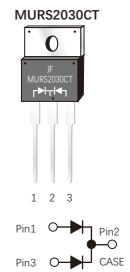
SEMICONDUCTOR

MURS2030CT,MURFS2030CT,MURS2030D1

POLYIMIDE PASSIVATED SUPER FAST RECTIFIER

Reverse Voltage - 300 Volts
Forward Current -20.0Amperes

TO-220AB



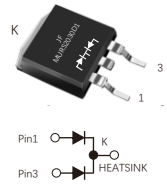
ITO-220AB

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



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}	300V
I_{FSM}	100A
V_F at I_F=10.0A(125℃)	1.25V
I_R	5μA
T_J(MAX)	150℃
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	$I_{F(AV)}$	10.0	A
	Total device		20.0	
Surge non repetitive forward current tp=8.3ms half sinusoidal wave,Per Leg		I_{FSM}	100	A
Storage and operating junction temperature range		T_{stg} T_J	-55 to+150	℃

ELECTRICAL CHARACTERISTCS (TA=25℃ Unless otherwise noted)

Parameter	Test Conditions		Symbol	Typ.	Max.	Unit
Instaneous forward voltage	Per leg I_F=10.0A	T_J=25℃	V_F 1)	1.55	1.80	V
		T_J=125℃		1.25	-	
	Per leg I_F=5.0A	T_J=25℃		1.26	-	
		T_J=125℃		1.01	-	
Reverse current	V_R=300V	T_J=25℃	I_R 2)	-	5.0	μA
		T_J=125℃		-	50	
Typical junction capacitance	4V,1MHz		C_J	153		pF

Notes: 1.Pulse test: 300 μs pulse width,1% duty cycle
2.Pulse test: pulse width≤40ms

THERMAL CHARACTERISTCS

Parameter	Symbol	MURS2030CT	MURFS2030CT	MURS2030D1	Unit
Typical thermal resistance 3)	$R_{\theta JC}$	1.3	3.5	1.3	℃/W

3.Thermal resistance from junction to case

DYNAMIC RECOVERY CHARACTERISTCS (T_J=25℃)

Parameters	Test Conditions	Symbol	Min.	Typ.	Max.	Units
Reverse recovery time	I_F=0.5A,I_R=1A,I_{RR}=0.25A	trr	-	16	25	ns

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)
MURS2030CT-TO-220AC	Tube	565×225×170	548×151×37	540	5	20	50	5
MURFS2030CT-ITO-220AC	Tube	565×225×170	548×151×37	540	5	20	50	5
MURS2030D1 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)
MURS2030D1 TO-263	Reel	364×364×235	330×330×38	φ330	5	1	800	4

