

### FEATURES

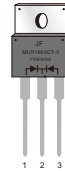
- Plastic package has Underwriters Laboratory Flammability Classification 94V-0
- Ultrafast and soft recovery time for high efficiency
- Low VF, Low power loss
- Polyimide passivation
- High surge capability
- Meets JESD 201 class 2 whisker test
- AEC-Q101 qualified and PPAP capable
- ESD Ratings:MM=C(>400V);HBM=3B(>8KV)
- High temperature soldering guaranteed:260°C/10s at terminals
- Component in accordance to RoHS 2011/65/EU



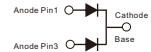
**AEC-Q101 Qualified**

### MECHANICAL DATA

- Case: JEDEC TO-220AB molded plastic body
- Terminals: Lead solderable per MIL-STD-750.method 2026
- Polarity: As marked
- Mounting Position: Any
- weight: 2.24g(Approx.)



TO-220AB



### 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

CASE:TO-220AB  
Marking:  
JF=Logo  
Y=Year  
W=Work Week  
S=Chip Size  
MUR1660CT-V=Device Code  
V=For Automobile

### MAXIMUM RATINGS

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

Parameters	Symbol	Value	Unit
Maximum repetitive peak reverse voltage	V <sub>RRM</sub>	600	V
Maximum average forward rectified current	I <sub>F(AV)</sub>	Per Leg:8.0 Total:16.0	A
Peak forward surge current 8.3mS single half sine-wave superimposed on rated load (JEDEC method,Total device)	I <sub>FSM</sub>	150	A
Operating junction temperature range	T <sub>J</sub>	-65 to 175	°C
Storage temperature range	T <sub>stg</sub>	-65 to 175	°C

## RATINGS AND CHARACTERISTICS OF MUR1660CT-V

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

Parameters	Test Conditions	Symbol	Min.	Typ.	Max.	Units	
Breakdown voltage Blocking voltage	$I_R=200\mu\text{A}$	$V_{BR}$ $V_R$	600	–	–	V	
Instaneous forward voltage	$T_J=25^\circ\text{C}$	$I_F=1.0\text{A}$	–	0.97	–	V	
		$I_F=3.0\text{A}$	–	1.10	–		
		$I_F=8.0\text{A}$	–	1.25	1.50		
	$T_J=125^\circ\text{C}$	$I_F=1.0\text{A}$	–	0.76	–		
		$I_F=3.0\text{A}$	–	0.92	–		
		$I_F=8.0\text{A}$	–	1.12	–		
Reverse current	$T_J=25^\circ\text{C}$	$V_R=600\text{V}$	$I_R^{2)}$	–	–	5	$\mu\text{A}$
	$T_J=125^\circ\text{C}$			–	–	50	$\mu\text{A}$
	$T_J=150^\circ\text{C}$			–	–	250	
Junction capacitance	4V, 1MHz	$C_J$	–	23	–	pF	

Notes: 1.Pulse Test:300  $\mu\text{S}$  pulse width,1% duty cycle

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

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

Parameters	Test Conditions	Symbol	Min.	Typ.	Max.	Units
Reverse recovery time	$I_F=0.5\text{A}, I_R=1\text{A}, I_{RR}=0.25\text{A}$	trr	–	28	35	ns

# RATINGS AND CHARACTERISTICS OF MUR1660CT-V

## THERMAL CHARACTERISTICS

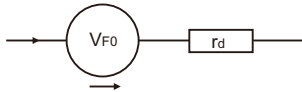
Parameter	Symbol	TO-220AB	Unit
Typical thermal resistance <sup>3)</sup>	$R_{\theta JC}$	2.5	$^{\circ}\text{C}/\text{W}$

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)
MUR1660CT-V TO-220AB	P/T	558×148×38	1000	565×225×170	5

## Equivalent circuits for forward power loss calculation



$V_{F0}$ : threshold voltage      1.05V  
 $r_d$ : Dynamic resistance      0.033 $\Omega$   
 Forward power loss of diode =  $V_{F0} \times I_{F(AV)} + r_d \times I_{F(RMS)}^2$

