SEMICONDUCTOR

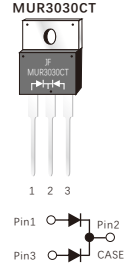
MUR3030CT,MURF3030CT,MUR3030D1

POLYIMIDE PASSIVATED SUPER FAST RECTIFIER

Reverse Voltage - 300 Volts
Forward Current -30.0Amperes

TO-220AB

MUR3030CT



ITO-220AB

MURF3030CT

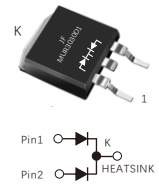
RoHS COMPLIANT

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
- Meets JESD 201 class 2 whisker test
- High temperature soldering guaranteed:260℃/10s at terminals
- Component in accordance to RoHS 2015/863/EU

TO-263AB

MUR3030D1



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*15A
V_{RRM}	300V
I_{FSM}	300A
V_F at I_F=15A(125℃)	0.93V
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)

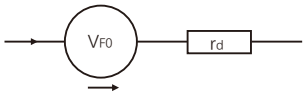
Parameter		Symbol	Value	Unit
Maximum repetitive peak reverse voltage		V_{RRM}	300	V
Maximum average forward rectified current (see fig.1)	Per leg	$I_{F(AV)}$	15.0	A
	Total device		30.0	
Surge non repetitive forward current (8.3ms half-sinusoidal wave)		I_{FSM}	300	A
Maximum operating junction temperature		T_J	175	℃
Storage temperature range		T_{stg}	-65 to+175	℃

ELECTRICAL CHARACTERISTCS (TJ=25℃ Unless otherwise noted)

Parameter	Test Conditions		Symbol	Typ.	Max.	Unit
Instaneous forward voltage	Per leg IF=15.0A	TJ=25℃	VF 1)	1.05	1.30	V
		TJ=100℃		0.97	-	
		TJ=125℃		0.93	-	
	Per leg IF=5.0A	TJ=25℃		0.89	-	
		TJ=100℃		0.77	-	
		TJ=125℃		0.73	-	
Reverse current	VR=300V	TJ=25℃	IR 2)	-	5	μA
	VR=300V	TJ=100℃		2	20	μA
	VR=300V	TJ=125℃		10	200	μA
Typical junction capacitance	4V,1MHz		CJ	106		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 0.82V
r_d: Dynamic resistance 0.013Ω
Forward power loss of diode=$V_{F0}\times I_{F(AV)}+r_d\times I_{F(RMS)}^2$

DYNAMIC RECOVERY CHARACTERISTCS (TJ=25℃)

Parameters	Test Conditions	Symbol	Min.	Typ.	Max.	Units
Reverse recovery time	IF=0.5A,IR=1A,IRR=0.25A	trr	-	25	30	ns
	IF=1A,dIF/dt=-200A/μs,VR=30V		-	22	-	ns

THERMAL CHARACTERISTCS

Parameter	Symbol	MUR3030CT	MURF3030CT	MUR3030D1	Unit
Typical thermal resistance 3)	$R_{\theta JC}$	1.4	3.5	1.4	℃/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)
MUR3030CT-TO-220AB	Tube	565×225×170	548×151×37	540	5	20	50	5
MURF3030CT-ITO-220AB	Tube	565×225×170	548×151×37	540	5	20	50	5
MUR3030D1-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)
MUR3030D1-TO-263	Reel	364×364×235	330×330×38	φ330	5	1	800	4

