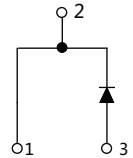
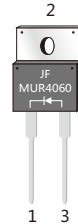


## FEATURES

- Plastic package has Underwriters Laboratory Flammability Classification 94V-0
- Ultrafast and soft recovery time for high efficiency
- Low  $V_F$ , Low power loss
- Polyimide passivation
- High surge capability
- Meets JESD 201 class 2 whisker test
- High temperature soldering guaranteed: 260°C/10 seconds at terminals
- Component in accordance to RoHS 2011/65/EU



## TO-220AC



## MECHANICAL DATA

- Case: JEDEC TO-220AC molded plastic body
- Terminals: Lead solderable per MIL-STD-750, method 2026
- Polarity: As marked
- Mounting Position: Any

## 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	
$I_{F(AV)}$	40A
$V_R$	600V
$I_{FSM}$	300A
$V_F$ at $I_F=40A$	1.4V
$T_{rr typ}$	45ns
$T_{JMAX}$	175°C
Diode variation	Single die

## MAXIMUM RATINGS

(Ratings at 25°C ambient temperature unless otherwise specified )

Parameter	Symbol	Value	Unit
Maximum repetitive peak reverse voltage	$V_{RRM}$	600	V
Maximum average forward rectified current	$I_{F(AV)}$	40	A
Peak forward surge current 8.3ms single half sine-wave superimposed on rated load (JEDEC method at rated $T_J$ )	$I_{FSM}$	300	A
Operating junction temperature range	$T_J$	-55 to +175	°C
Storage temperature range	$T_{stg}$	-55 to +175	°C

# RATINGS AND CHARACTERISTIC OF MUR4060

## ELECTRICAL CHARACTERISTICS ( $T_J=25^\circ\text{C}$ Unless otherwise noted)

Parameter	Test Conditions		Symbol	Min.	Typ.	Max.	Unit
Breakdown voltage Blocking voltage	IR=200 $\mu$ A		$V_{BR}$ $V_R$	600	-	-	V
Instaneous forward voltage	T <sub>J</sub> =25 $^\circ$ C	I <sub>F</sub> =5A	V <sub>F</sub> <sup>1)</sup>	-	0.90	-	V
		I <sub>F</sub> =20A		-	1.14	-	
		I <sub>F</sub> =40A		-	1.40	1.70	
	T <sub>J</sub> =125 $^\circ$ C	I <sub>F</sub> =5A		-	0.71	-	
		I <sub>F</sub> =20A		-	0.98	-	
		I <sub>F</sub> =40A		-	1.25	-	
Reverse current	T <sub>J</sub> =25 $^\circ$ C	V <sub>R</sub> =600V	I <sub>R</sub> <sup>2)</sup>	-	0.2	5	$\mu$ A
	T <sub>J</sub> =100 $^\circ$ C			-	-	10	$\mu$ A
	T <sub>J</sub> =125 $^\circ$ C			-	-	50	
Junction capacitance	4V,1MHz		C <sub>J</sub>	-	213	-	pF

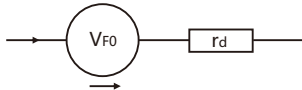
Notes: 1.Pulse test: 300  $\mu$ s pulse width,1% duty cycle

2.Pulse test: pulse width $\leq$ 40ms

## DYNAMIC RECOVERY CHARACTERISTICS ( $T_J=25^\circ\text{C}$ )

Parameter	Test Conditions	Symbol	Min.	Typ.	Max.	Unit
Reverse recovery time	I <sub>F</sub> =0.5A,I <sub>R</sub> =1A,I <sub>RR</sub> =0.25A	trr	-	44	55	ns

## Equivalent circuits for forward power loss calculation



V<sub>F0</sub>: threshold voltage 0.85V

r<sub>d</sub>: Dynamic resistance 0.00625 $\Omega$

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

# RATINGS AND CHARACTERISTIC OF MUR4060

## THERMAL CHARACTERISTICS

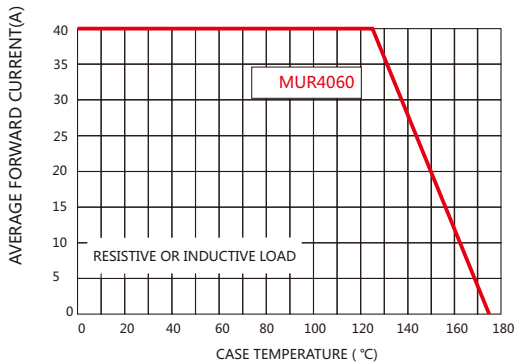
Parameter	Symbol	TO-220AC	Unit
Typical thermal resistance <sup>3)</sup>	$R_{\theta JC}$	0.75	°C/W

