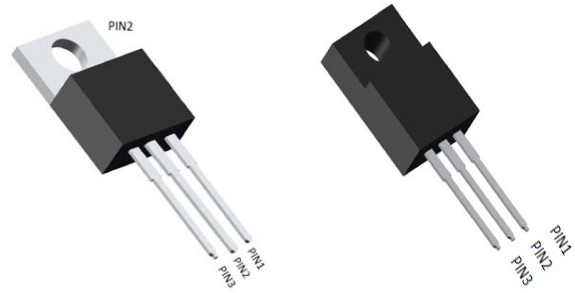


## Features

- 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

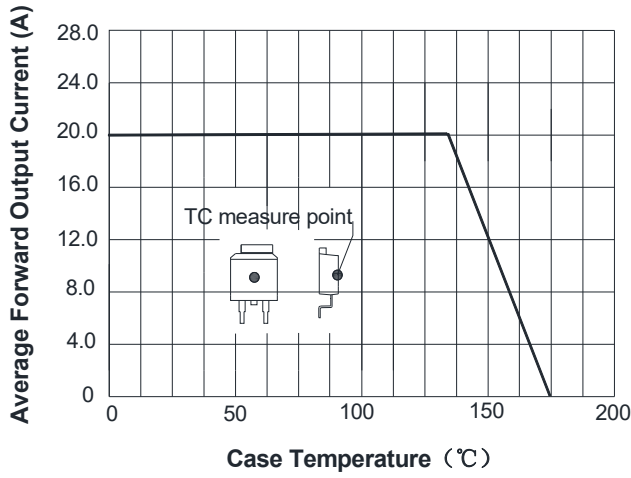
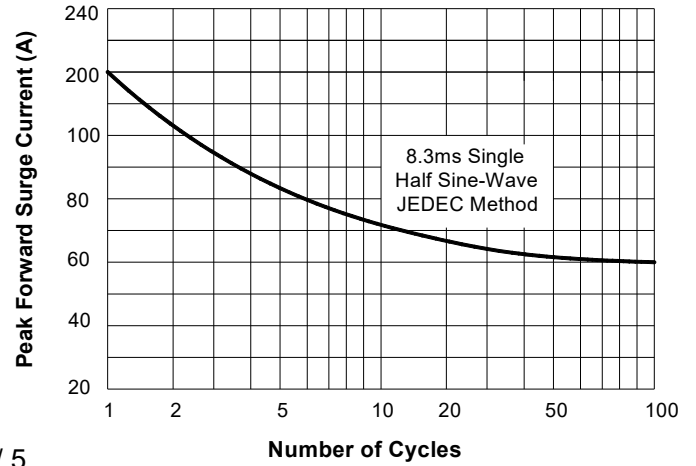


## ■Maximum Ratings (Ta=25°C Unless otherwise specified)

	V <sub>RSM</sub> V	V <sub>RRM</sub> V
<b>MUR2020CT</b>	200	200
<b>MUR2020FCT</b>	200	200

Symbol	Test Conditions	Maximum Ratings	Unit
<b>I<sub>FRMS</sub></b> <b>I<sub>FAVM</sub></b>	T <sub>C</sub> =150°C; rectangular, d=0.5	38 2 x 10	A
<b>I<sub>FSM</sub></b>	T <sub>VJ</sub> =45°C; t <sub>p</sub> =10ms (50Hz), sine	200	A
<b>E<sub>AS</sub></b>	T <sub>VJ</sub> =25°C; non-repetitive; I <sub>AS</sub> =2A; L=180uH	0.5	mJ
<b>I<sub>AR</sub></b>	V <sub>A</sub> =1.5·V <sub>R</sub> typ.; f=10kHz; repetitive	0.2	A
<b>T<sub>VJ</sub></b> <b>T<sub>VJM</sub></b> <b>T<sub>stg</sub></b>		-55...+175 175 -55...+175	°C
<b>P<sub>tot</sub></b>	T <sub>C</sub> =25°C	60	W
<b>M<sub>d</sub></b>	mounting torque	0.4...0.6	Nm
<b>Weight</b>	typical	2	g

Symbol	Test Conditions	Characteristic Values		Unit
		typ.	max.	
<b>I<sub>R</sub></b>	T <sub>VJ</sub> =25°C; V <sub>R</sub> =V <sub>RRM</sub>		50	uA
<b>V<sub>F</sub></b>	I <sub>F</sub> =8A; T <sub>VJ</sub> =25°C	0.98	1.15	V
<b>R<sub>thJC</sub></b> <b>R<sub>thCH</sub></b>		0.5	2.5	K/W
<b>t<sub>rr</sub></b>	I <sub>F</sub> =1A; -di/dt=50A/us; V <sub>R</sub> =30V; T <sub>VJ</sub> =25°C	30	35	ns
<b>I<sub>RM</sub></b>	V <sub>R</sub> =100V; I <sub>F</sub> =10A; -di <sub>F</sub> /dt=100A/us; T <sub>VJ</sub> =100°C		4.1	A

