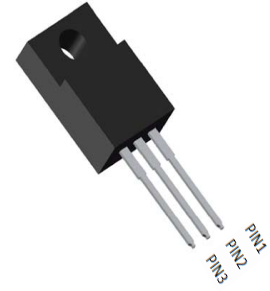




TO-220AB

ITO-220AB



### Features

- Adopt FRD chip
- Low forward Voltage drop
- Fast reverse recovery time
- High frequency operation
- High purity, high temperature epoxy encapsulation for enhanced mechanical strength and moisture resistance
- Guard ring for enhanced ruggedness and long term reliability

### Typical Applications

Typical applications are in switching power supplies, converters, freewheeling diodes, and reverse battery protection.

### Mechanical Data

- **Package:** TO-220AB ITO-220AB  
Molding compound meets UL 94 V-0 flammability rating, RoHS-compliant
- **Terminals:** Tin plated leads, solderable per J-STD-002 and JESD22-B102
- **Polarity:** As marked



### Maximum Ratings ( $T_A=25^\circ\text{C}$ Unless otherwise specified)

TYPE	$V_{RSM}$ V	$V_{RRM}$ V
MUR1680CT	800	800
MUR1680FCT	800	800

Parameter	Symbol		Units
Maximum Recurrent Peak Reverse Voltage	$V_{RRM}$	800	V
Maximum RMS Voltage	$V_{RMS}$	560	V
Maximum DC Blocking Voltage	$V_{DC}$	800	V
Maximum Average Forward Rectified Current (Total Device)	$I_{F(AV)}$	16	A
Peak Forward Surge Current, 8.3 ms Single Half Sine-wave Superimposed on Rated Load (JEDEC method)	$I_{FSM}$	125	A
Maximum Instantaneous Forward Voltage (Note 1) @ 8 A (Per Diode/Per Leg)	$V_F$	1.95	V
Maximum DC Reverse Current @ $T_A=25^\circ\text{C}$ at Rated DC Blocking Voltage @ $T_A=125^\circ\text{C}$	$I_R$	5.0 100	$\mu\text{A}$
Maximum Reverse Recovery Time (Note 2)	$T_{rr}$	50	nS
Typical Junction Capacitance (Note 3)	$C_j$	50	pF
Typical Thermal Resistance	$R_{\theta JC}$	1.5	$^\circ\text{C/W}$
Operating Temperature Range	$T_J$	- 55 to + 175	$^\circ\text{C}$
Storage Temperature Range	$T_{STG}$	- 55 to + 175	$^\circ\text{C}$

Note 1: Pulse Test with PW=300 usec, 1% Duty Cycle

Note 2: Reverse Recovery Test Conditions:  $I_F=0.5\text{A}$ ,  $I_R=1.0\text{A}$ ,  $IRR=0.25\text{A}$

Note 3: Measured at 1 MHz and Applied Reverse Voltage of 4.0V D.C.