FIG.1-FORWARD CURRENT DERATING CURVE

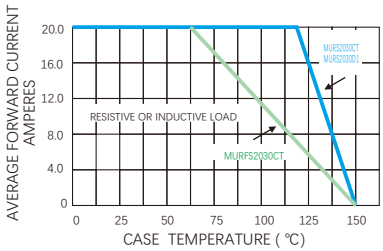


FIG.2-MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

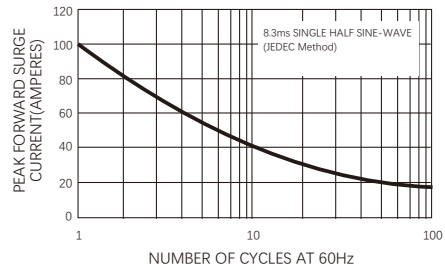


FIG.3-TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

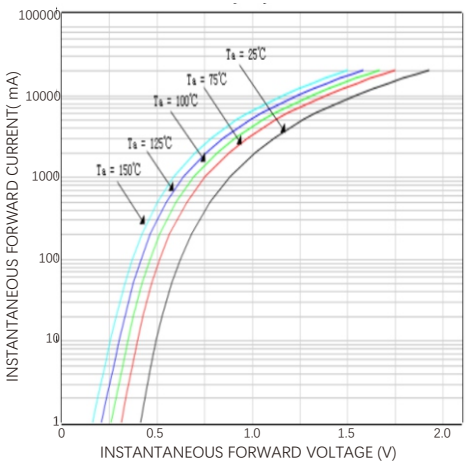


FIG.4-TYPICAL REVERSE CHARACTERISTICS

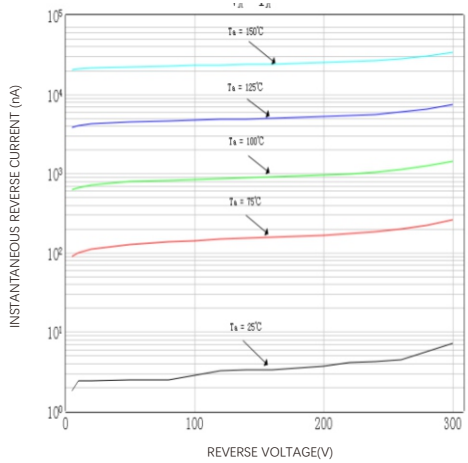
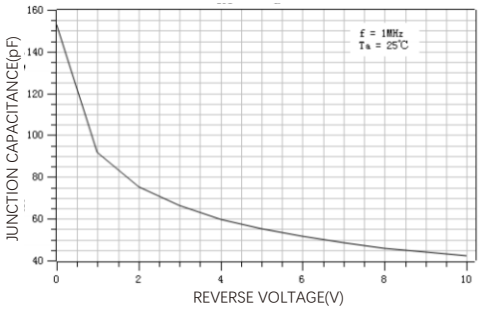
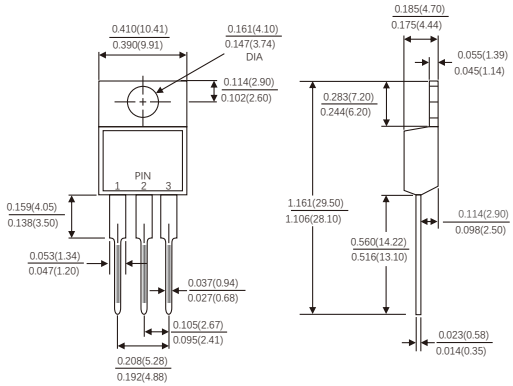


FIG.5-TYPICAL JUNCTION CAPACITANCE

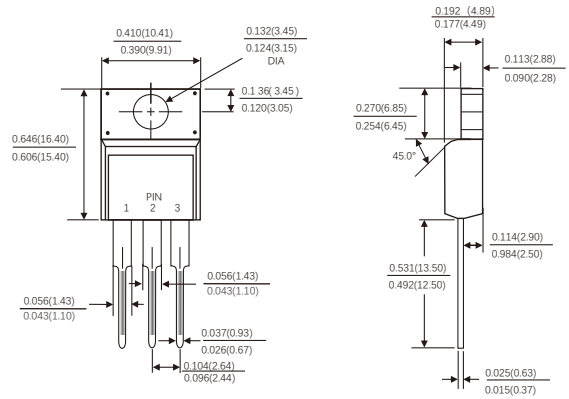


Dimensions in inches and (millimeters)

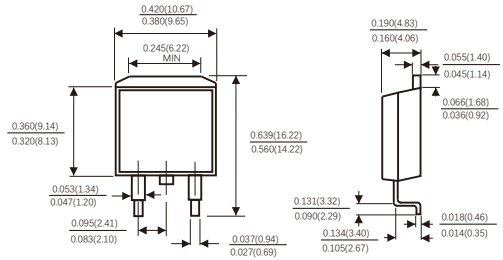
TO-220AB



ITO-220AB

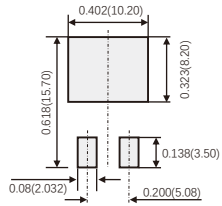


TO-263
D^2PAK



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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