

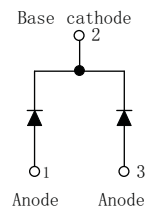
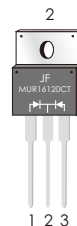
FEATURES

- 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°C/10 seconds at terminals
- Component in accordance to RoHS 2011/65/EU

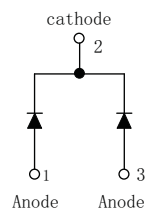
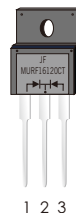


RoHS
COMPLIANT

TO-220AB



ITO-220AB



MECHANICAL DATA

- Case: JEDEC TO-220AB ITO-220AB 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	
$I_F(AV)$	$2 \times 8.0A$
V_R	1200V
I_{FSM}	150A
V_F at $I_F=8.0A, 125^\circ C$	1.60V
$T_{rr typ}$	42ns
T_{JMAX}	175°C
Chip	Double die

MAXIMUM RATINGS

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

Parameter	Symbol	Value	Unit
Maximum repetitive peak reverse voltage	V_{RRM}	1200	V
Maximum average forward rectified current	$I_F(AV)$	16.0	A
Peak forward surge current 8.3ms single half sine-wave superimposed on rated load (JEDEC method at rated T_J)	I_{FSM}	150	A
Operating junction temperature range	T_J	-55 to +175	°C
Storage temperature range	T_{stg}	-55 to +175	°C

RATINGS AND CHARACTERISTIC OF MUR16120CT\MURF16120CT

ELECTRICAL CHARACTERISTICS (T_J=25°C Unless otherwise noted)

Parameter	Test Conditions		Symbol	Min.	Typ.	Max.	Unit
Breakdown voltage Blocking voltage	I _R =200μA		V _{BR} V _R	1200	–	–	V
Instaneous forward voltage	T _J =25°C	I _F =1.0A	V _F ¹⁾	–	1.20	–	V
		I _F =3.0A		–	1.50	–	
		I _F =8.0A		–	1.90	2.35	
	T _J =125°C	I _F =1.0A		–	0.91	–	
		I _F =3.0A		–	1.20	–	
		I _F =8.0A		–	1.60	–	
Reverse current	T _J =25°C	V _R =1200V	I _R ²⁾	–	0.1	5	μA
	T _J =100°C			–	1.0	–	μA
	T _J =125°C			–	5	50	
Junction capacitance	4V, 1MHz		C _J	–	24	–	pF

Notes: 1.Pulse test: 300 μs pulse width, 1% duty cycle

2.Pulse test: pulse width ≤ 40ms

DYNAMIC RECOVERY CHARACTERISTICS (T_J=25°C Unless otherwise noted)

Parameter	Test Conditions		Symbol	Min.	Typ.	Max.	Unit
Reverse recovery time	I _F =1.0A, dI _F /dt=100A/μs, V _R =30V		t _{rr}		42		ns
	T _J =25°C				150		
	T _J =125°C				200		
Peak recovery current	T _J =25°C	I _F =8A dI _F /dt=100A/μs V _R =390V	I _{RRM}		3		A
	T _J =125°C				5		
Reverse recovery charge	T _J =25°C		Q _{rr}		370		nC
	T _J =125°C				745		

RATINGS AND CHARACTERISTIC OF MUR16120CT\MURF16120CT

THERMAL CHARACTERISTICS

Parameter	Symbol	TO-220AB	ITO-220AB	Unit
Typical thermal resistance ³⁾	$R_{\theta JC}$	2.5	4.5	°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 SizeL×W×H(mm)	Quantity (box/carton)
MUR16120CT-TO-220AB	P/T	558×148×38	1000	565×225×170	5
MURF16120CT-ITO-220AB	P/T	558×148×38	1000	565×225×170	5

FIG.1-FORWARD CURRENT DERATING CURVE

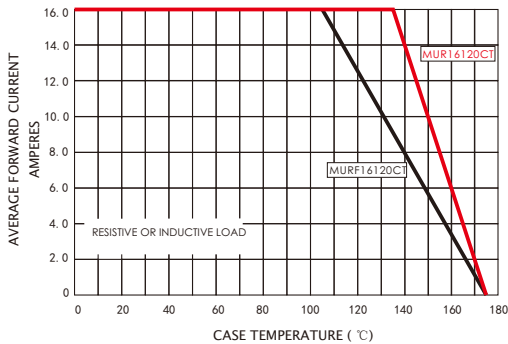
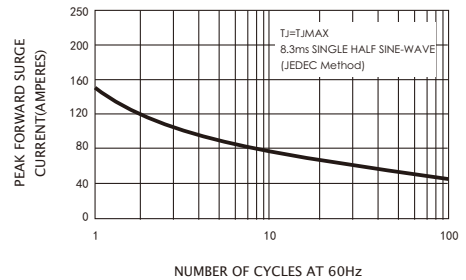


