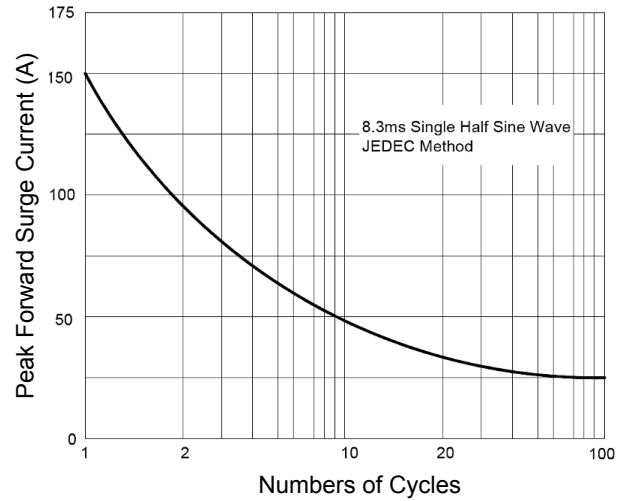


Figure 2. Forward Surge Current Capability

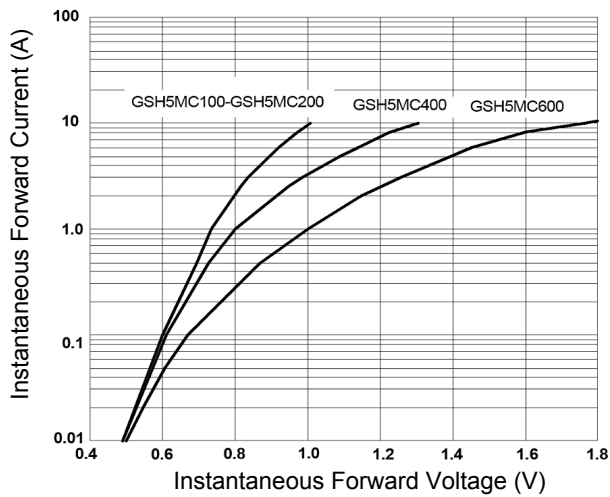


Figure 3. Forward Voltage

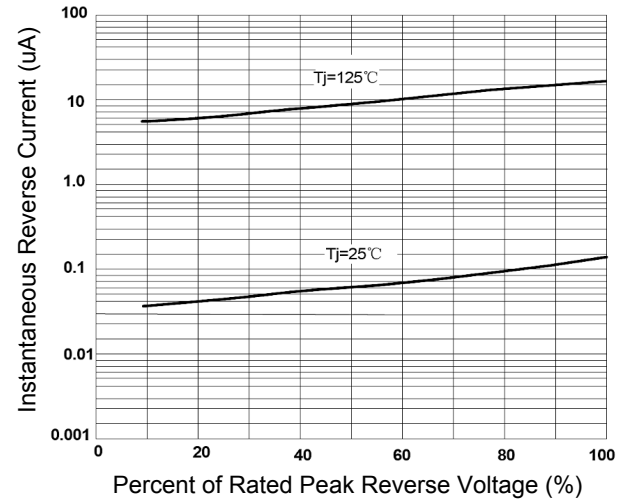
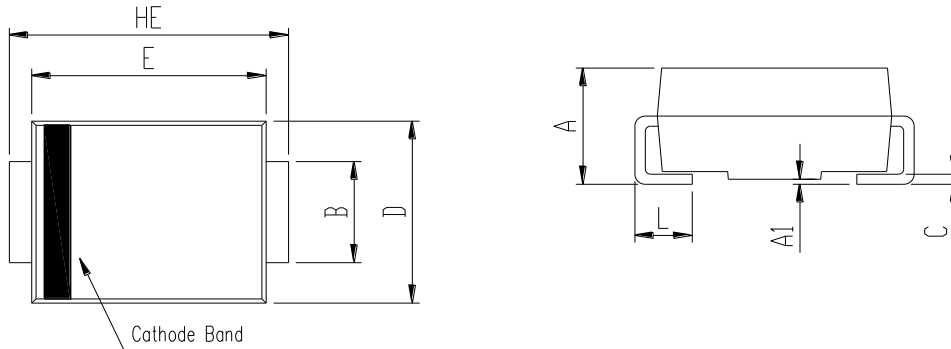


Figure 4. Typical Reverse Characteristics

# GSH5MC100 thru GSH5MC600

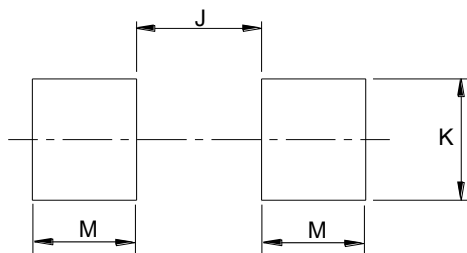
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 Reverse Voltage 100V to 600V Forward Current 5.0A

## Package Outline Dimensions DO-214AB (SMC)



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	2.00	2.62	0.079	0.103
A1	0.00	0.20	0.000	0.008
B	2.90	3.20	0.114	0.126
C	0.15	0.31	0.006	0.012
D	5.58	6.22	0.220	0.245
E	6.60	7.15	0.260	0.281
HE	7.75	8.15	0.305	0.321
L	0.76	1.60	0.030	0.063

## Recommended Pad Layout



SMC Recommended Pad Layout (Reference ONLY)				
DIM	Millimeters		Inches	
	Min.	Max.	Min.	Max.
J	-	4.60	-	0.181
K	3.20	-	0.126	-
M	2.00	-	0.079	-

## Order Information

Device	Package	Marking	Carrier	Quantity
GSH5MC100	DO-214AB (SMC)	C100	Tape & Reel	3,000 Pcs / Reel
GSH5MC200	DO-214AB (SMC)	C200	Tape & Reel	3,000 Pcs / Reel
GSH5MC400	DO-214AB (SMC)	C400	Tape & Reel	3,000 Pcs / Reel
GSH5MC600	DO-214AB (SMC)	C600	Tape & Reel	3,000 Pcs / Reel

For more information, please contact us at: [inquiry@goodarksemi.com](mailto:inquiry@goodarksemi.com)