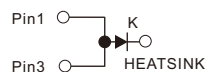
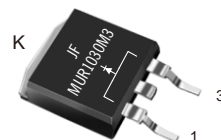


Features

- Plastic package has Underwriters Laboratory Flammability Classification 94V-0
- Ultrafast and soft recovery time for high efficiency
- Low VF, Low power loss
- Polyimide passivation
- High surge capability
- High temperature soldering guaranteed: 260°C/10s at terminals
- Component in accordance to RoHS 2015/863/EU



TO-252(DPAK)
MUR1030M3



Mechanical Data

- Case: JEDEC TO-252(DPAK)
- Molding compound meets UL94V-0 flammability rating
- Terminals: Lead solderable per J-STD-002 and JESD22-B102
- Polarity: As marked

Typical 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

PRIMARY CHARACTERISTICS	
$I_{F(AV)}$	10A
V_{RRM}	300V
I_{FSM}	150A
V_F at $I_F=10A(125^\circ C)$	1V
I_R	5 μ A
$T_J(MAX)$	175 $^\circ$ C
Diode variations	Single

Maximum Ratings

(Ratings at 25 $^\circ$ C ambient temperature unless otherwise specified)

Parameter	Symbol	Value	Unit
Maximum repetitive peak reverse voltage	V_{RRM}	300	V
Maximum average forward rectified current (see fig.1)	$I_{F(AV)}$	10.0	A
Surge non repetitive forward current $t_p=8.3ms$ sinusoidal	I_{FSM}	150	A
Non repetitive avalanche current $t_p=20\mu s$ square	I_{RSM}	5	A
Maximum operating junction temperature	T_J	175	$^\circ$ C
Storage temperature range	T_{stg}	-55 to +175	$^\circ$ C

RATINGS AND CHARACTERISTICS OF MUR1030M3

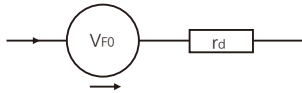
Electrical Characteristics (T_A=25°C Unless otherwise noted)

Parameter	Test Conditions		Symbol	Typ.	Max.	Unit
Instantaneous forward voltage	I _F =10A	T _A =25°C	V _F ¹⁾	1.10	1.20	V
		T _A =100°C		0.99	-	
		T _A =125°C		0.96	-	
	I _F =5A	T _A =25°C		0.96	-	
		T _A =100°C		0.85	-	
		T _A =125°C		0.81	-	
Reverse current	V _R =300V	T _A =25°C	I _R ²⁾	-	5	μA
		T _A =100°C		-	20	μA
		T _A =125°C		-	200	μA
Typical junction capacitance	4V,1MHz		C _J	83		pF

Notes: 1.Pulse test: 300 μs pulse width,1% duty cycle

2.Pulse test: pulse width≤40ms

Equivalent circuits for forward power loss calculation



V_{F0}: threshold voltage 0.75V

r_d: Dynamic resistance 0.025Ω

Forward power loss of diode= $V_{F0} \times I_{F(AV)} + r_d \times I_{F(RMS)}^2$

Dynamic Recovery Characteristics (T_J=25°C)

Parameters	Test Conditions	Symbol	Min.	Typ.	Max.	Units
Reverse recovery time	I _F =0.5A,I _R =1A,I _{RR} =0.25A	trr	-	-	25	ns
	I _F =1A,dI _F /dt=-50A/μs,V _R =30V		-	19	35	ns

RATINGS AND CHARACTERISTICS OF MUR1030M3

Thermal Characteristics

Parameter	Symbol	MUR1030M3	Unit
Typical thermal resistance ³⁾	$R_{\theta c}$	2.5	$^{\circ}\text{C}/\text{W}$

3. Thermal resistance from junction to case

Available Pack Information

Product code	Pack	Box Size L×W×H(mm)	Quantity(pcs/box)	Carton Size L×W×H(mm)	Quantity(box/carton)
MUR1030M3-TO-252	P/T	558×148×38	4000	565×225×170	5