FIG.2-MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT



RATINGS AND CHARACTERISTIC OF MUR16120CT\MURF16120CT

FIG.3-TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

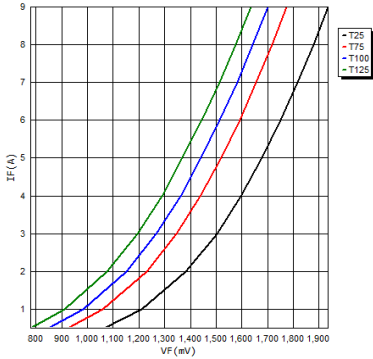


FIG.4-TYPICAL REVERSE CHARACTERISTICS

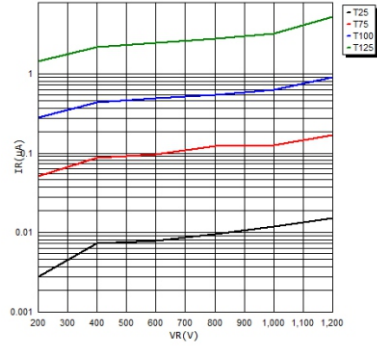


FIG.5-TYPICAL JUNCTION CAPACITANCE

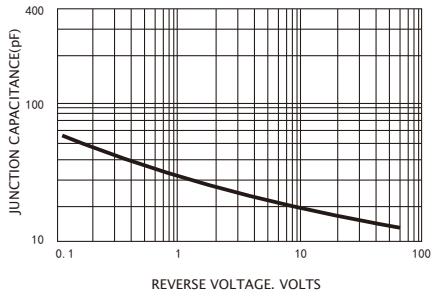


FIG.6- TYPICAL REVERSE RECOVERY TIME vs. diF/dt

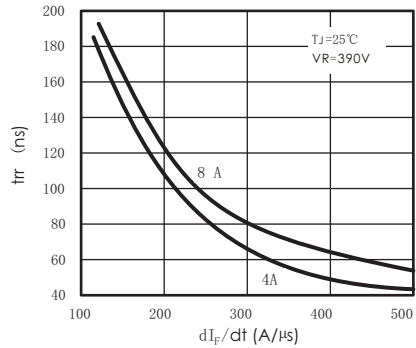


FIG.7- TYPICAL STORED CHARGE VS.diF/dt

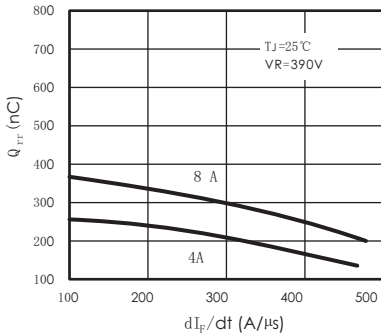
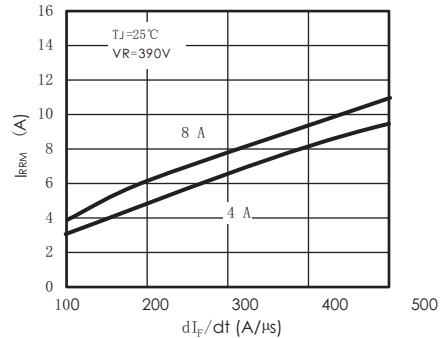
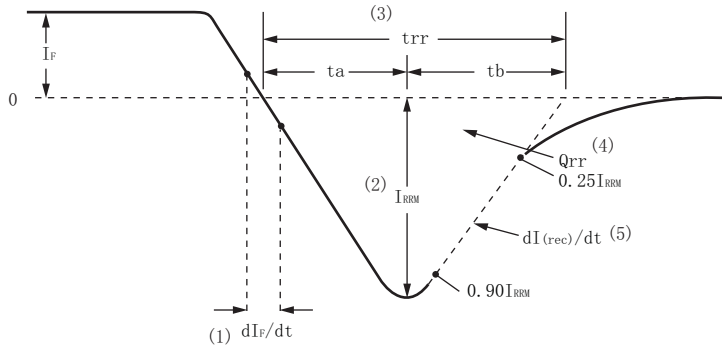


FIG.8- TYPICAL REVERSE RECOVERY CURRENT VS.diF/dt



RATINGS AND CHARACTERISTIC OF MUR16120CT\MURF16120CT



- (1) dI_F/dt -rate of change of current through zero crossing
- (2) I_{RRM} -peak reverse recovery current
- (3) t_{rr} -reverse recovery time measured from zero crossing point of negative going I_F to point where a line passing through $0.90I_{RRM}$ and $0.25I_{RRM}$ extrapolated to zero current
- (4) Q_{rr} -area under curve defined by t_{rr} and I_{RRM}

$$Q_{rr} = \frac{t_{rr} \times I_{RRM}}{2}$$

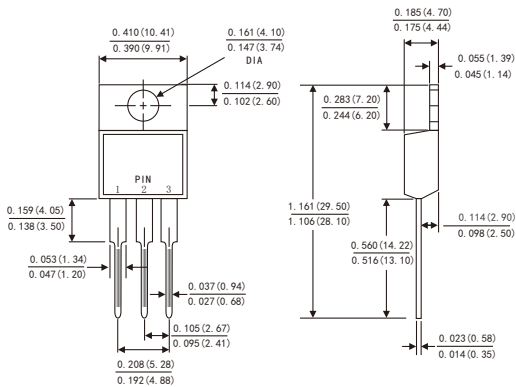
- (5) $dI_{(rec)}/dt$ -peak rate of change of current during t_b portion of t_{rr}

Fig. 9 – Reverse Recovery Waveform and Definitions

PACKAGE OUTLINE DIMENSIONS

Dimensions in inches and (millimeters)

TO-220AB



ITO-220AB

