

## Features

- Ultrafast 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

## Mechanical Data

- Case: DO-214AB (SMC)
- Molding compound meets UL 94V-0 flammability rating
- Terminal: Tin plated leads, solderable per J-STD-002
- Polarity: Color band denotes the cathode end



DO-214AB (SMC)

## Applications

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

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

Parameter	Symbol	GSMURS320	GSMURS340	GSMURS360	Unit
Maximum Repetitive Peak Reverse Voltage	V <sub>RRM</sub>	200	400	600	V
Maximum RMS Voltage	V <sub>RMS</sub>	140	280	420	V
Maximum DC Blocking Voltage	V <sub>DC</sub>	200	400	600	V
Average Rectified Output Current @60Hz Sine Wave, Resistance Load, T <sub>L</sub> (FIG.1)	I <sub>O</sub>	3			A
Forward Surge Current (Non-Repetitive) @60Hz Half-Sine Wave, 1 cycle, T <sub>J</sub> =25°C	I <sub>FSM</sub>	100			A
Forward Surge Current (Non-Repetitive) @1ms, Square Wave, 1 cycle, T <sub>J</sub> =25°C		200			
Current Squared Time @1ms ≤ t ≤ 8.3ms, T <sub>J</sub> =25°C	I <sup>2</sup> t	41.5			A <sup>2</sup> s
Typical Thermal Resistance, Junction to Ambient <sup>1</sup>	R <sub>θJA</sub>	50			°C/W
Typical Thermal Resistance, Junction to Lead <sup>1</sup>	R <sub>θJL</sub>	20		18	
Typical Thermal Resistance, Junction to Case <sup>1</sup>	R <sub>θJC</sub>	15		12	
Storage Temperature Range	T <sub>stg</sub>	-55 to +150			°C
Junction Temperature Range	T <sub>J</sub>	-55 to +150			°C

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.

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

Parameter	Symbol	Test Conditions	GS	GS	GS	Unit
			MURS320	MURS340	MURS360	
Maximum Instantaneous Forward Voltage	$V_F$	$I_{FM}=3.0\text{A}$	0.92	1.25		V
Maximum Reverse Recovery Time	$t_{rr}$	$I_F=0.5\text{A}$ , $I_R=1.0\text{A}$ , $I_{rr}=0.25\text{A}$	35	50		ns
Maximum DC Reverse Current at Rated DC Blocking Voltage	$I_R$	$T_J=25^\circ\text{C}$	5			$\mu\text{A}$
		$T_J=125^\circ\text{C}$	50			
Typical Junction Capacitance	$C_J$	Measured at 1MHz and Applied Reverse Voltage of 4.0V.D.C	63	55	50	pF

## Dynamic Characteristics

GSMURS320							
Parameter	Symbol	Test Conditions		Min	Typ	Max	Unit
Reverse Recovery Time	$T_{RR}$	$I_F=1\text{A}$ , $di/dt=-50\text{A}/\mu\text{s}$ , $V_{RM}=30\text{V}$	$T_J=25^\circ\text{C}$	-	30	-	ns
			$T_J=25^\circ\text{C}$	-	29	-	
			$T_J=125^\circ\text{C}$	-	35	-	
Peak Recovery Current	$I_{RRM}$	$I_F=3\text{A}$ , $di/dt=-200\text{A}/\mu\text{s}$ , $V_{RM}=100\text{V}$	$T_J=25^\circ\text{C}$	-	3.8	-	A
			$T_J=125^\circ\text{C}$	-	6.5	-	
Reverse Recovery Charge	$Q_{rr}$		$T_J=25^\circ\text{C}$	-	39.9	-	nC
			$T_J=125^\circ\text{C}$	-	113.2	-	
Non-Repetitive Avalanche Energy	$E_{AS}$	$I_R=3.6\text{A}$ , $L=15\text{mH}$	$T_J=25^\circ\text{C}$	116.6	-	-	mJ
GSMURS340							
Parameter	Symbol	Test Conditions		Min	Typ	Max	Unit
Reverse Recovery Time	$T_{RR}$	$I_F=1\text{A}$ , $di/dt=-50\text{A}/\mu\text{s}$ , $V_{RM}=30\text{V}$	$T_J=25^\circ\text{C}$	-	40	-	ns
			$T_J=25^\circ\text{C}$	-	32	-	
			$T_J=125^\circ\text{C}$	-	52	-	
Peak Recovery Current	$I_{RRM}$	$I_F=3\text{A}$ , $di/dt=-200\text{A}/\mu\text{s}$ , $V_{RM}=200\text{V}$	$T_J=25^\circ\text{C}$	-	4.8	-	A
			$T_J=125^\circ\text{C}$	-	7.5	-	
Reverse Recovery Charge	$Q_{rr}$		$T_J=25^\circ\text{C}$	-	76.5	-	nC
			$T_J=125^\circ\text{C}$	-	196.6	-	
Non-Repetitive Avalanche Energy	$E_{AS}$	$I_R=0.8\text{A}$ , $L=15\text{mH}$	$T_J=25^\circ\text{C}$	4.8	-	-	mJ
GSMURS360							
Parameter	Symbol	Test Conditions		Min	Typ	Max	Unit
Reverse Recovery Time	$T_{RR}$	$I_F=1\text{A}$ , $di/dt=-50\text{A}/\mu\text{s}$ , $V_{RM}=30\text{V}$	$T_J=25^\circ\text{C}$	-	48	-	ns
			$T_J=25^\circ\text{C}$	-	47	-	
			$T_J=125^\circ\text{C}$	-	71	-	
Peak Recovery Current	$I_{RRM}$	$I_F=3\text{A}$ , $di/dt=-200\text{A}/\mu\text{s}$ , $V_{RM}=400\text{V}$	$T_J=25^\circ\text{C}$	-	5.9	-	A
			$T_J=125^\circ\text{C}$	-	9.0	-	
Reverse Recovery Charge	$Q_{rr}$		$T_J=25^\circ\text{C}$	-	138.1	-	nC
			$T_J=125^\circ\text{C}$	-	319.6	-	
Non-Repetitive Avalanche Energy	$E_{AS}$	$I_R=0.8\text{A}$ , $L=15\text{mH}$	$T_J=25^\circ\text{C}$	4.8	-	-	mJ

