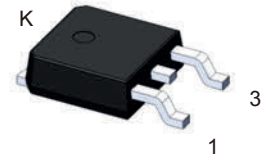
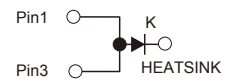


## Features

- Plastic package has Underwriters Laboratory Flammability Classification 94V-0
- Fast switching for high efficiency
- Low forward voltage drop
- Single rectifier construction
- High surge capability
- High temperature soldering guaranteed: 260°C/10 seconds
- Component in accordance to RoHS 2015/863/EU



**TO-252**



**Schematic Diagram**

## Mechanical Data

- Case: JEDEC TO-252 (DPAK) molded plastic body
- Terminals: Solderable per MIL-STD-202, method 208
- Polarity: As marked
- Mounting position: Any

## 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, single phase, half wave, resistive or inductive load. For capacitive load, derate by 20%.)

Parameters	Symbol	Value	Unit
Maximum Repetitive Peak Reverse Voltage	$V_{RRM}$	400	V
Maximum Average Forward Rectified Current	$I_{F(AV)}$	5.0	A
Peak Forward Surge Current 8.3mS Single Half Sine-wave Superimposed on Rated Load (JEDEC Method, Total Device)	$I_{FSM}$	60	A
Rating for Fusing (t=8.3ms)	$I^2t$	14.94	A <sup>2</sup> S
Typical Thermal Resistance <sup>1</sup>	$R_{\theta JC}$	3.0	°C/W
Operating Junction Temperature Range	$T_J$	-55 to +150	°C
Storage Temperature Range	$T_{stg}$	-55 to +150	°C

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

Parameters	Symbol	Test Conditions	Min.	Typ.	Max.	Units	
Breakdown Voltage	$V_{BR}$	$I_R=200\mu\text{A}$	400	-	-	V	
Blocking Voltage	$V_R$						
Instaneous Forward Voltage <sup>2</sup>	$V_F$	$I_F=1.0\text{A}$	$T_J=25^{\circ}\text{C}$	-	0.90	-	V
		$I_F=3.0\text{A}$		-	1.04	-	
		$I_F=5.0\text{A}$		-	1.12	1.25	
		$I_F=1.0\text{A}$	$T_J=125^{\circ}\text{C}$	-	0.71	-	
		$I_F=3.0\text{A}$		-	0.86	-	
		$I_F=5.0\text{A}$		-	0.95	-	
Reverse Current <sup>3</sup>	$I_R$	$V_R=400\text{V}$	$T_J=25^{\circ}\text{C}$	-	-	1.0	$\mu\text{A}$
			$T_J=125^{\circ}\text{C}$	-	-	20	$\mu\text{A}$
			$T_J=150^{\circ}\text{C}$	-	-	50	$\mu\text{A}$
Junction Capacitance	$C_J$	4V, 1MHz	-	23	-	pF	
Reverse Recovery Time	$t_{rr}$	$I_F=0.5\text{A}$ , $I_R=1\text{A}$ , $I_{RR}=0.25\text{A}$	-	25	35	nS	

Notes:

