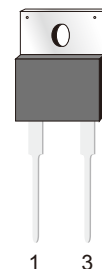


Features

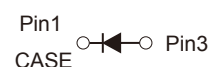
- Plastic package has underwriters laboratory flammability classification 94V-0
- Fred chip planar construction
- Low forward voltage drop
- Ultrafast recovery time
- Soft recovery characteristics
- For use in free wheeling, snubber, clamp, inversion welder, PFC, plating power supply
- High temperature soldering guaranteed: 260°C/10 seconds, 0.25" (6.35mm) from case
- Component in accordance to RoHS 2015/863/EU



TO-220AC

Mechanical Data

- Case: TO-220AC molded plastic body
- Terminals: Lead solderable per MIL-STD-750, method 2026
- Polarity: As marked
- Mounting position: Any



Schematic Diagram

Applications

- For use in boost stage in SMPS
- High frequency inverters for solar inverters
- DC/DC converters
- High frequency output rectification of battery chargers
- Free wheeling diodes in motor drivers

Maximum Ratings (Ratings at 25°C ambient temperature unless otherwise specified)

Parameter	Symbol	Value	Unit
Maximum Repetitive Peak Reverse Voltage	V_{RRM}	600	V
Maximum Average Forward Rectified Current	$I_{F(AV)}$	30.0	A
Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load (JEDEC Method at Rated T_L)	I_{FSM}	300	A
Typical Thermal Resistance ¹	$R_{\theta JC}$	1.0	°C/W
Operating Junction Temperature Range	T_J	-55 to +150	°C
Storage Temperature Range	T_{stg}	-55 to +150	°C

Electrical and Dynamic Recovery Characteristics ($T_J=25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Breakdown Voltage	V_{BR}	$I_R=200\mu\text{A}$	600	-	-	V
Blocking Voltage	V_R					
Instantaneous Forward Voltage ²	V_F	$I_F=30\text{A}, T_J=25^\circ\text{C}$	-	1.3	1.6	V
		$I_F=30\text{A}, T_J=125^\circ\text{C}$	-	1.15	-	
Reverse Current ³	I_R	$V_R=600\text{V}, T_J=25^\circ\text{C}$	-	-	5	μA
		$V_R=600\text{V}, T_J=125^\circ\text{C}$	-	-	50	
Reverse Recovery Time	t_{rr}	$I_F=0.5\text{A}, I_R=1.0\text{A}, I_{rr}=0.25\text{A}$	-	37	50	nS

Notes:

1. Thermal resistance from junction to case
2. Pulse test: 300 μs pulse width, 1% duty cycle
3. Pulse test: pulse width $\leq 40\text{ms}$