## Typical Characteristics Curves

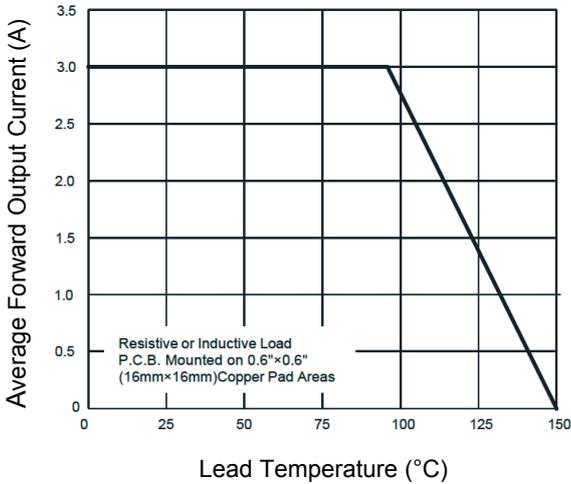


Figure 1.  $I_o$ - $T_L$  Curve (GSMURS320)

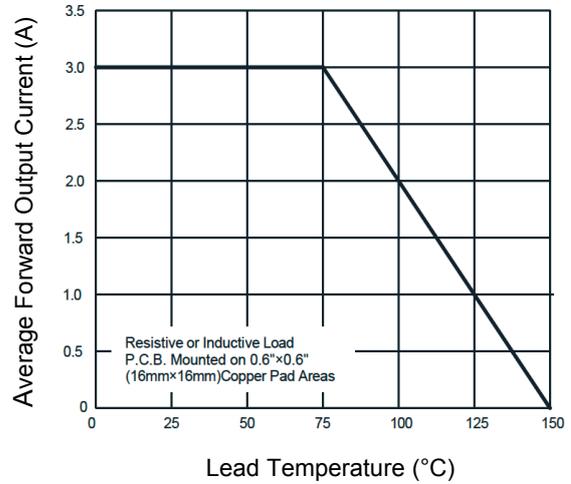


Figure 2.  $I_o$ - $T_L$  Curve (GSMURS340)

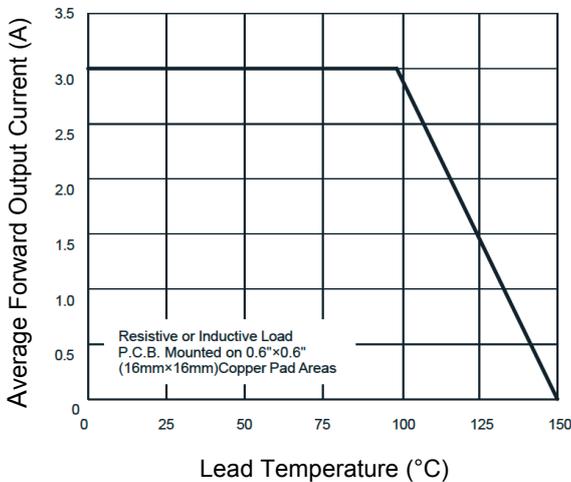


Figure 3.  $I_o$ - $T_L$  Curve (GSMURS360)

