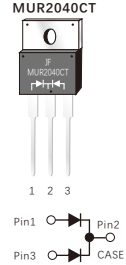
SEMICONDUCTOR

MUR2040CT,MURF2040CT,MUR2040D1

POLYIMIDE PASSIVATED SUPER FAST RECTIFIER

Reverse Voltage - 400 Volts
Forward Current -20.0Amperes

TO-220AB
MUR2040CT



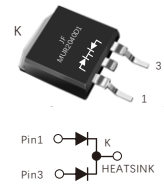
ITO-220AB
MURF2040CT

RoHS
COMPLIANT

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℃/10s at terminals
- Component in accordance to RoHS 2015/863/EU

TO-263
MUR2040D1



Mechanical Data

- Case: JEDEC TO-220AB、ITO-220AB、TO-263
- Molding compound meets UL94V-0 flammability rating
- Terminals: Lead solderable per J-STD-002 and JESD22-B102
- Polarity: As marked
- Mounting Torque: 10 in-lbs maximum

PRIMARY CHARACTERISTICS	
$I_{F(AV)}$	2*10A
V_{RRM}	400V
I_{FSM}	200A
V_F at I_F=10.0A(125℃)	1V
I_R	5μA
T_J(MAX)	175℃
Diode variations	Common cathode

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

Maximum Ratings

(Ratings at 25℃ ambient temperature unless otherwise specified)

Parameter		Symbol	Value	Unit
Maximum repetitive peak reverse voltage		V_{RRM}	400	V
Maximum average forward rectified current (see fig.1)	Per leg	$I_{F(AV)}$	10.0	A
	Total device		20.0	
Surge non repetitive forward current tp=8.3ms sinusoidal		I_{FSM}	200	A
Maximum operating junction temperature		T_J	175	℃
Storage temperature range		T_{stg}	-55 to+175	℃

Electrical Characteristcs (Per Leg,T_j=25℃ Unless Otherwise Noted)

Parameter	Test Conditions		Symbol	Min.	Typ.	Max.	Unit
Breakdown voltage Blocking voltage	IR=200μA		V_{BR} V_R	400	-	-	V
Instaneous forward voltage	T_J=25℃	I_F=5.0A	V_F 1)	-	0.99	-	V
		I_F=10.0A		-	1.10	1.30	
	T_J=125℃	I_F=5.0A		-	0.85	-	
		I_F=10.0A		-	1.00	1.20	
Reverse current	T_J=25℃	V_R=400V	I_R 2)	-	-	5	μA
	T_J=125℃			-	-	250	
Junction capacitance	4V,1MHz		C_J	-	50	-	pF

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

2.Pulse test: pulse width≤40ms

Dynamic Recovery Characteristcs (Per Leg, T_J=25℃ Unless otherwise noted)

Parameter	Test Conditions	Symbol	Min.	Typ.	Max.	Unit
Reverse recovery time	I_F=0.5A,I_R=1.0A, Irr=0.25A	trr	-	30	35	ns

Thermal Characteristcs

Parameter	Symbol	TO-220AB	ITO-220AB	TO-263	Unit
Typical thermal resistance 3)	$R_{\theta JC}$	1.3	2.5	1.3	℃/W

3.Thermal resistance from junction to case

Availabale Pack Information

Product code	Pack	Carton Size L×W×H(mm)	Inner Box Size L×W×H(mm)	Tube Length (mm)	Inner Box Number	Tube Number Per A Inner Box	Part Number Per A Tube	Quantity(carton) (K)
MUR2040CT-TO-220AC	Tube	565×225×170	548×151×37	540	5	20	50	5
MURF2040-ITO-220AC	Tube	565×225×170	548×151×37	540	5	20	50	5
MUR2040D1-TO-263	Tube	565×225×170	548×151×37	538	5	20	50	5
Product code	Pack	Carton Size L×W×H(mm)	Inner Box Size L×W×H(mm)	Reel Diameter (mm)	Inner Box Number	Reel Number Per A Inner Box	Part Number Per A Reel	Quantity(carton) (K)
MUR2040D1-TO-263	Reel	364×364×235	330×330×38	φ330	5	1	800	4