Ratings and Characteristics Curves

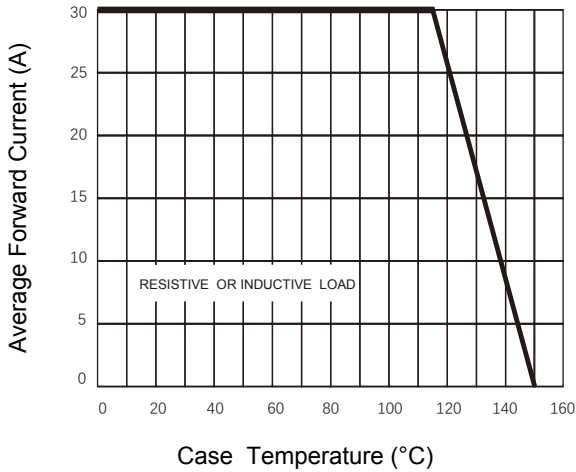


Figure 1. Forward Current Derating Curve

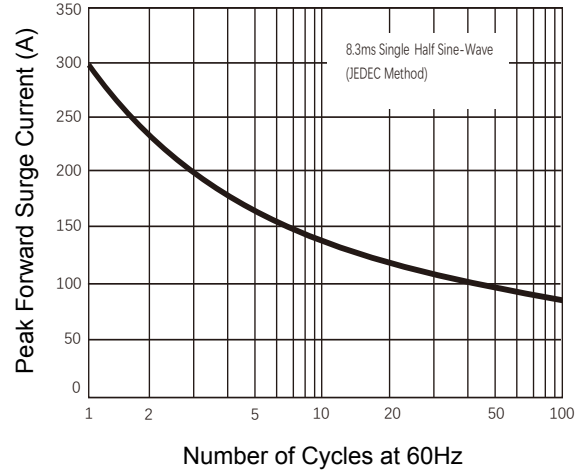


Figure 2. Maximum Non-Repetitive Peak Forward Surge Current

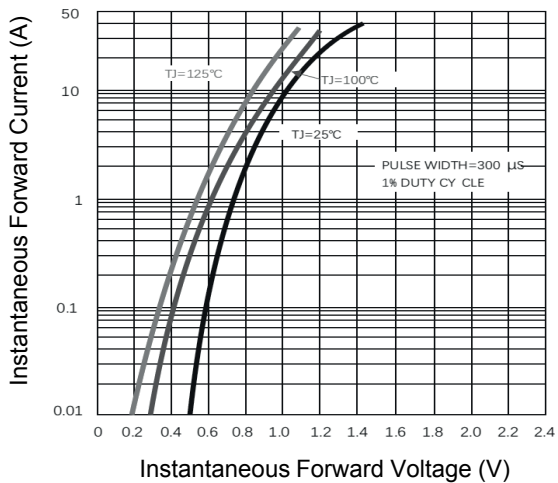


Figure 3. Typical Instantaneous Forward Characteristics

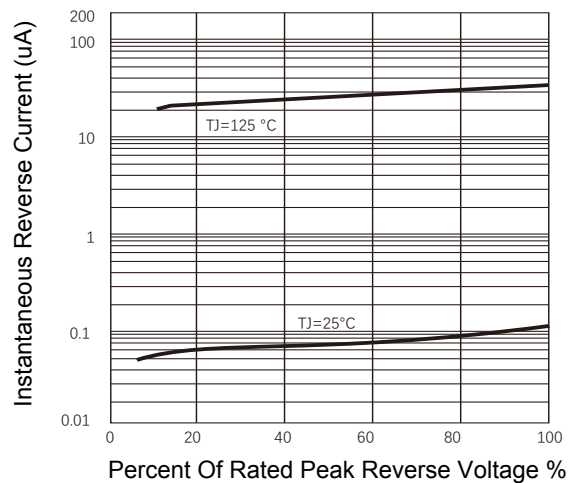
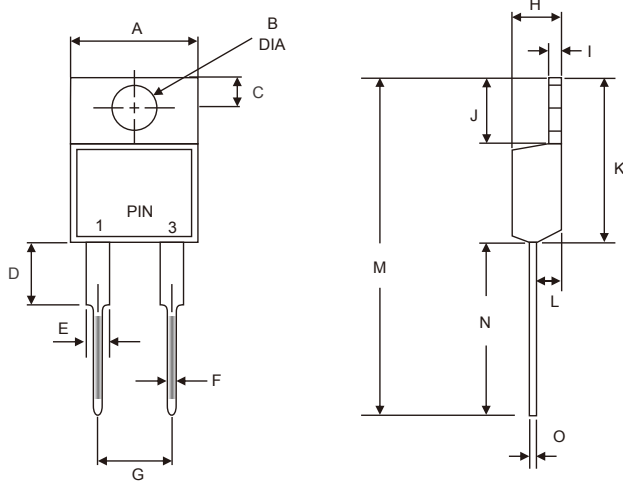


Figure 4. Typical Reverse Characteristics

Package Outline Dimensions (TO-220AC)



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	9.85	10.42	0.388	0.410
B	3.74	4.10	0.147	0.161
C	2.60	2.88	0.102	0.113
D	3.55	4.05	0.140	0.159
E	1.20	1.34	0.047	0.053
F	0.68	0.94	0.027	0.037
G	4.88	5.28	0.192	0.208
H	4.44	4.70	0.175	0.185
I	1.14	1.39	0.045	0.055
J	6.20	7.20	0.244	0.283
K	14.50	15.50	0.571	0.610
L	2.50	2.90	0.098	0.114
M	28.10	29.50	1.106	1.161
N	13.00	14.22	0.512	0.560
O	0.35	0.58	0.014	0.023

Order Information

Device	Package	Marking	Carrier	Quantity
GSMUR3060	TO-220AC	MUR3060	Tube	50pcs / Tube