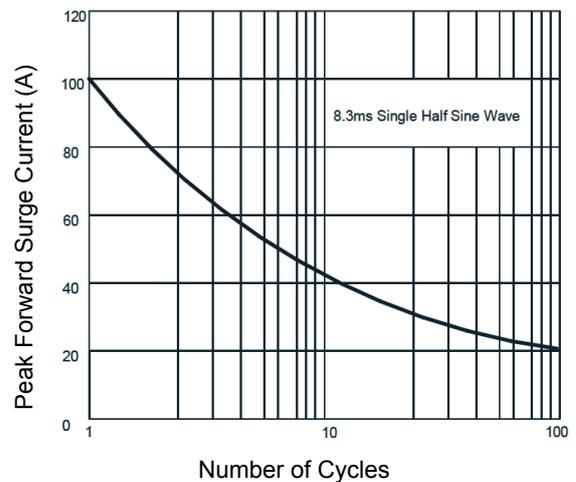


Figure 4. Forward Surge Current Capability

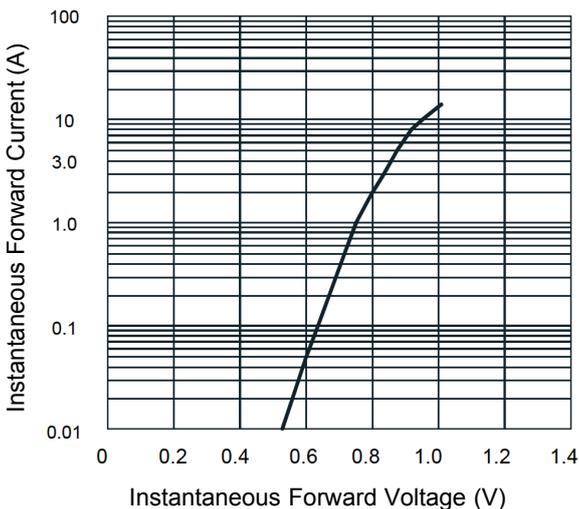


Figure 5. Typical Forward Voltage (GSMURS320)

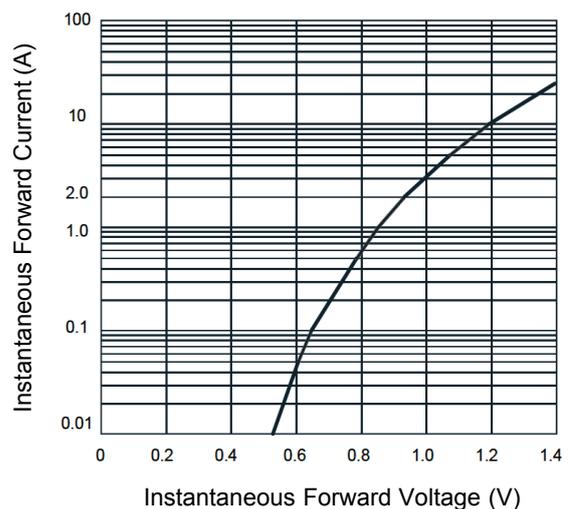
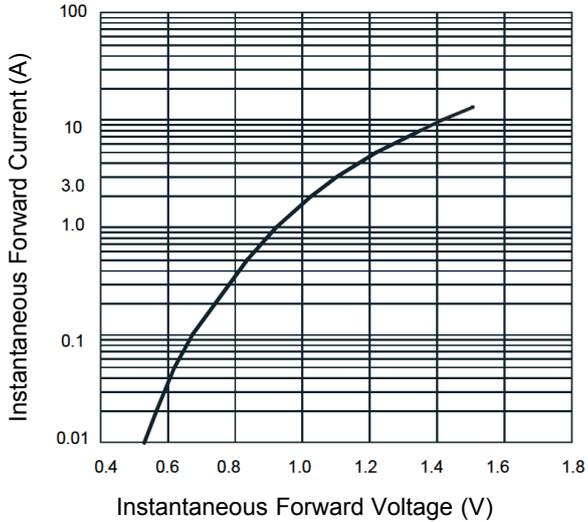
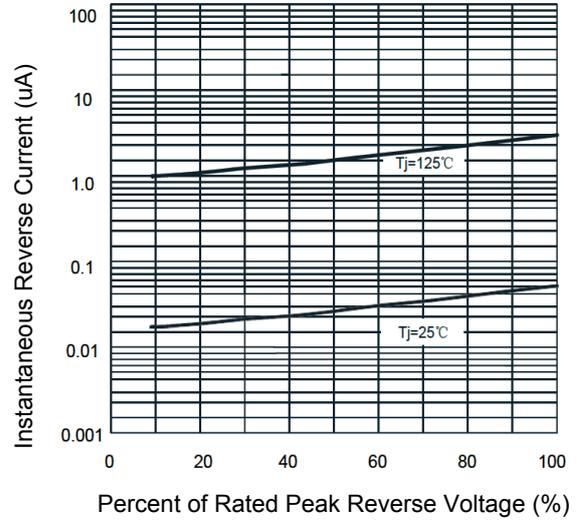