FIG.1-FORWARD CURRENT DERATING CURVE

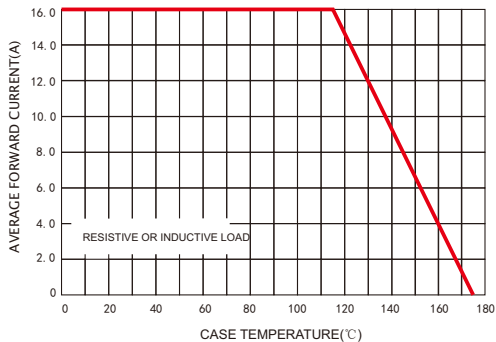
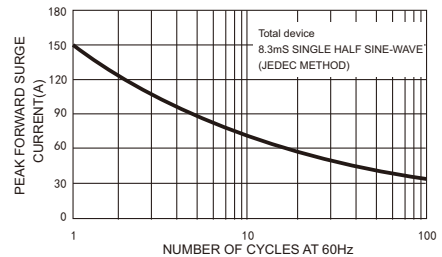


FIG2.-MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT



# RATINGS AND CHARACTERISTICS OF MUR1660CT-V

FIG.3-TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

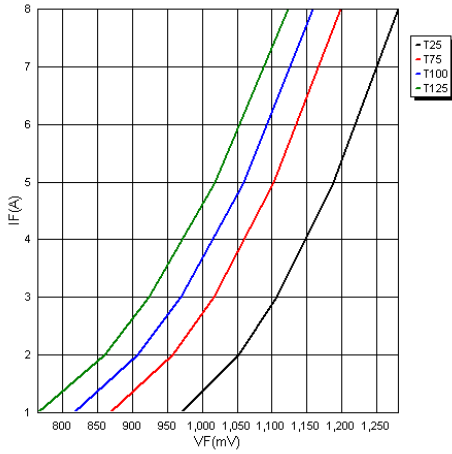


FIG.4-TYPICAL REVERSE CHARACTERISTICS

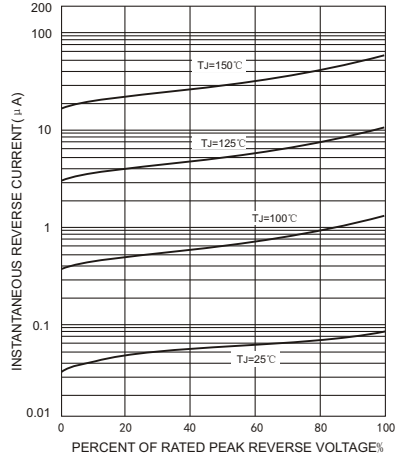
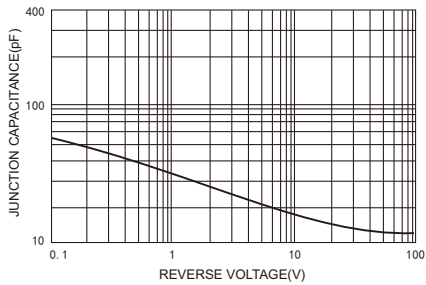
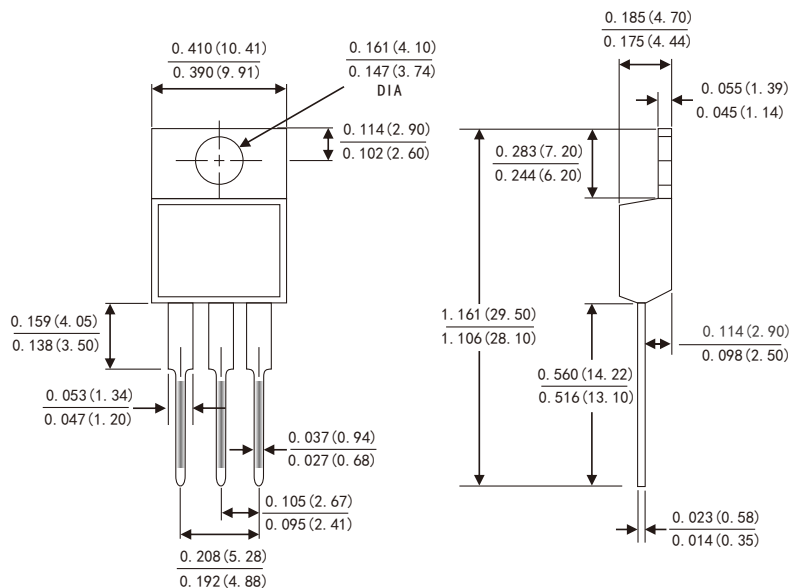


FIG.5-TYPICAL JUNCTION CAPACITANCE



# PACKAGE OUTLINE DIMENSIONS

## TO-220AB



Dimensions in inches and (millimeters)