SEMICONDUCTOR

MUR2060 MURF2060 MUR2060D2

POLYIMIDE PASSIVATED SUPER FAST RECTIFIER

Reverse Voltage - 600 Volts

Forward Current -20.0Amperes

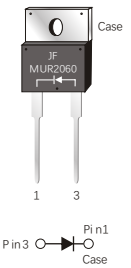
Features

- 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

RoHS COMPLIANT

TO-220AC

MUR2060

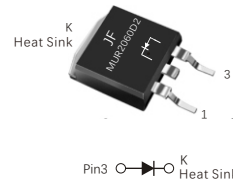


ITO-220AC

MURF2060

TO-263(D^2PAK)

MUR2060D2



Mechanical Data

- Case: JEDEC TO-220AC、ITO-220AC、 TO-263(D^2PAK) molded plastic body
- Terminals: Solderable per MIL-STD-202,method 208
- Polarity: As marked
- Mounting Position: Any
- Mounting Torque: 10 in-lbs maximum

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°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}	600	V
Maximum average forward rectified current	$I_{F(AV)}$	20.0	A
Peak forward surge current 8.3mS single half sine-wave superimposed on rated load (JEDEC method,Total device)	I_{FSM}	250	A
Rating for fusing(t<8.3ms)	I^2t	259.375	A^2S
Operating junction temperature range	T_J	-55 to 175	℃
Storge temperature range	Tstg	-55 to 175	℃

RATINGS AND CHARACTERISTICS OF MUR2060、MURF2060、MUR2060D2

Electrical Characteristcs(T_a=25℃ Unless Otherwise Noted)

Parameters	Test Conditions		Symbol	Min.	Typ.	Max.	Units
Breakdown voltage Blocking voltage	I_R=200μA		V_{BR} V_R	600	-	-	V
Instaneous forward voltage	T_J=25℃	I_F=5A	V_F 1)	-	1.17	-	V
		I_F=10A		-	1.34	-	
		I_F=20A		-	1.59	1.70	
	T_J=125℃	I_F=5A		-	0.87	-	
		I_F=10A		-	1.03	-	
		I_F=20A		-	1.30	-	
Reverse current	T_J=25℃	V_R=600V	I_R 2)	-	-	5.0	μA
	T_J=125℃			-	-	50	μA
	T_J=150℃			-	-	250	
Junction capacitance	4V,1MHz		C_J	-	80	-	pF

Notes: 1.Pulse Test:300μS pulse width,1% duty cycle

2.Pulse test:pulse width≤40ms

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	-	30	35	ns
	I_F=1A,di/dt=200A/μS,V_R=30V	trr	-	25		ns

RATINGS AND CHARACTERISTICS OF MUR2060、MURF2060、MUR2060D2

Thermal Characteristics

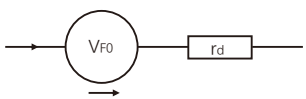
Parameter	Symbol	TO-220	ITO-220	TO-263	Unit
Typical thermal resistance [3]	$R_{\theta JC}$	1.3	3.5	1.3	℃/W

3. Thermal resistance from junction to case

Available Pack Information

Product code	Pack	Box Size L×W×H(mm)	Quantity(pcs/box)	Carton SizeL×W×H(mm)	Quantity(box/carton)
MUR2060-TO-220AC	P/T	558×148×38	1000	565×225×170	5
MURFS2060-ITO-220AC	P/T	558×148×38	1000	565×225×170	5
MUR2060D2-TO-263	P/T	558×148×38	1000	565×225×170	5