FIG.1-Conduction losses versus average current

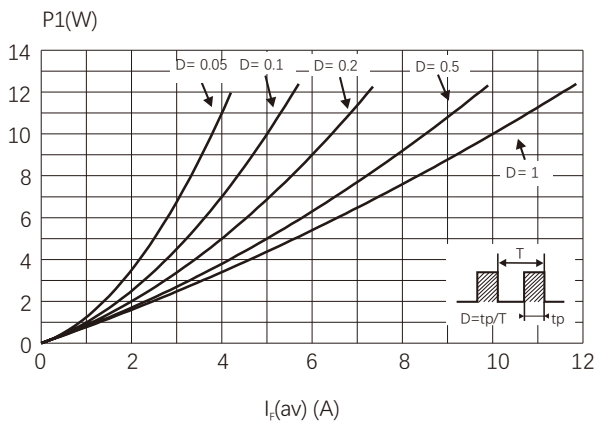
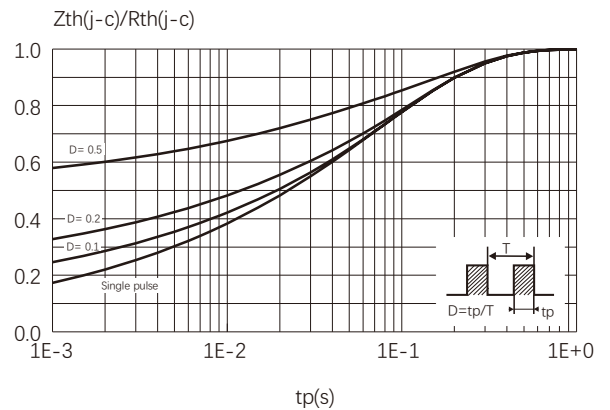


FIG.2-Relative variation of thermal impedance Junction to case versus pulse duration