3. Thermal resistance from junction to case

## AVAILABLE PACK INFORMATION

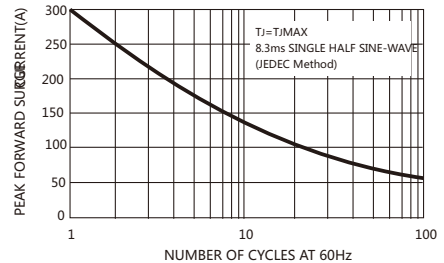
Product code	Pack	Box Size L×W×H(mm)	Quantity(pcs/box)	Carton Size L×W×H(mm)	Quantity(box/carton)
MUR4060-TO-220AC	P/T	558×148×38	1000	565×225×170	5

FIG.1-FORWARD CURRENT DERATING CURVE



注：曲线拐点温度值由公式  $T_{JMAX} - V_f @ (I_f(AV), 25^\circ C) \times I_f(AV) \times R_{\theta(JC)}$  计算得出，设计时曲线仅供参考

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



# RATINGS AND CHARACTERISTIC OF MUR4060

FIG.3-TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS    FIG.4-TYPICAL REVERSE CHARACTERISTICS

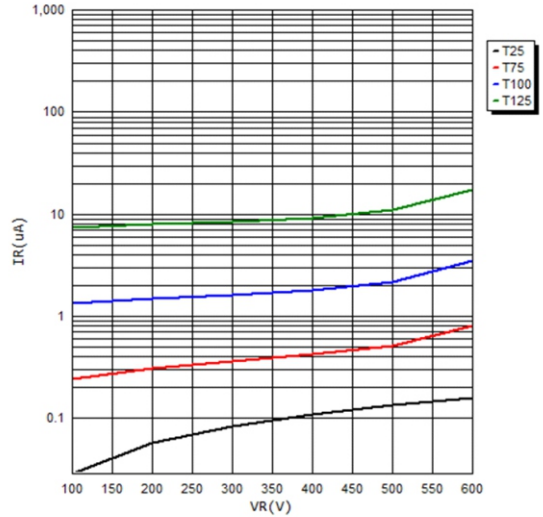
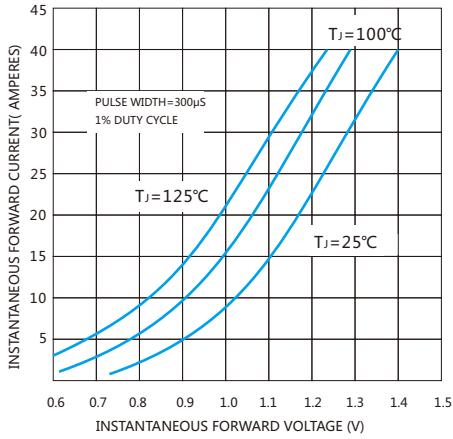
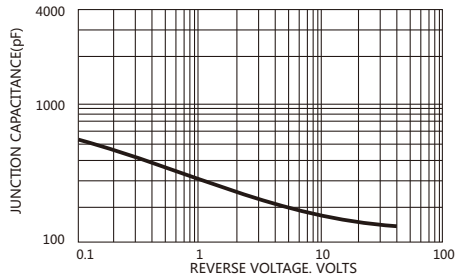
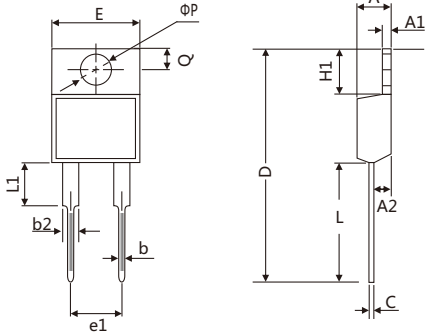


FIG.5-TYPICAL JUNCTION CAPACITANCE



# PACKAGE OUTLINE DIMENSIONS

## TO-220AC



Symbol	millimeter			inchs		
	Min.	Typ.	MAX.	Min.	Typ.	MAX.
A	4.44	4.70		0.175	0.185	
A1	1.14	1.39		0.045	0.055	
A2	2.50	2.90		0.098	0.114	
b	0.68	0.94		0.027	0.037	
b2	1.20	1.34		0.047	0.053	
C	0.35	0.58		0.014	0.023	
D	28.10	29.50		1.106	1.161	
E	9.85	10.42		0.388	0.410	
e1	4.88	5.28		0.192	0.208	
H1	6.20	7.20		0.244	0.283	
L	13.00	14.22		0.512	0.560	
L1	3.55	4.05		0.140	0.159	
L2	-	-		-	-	
$\Phi P$	3.74	4.10		0.147	0.161	
Q	2.60	2.88		0.102	0.113	

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