Figure 6. Typical Forward Voltage (GSMURS340)

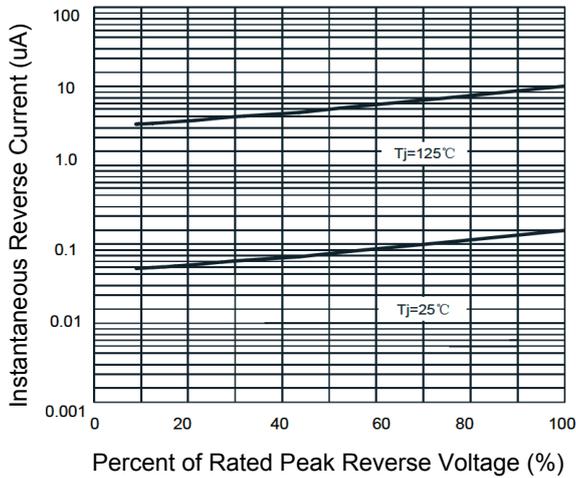
## Typical Characteristics Curves



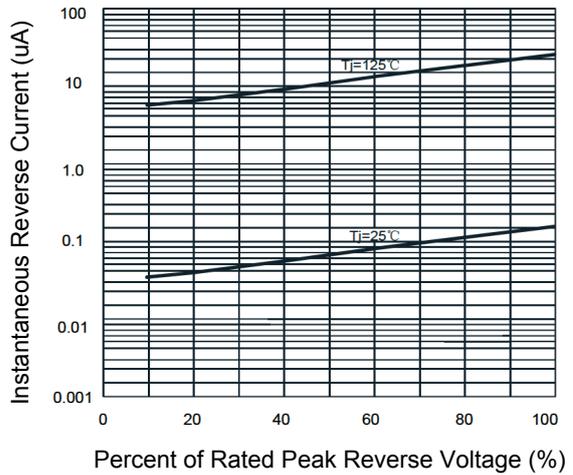
**Figure 7. Typical Forward Voltage (GSMURS360)**



**Figure 8. Typical Reverse Characteristics (GSMURS320)**

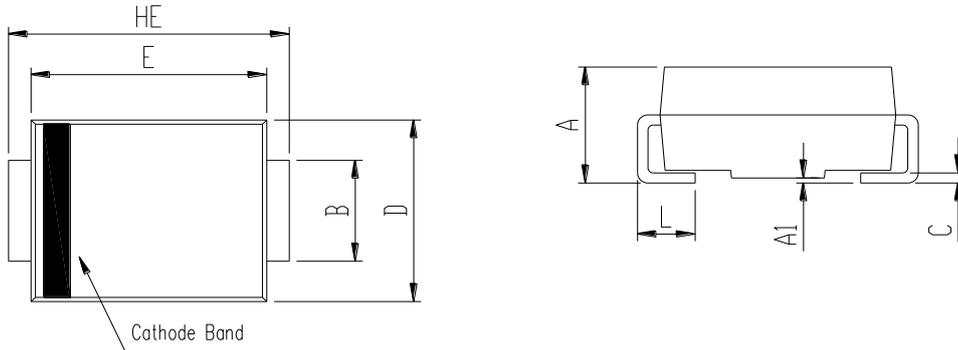


**Figure 9. Typical Reverse Characteristics (GSMURS340)**



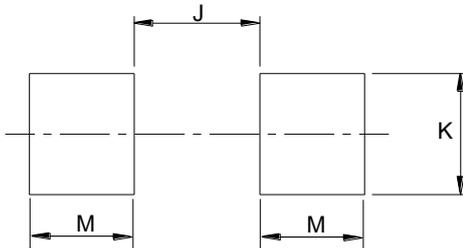
**Figure 10. Typical Reverse Characteristics (GSMURS360)**

## 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



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	Packaging	SPQ
GSMURS320	DO-214AB (SMC)	MURS320	Tape & Reel	3,000 Pcs / Reel
GSMURS340	DO-214AB (SMC)	MURS340	Tape & Reel	3,000 Pcs / Reel
GSMURS360	DO-214AB (SMC)	MURS360	Tape & Reel	3,000 Pcs / Reel