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

## Ratings and Characteristics Curves

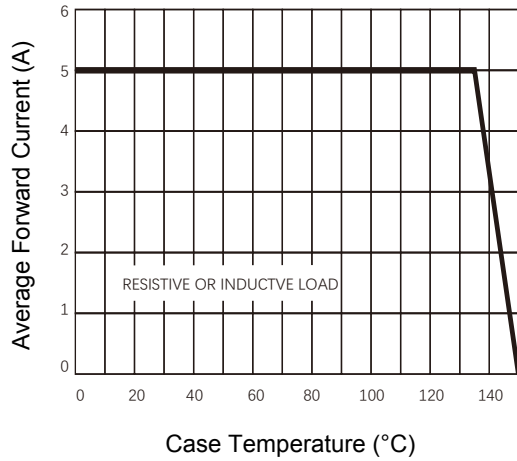


Figure 1. Forward Current Derating Curve

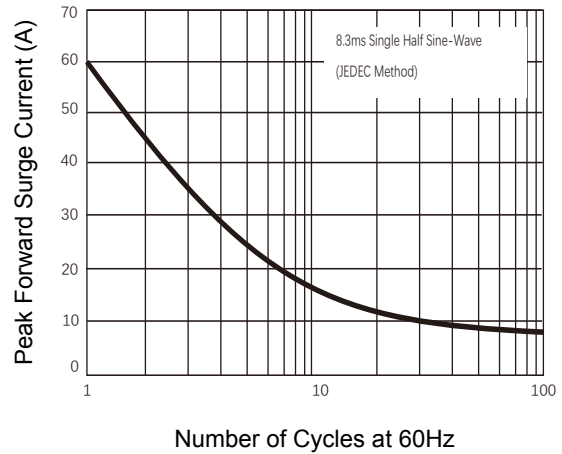


Figure 2. Maximum Non-Repetitive Forward Surge Current

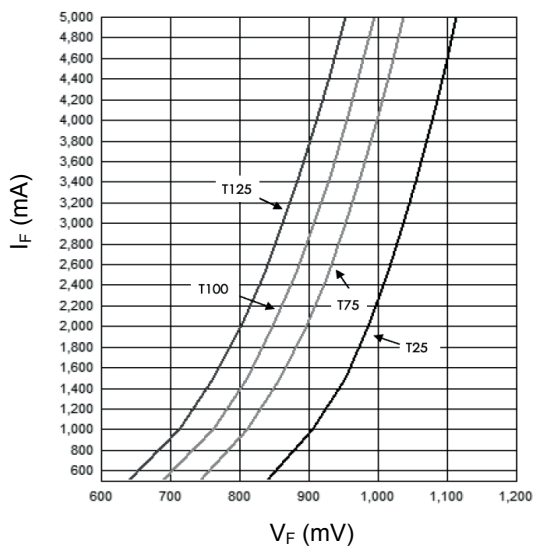


Figure 3. Typical Instantaneous Forward Characteristics

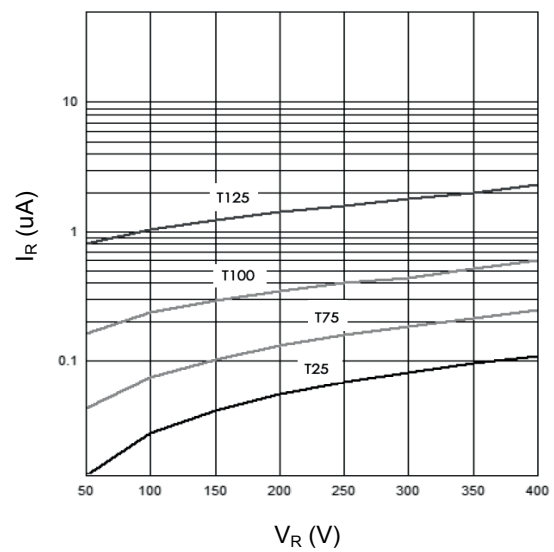
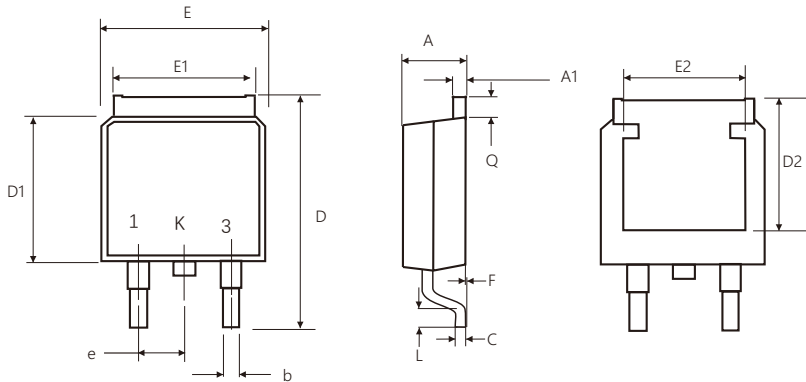


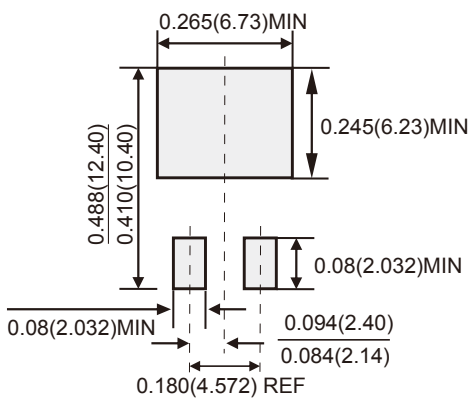
Figure 4. Typical Reverse Characteristics

## Package Outline Dimensions (TO-252)



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	2.15	2.65	0.085	0.104
A1	0.42	0.58	0.017	0.023
e	2.14	2.40	0.084	0.094
b	0.64	0.89	0.025	0.035
Q	0.88	1.27	0.035	0.050
C	0.42	0.58	0.017	0.023
D	9.00	10.41	0.354	0.410
D1	5.60	6.22	0.220	0.245
E	6.20	6.73	0.244	0.265
E1	5.21	5.46	0.205	0.215
L	1.00	-	0.039	-
F	0.01	0.11	0.000	0.004
D2	5.11	5.58	0.201	0.220
E2	4.31	5.33	0.170	0.210

## Recommended Pad Layout



Note:

1. Unit in inches (millimeters)
2. Pad layout for reference

## Order Information

Device	Package	Marking	Quantity	HSF Status
GSMUR540M3	TO-252	MUR540M3	2,500pcs / Reel	RoHS Compliant