RATINGS AND CHARACTERISTIC OF MUR3030CT,MURF3030CT,MUR3030D1

FIG.1-FORWARD CURRENT DERATING CURVE

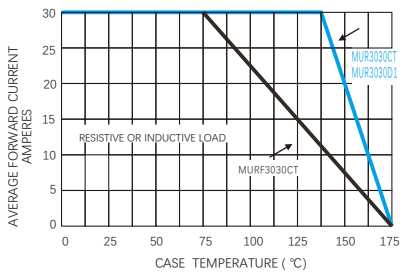


FIG.2-MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

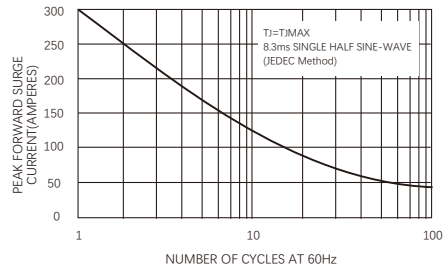


FIG.3-TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

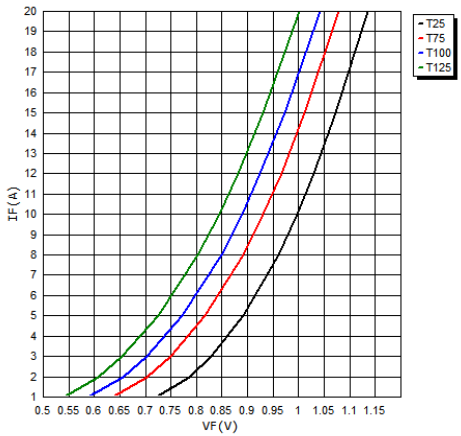


FIG.4-TYPICAL REVERSE CHARACTERISTICS

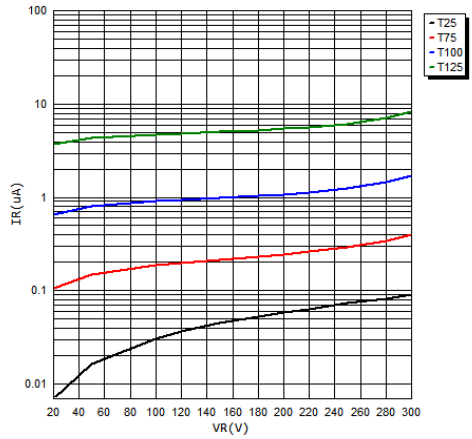
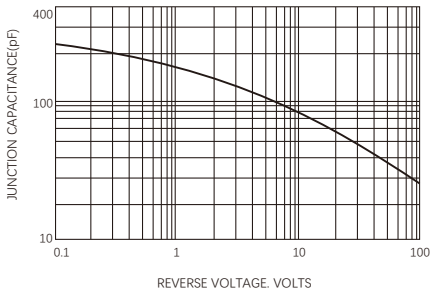
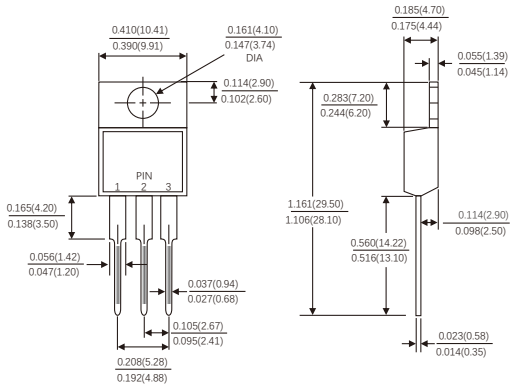


FIG.5-TYPICAL JUNCTION CAPACITANCE

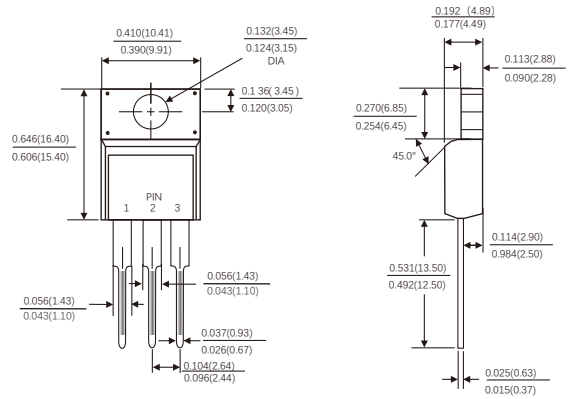


Dimensions in inches and (millimeters)

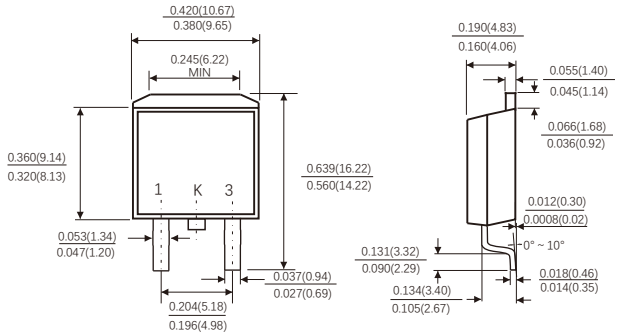
TO-220AB



ITO-220AB

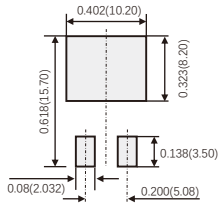


TO-263



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)

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