Equivalent circuits for forward power loss calculation



V_{f0}: threshold voltage 0.91V

r_d: Dynamic resistance 0.042Ω

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

Fig.1-Forward Current Derating Curve

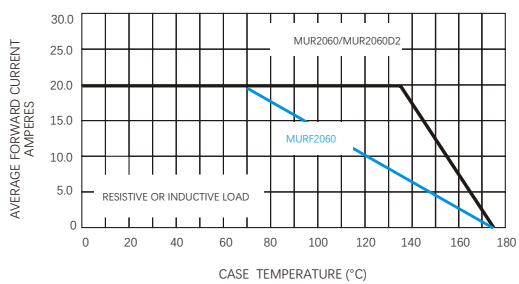


Fig.2-Maximum Non-repetitive Peak Forward Surge Current

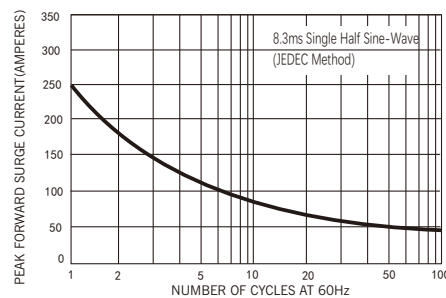


Fig.3-Typical Instantaneous Forward Characteristics,Per Leg

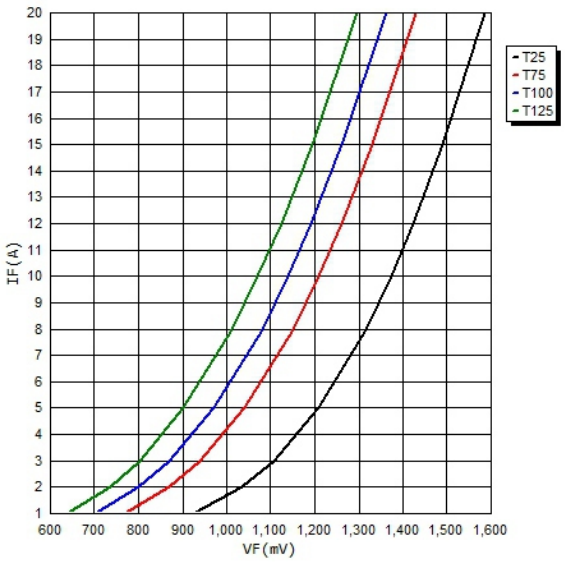


Fig.4-Typical Reverse Characteristics,Per Leg

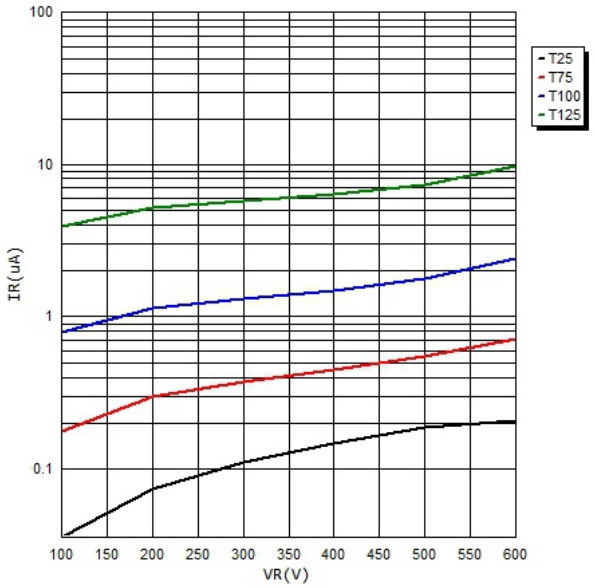
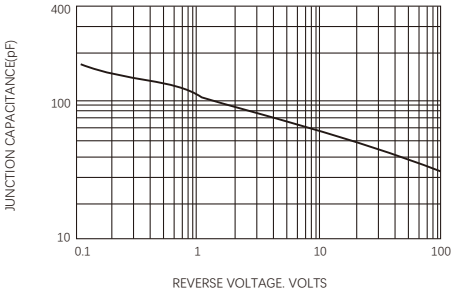
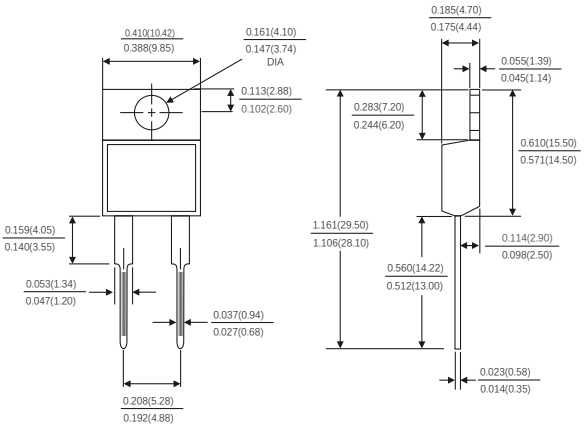


Fig.5-Typical Junction Capacitance

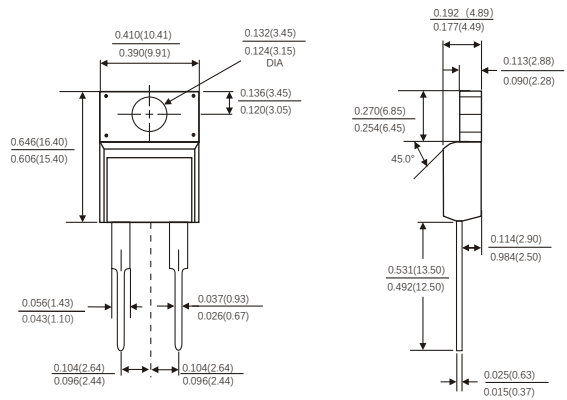


PACKAGE OUTLINE DIMENSIONS

TO-220AC

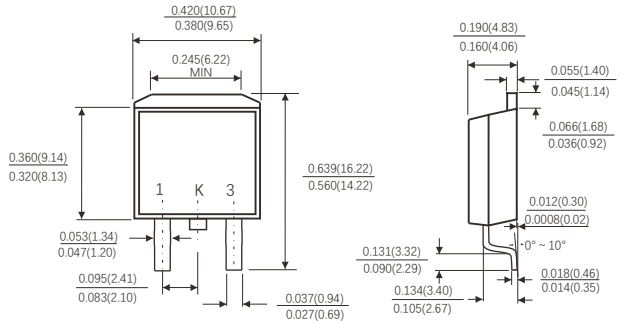


ITO-220AC



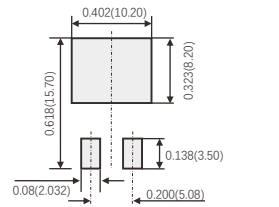
Dimensions in inches and (millimeters)

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)

Dimensions in inches and (millimeters)

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