RATINGS AND CHARACTERISTICS OF MUR1030M3

FIG.3-Forward Current Derating Curve

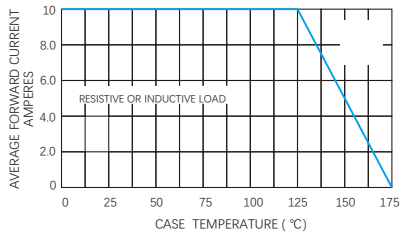


FIG.4-Maximum Non-repetitive Peak Forward Surge Current

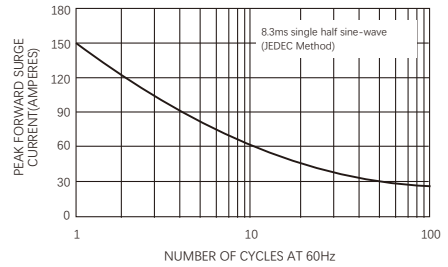


FIG.5-Typical Instantaneous Forward Characteristics

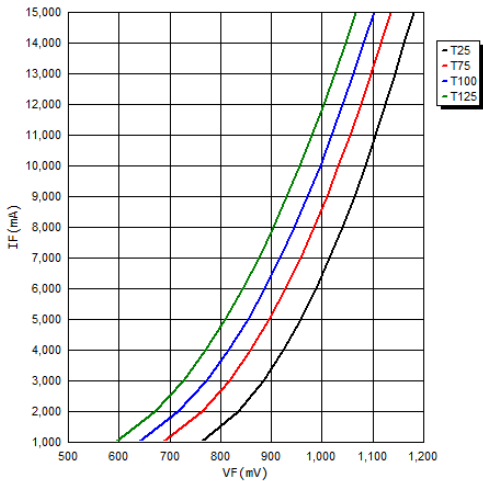


FIG.6-Typical Reverse Characteristics

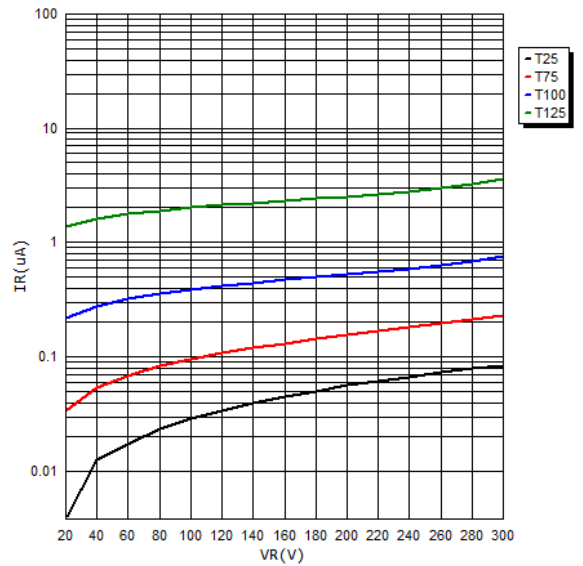
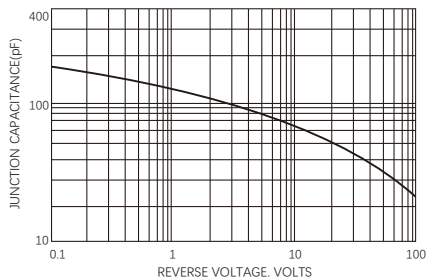
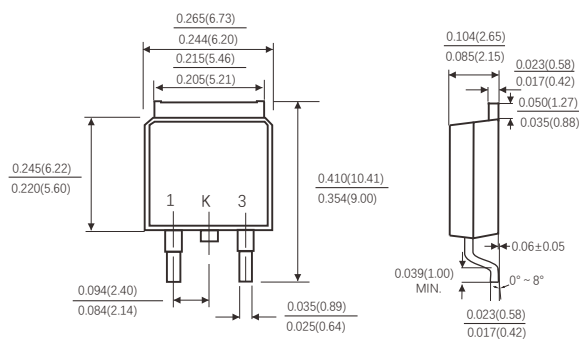


Fig.7-Typical Junction Capacitance

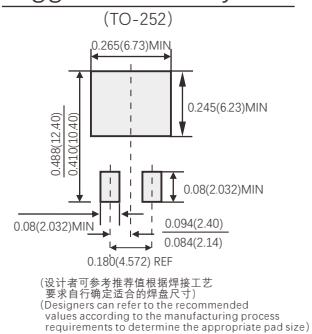


PACKAGE OUTLINE DIMENSIONS

TO-252



Suggested Pad Layout



Friendship Reminder

- JiNan JingHeng(hereinafter referred to as JH) reserves the right to make changes to this document and its products and specifications at anytime without notice.
济南晶恒（以下简称JH）保留，未经通知变更本文件和与本文件相关的产品及规格的权利。
- Customers should obtain and confirm the latest product information and specifications before final design, purchase or use.
使用方应在使用、采购本产品之前获取并确认产品信息和规格书的最新版本。
- JH makes no warranty, representation or guarantee regarding the suitability of its products for any particular purpose, nor does JH assume any liability for application assistance or customer product design.
JH对其产品用于某特定用途的适用性，既不做任何保证、说明或担保、也不承担任何应用协助或使用方设计的法定责任。
- JH does not warrant or accept any liability with products which are purchased or used for any unintended or unauthorized application.
JH不保证或承担任何责任，其产品被采购使用于任何非预期或授权的应用。
- No license is granted by implication or otherwise under any intellectual property rights of JH.
此规格书属于JH的知识产权,没有经过我司授权不得抄袭。
- JH's products are not authorized for use as critical components in life support devices or systems without express written approval of JH.
没有JH的书面授权，JH的产品不能在生命支撑设备或系统里作为关键零件使用。