## ■ Characteristics (Typical)

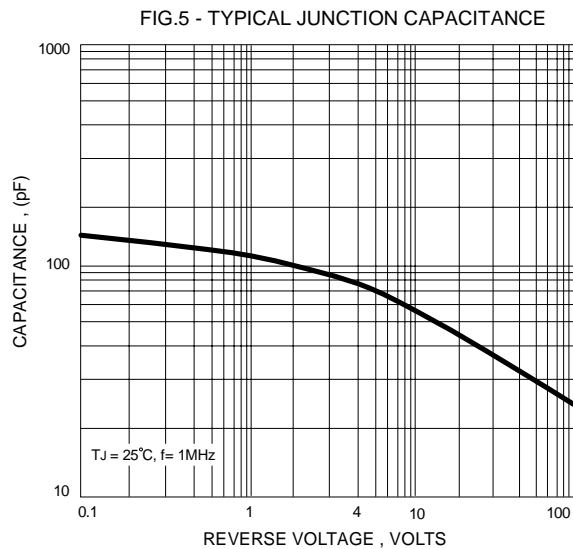
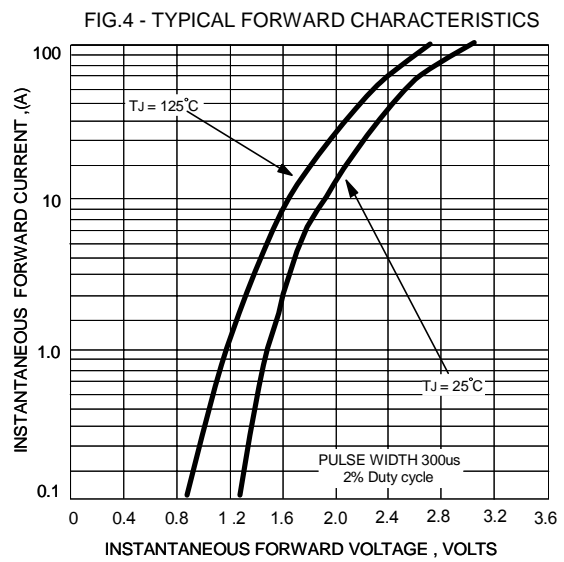
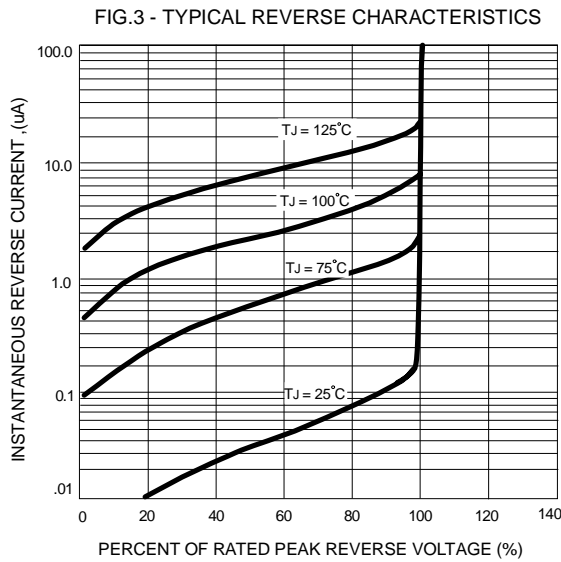
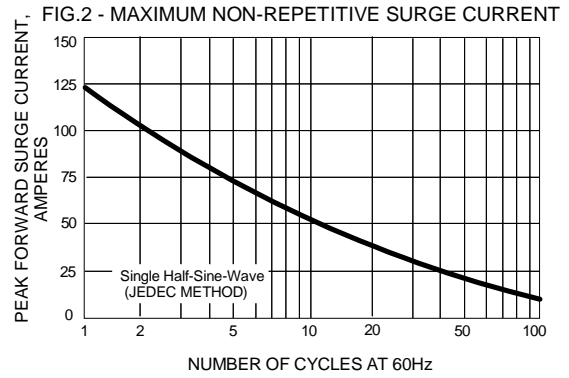
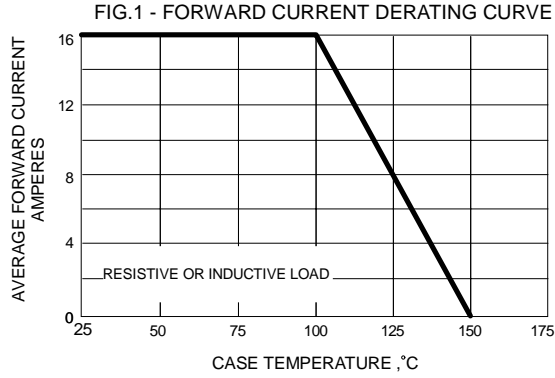
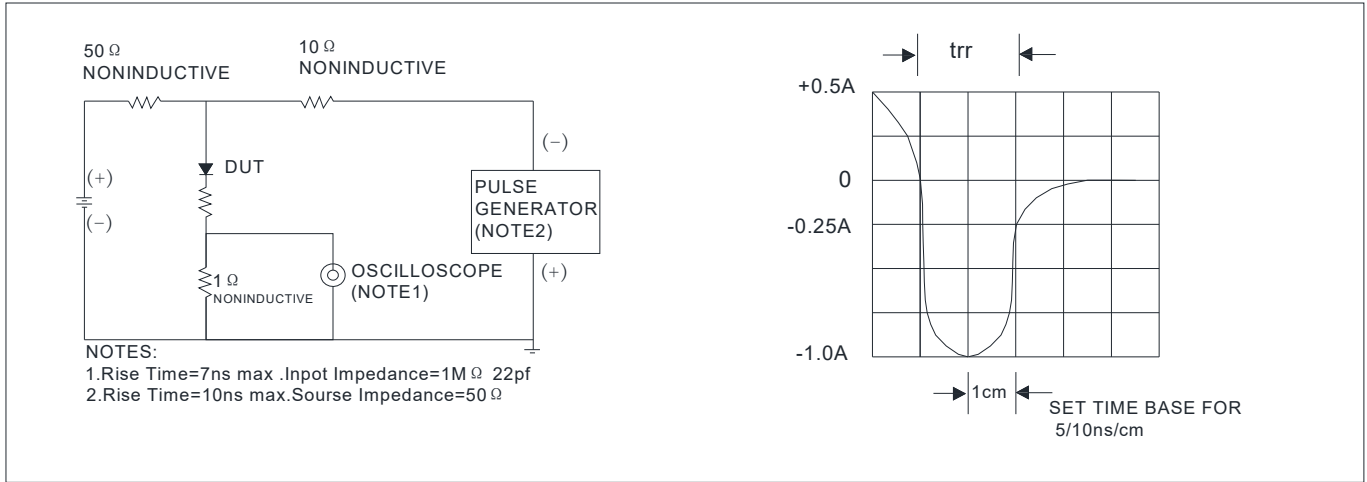