Fig.1-Forward Current Derating Curve

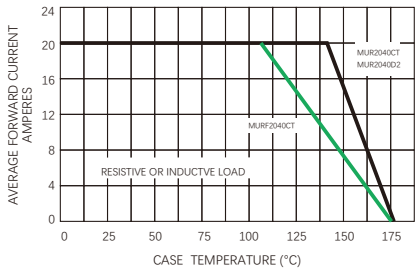


Fig.2-Maximum Non-repetitive Peak Forward Surge Current

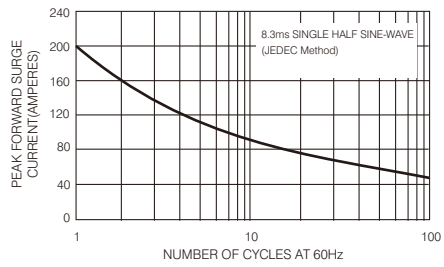


Fig.3-Typical Instantaneous Forward Characteristics

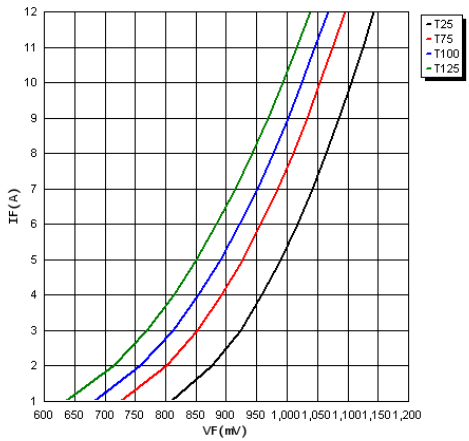


Fig.4-Typical Reverse Characteristics

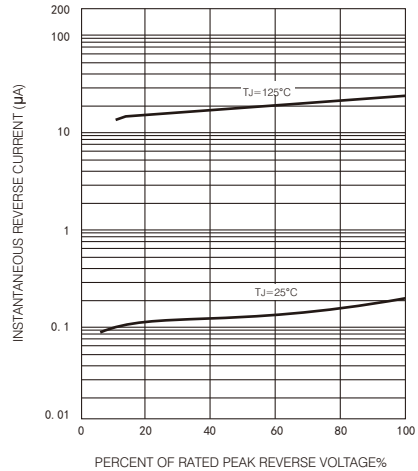
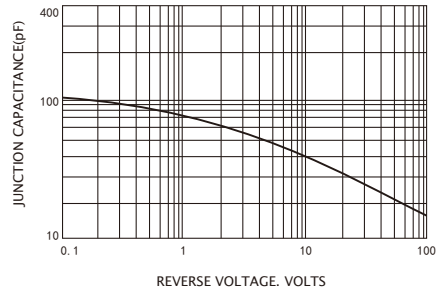
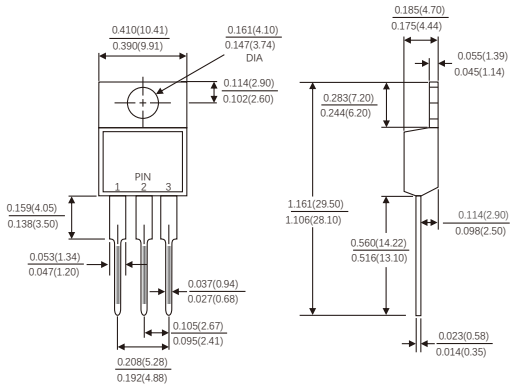


Fig.5-Typical Junction Capacitance

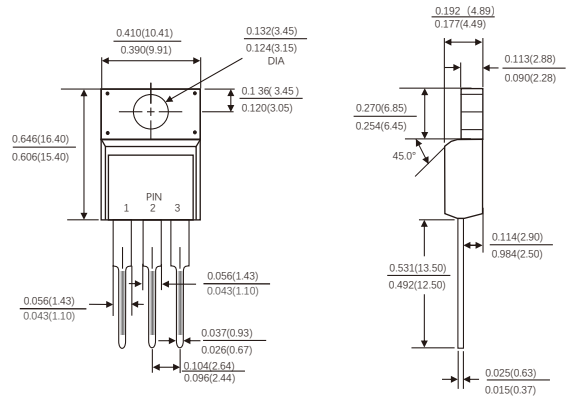


Dimensions in inches and (millimeters)

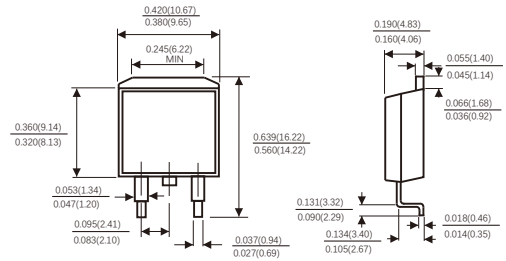
TO-220AB



ITO-220AB

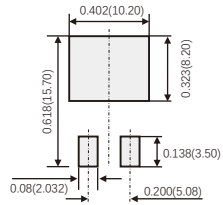


TO-263



Suggested Pad Layout

(TO-263)



(设计者可参考推荐值根据焊接工艺
要求自行确定适合的焊盘尺寸)
(Designers can refer to the recommended
values according to the manufacturing process
requirements to determine the appropriate pad size)

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.

■ Customers should obtain and confirm the latest product information and specifications before final design, purchase or use.

■ 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 does not warrant or accept any liability with products which are purchased or used for any unintended or unauthorized application.

■ No license is granted by implication or otherwise under any intellectual property rights of JH.

■ JH’s products are not authorized for use as critical components in life support devices or systems without express written approval of JH.