FIG.5: Diagram of circuit and Testing wave form of reverse recovery time



### ■ Thermal Characteristics (T<sub>a</sub>=25°C Unless otherwise specified)

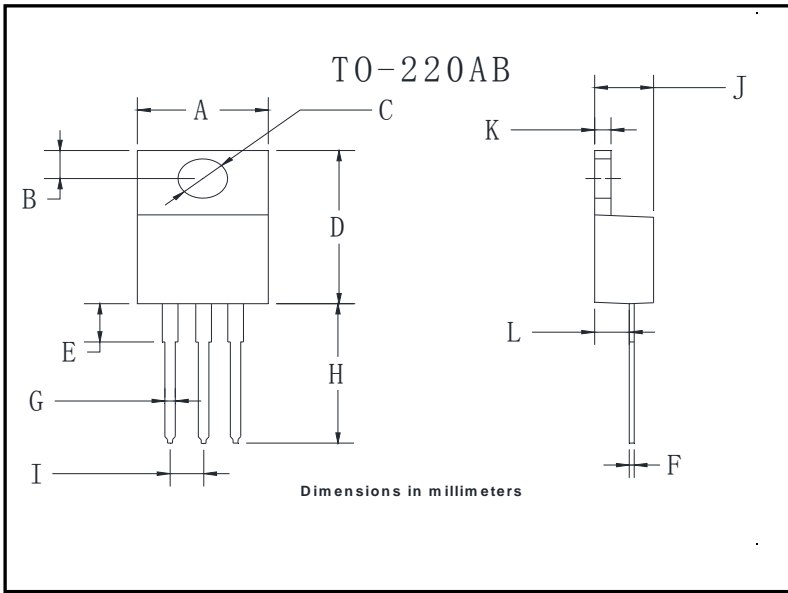
PARAMETER		SYMBOL	UNIT	MUR1680CT/MUR1680FCT
Thermal Resistance	Between junction and case	R <sub>θJ-C</sub>	°C/W	4.0
	Between junction and Air	R <sub>θJ-A</sub>	°C/W	50

### ■ Ordering Information (Example)

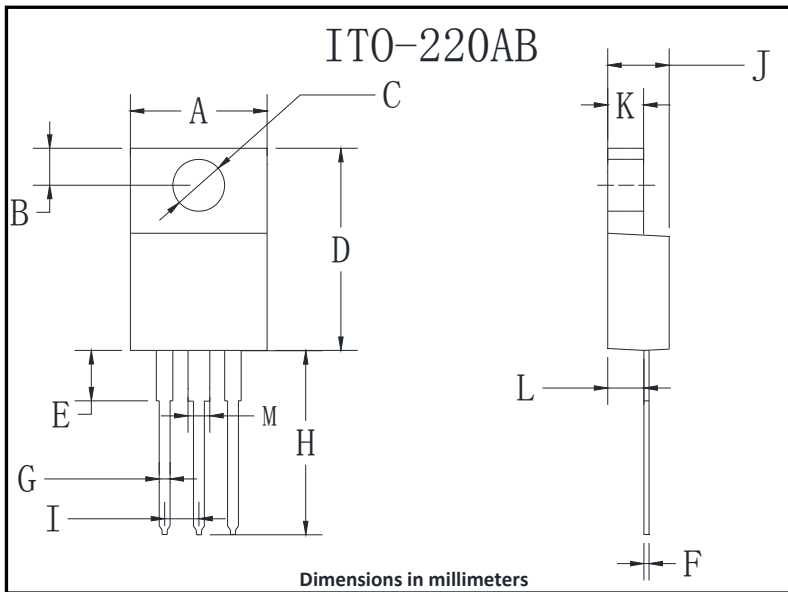
PREFERRED P/N	UNIT WEIGHT(g)	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
MUR1680CT/MUR1680FCT	Approximate 1.6	50	1000	5000	Tube



## ■ Outline Dimensions



TO-220AB		
Dim	Min	Max
A	9.5	10.9
B	2.22	3.27
C	3.34	4.31
D	14.5	15.5
E	3.16	4.46
F	0.28	0.64
G	0.68	0.94
H	13.06	14.62
I	2.01	3.07
J	4.04	5.1
K	1.14	1.4
L	2.14	3.19



ITO-220AB		
Dim	Min	Max
A	9.8	10.2
B	2.25	2.75
C	2.95	3.45
D	14.75	15.25
E	3.05	3.95
F	0.45	0.75
G	0.45	0.75
H	13.4	14.2
I	2.35	2.75
J	4.3	4.8
K	2.58	2.82
L	2.58	2.82
M	1.47	1.77

Package	Packing	Box Size L×W×H(mm)	Quantity(pcs/box)	Carton Size L×W×H(mm)	Quantity(pcs/carton)
TO-220AB	50pcs/Tube	558×148×38	1000	565×225×175	5000