**■ Characteristics (Typical)**
**FIG1: I<sub>o</sub> -T<sub>c</sub> Curve**

**FIG2: Surge Forward Current Capability**


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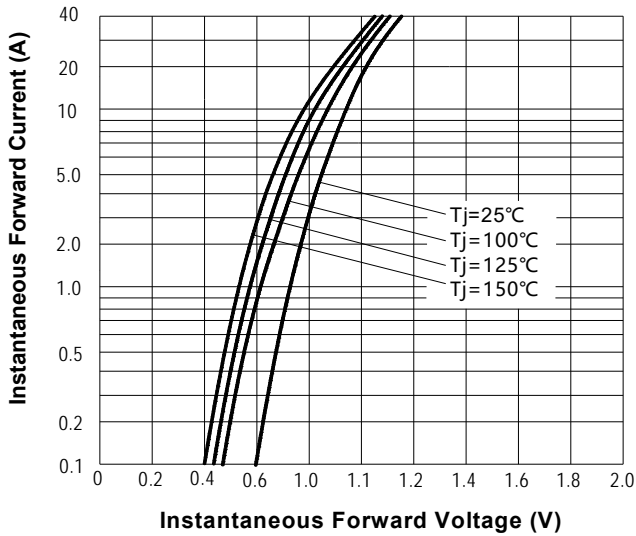
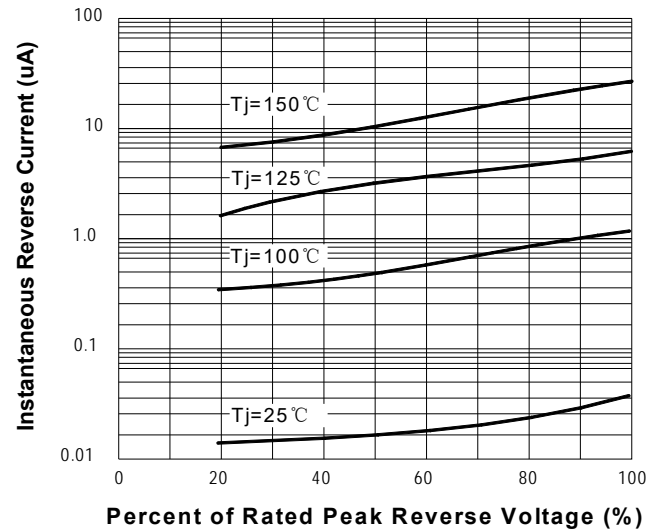
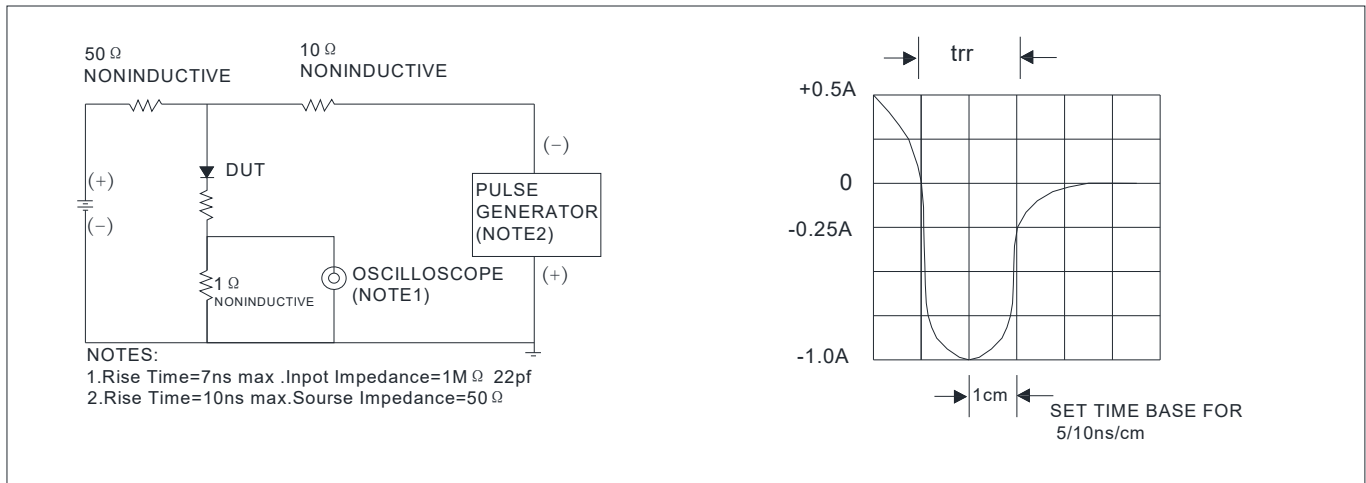
**FIG3: Forward Voltage**

**FIG4: Instantaneous Reverse Characteristics**


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



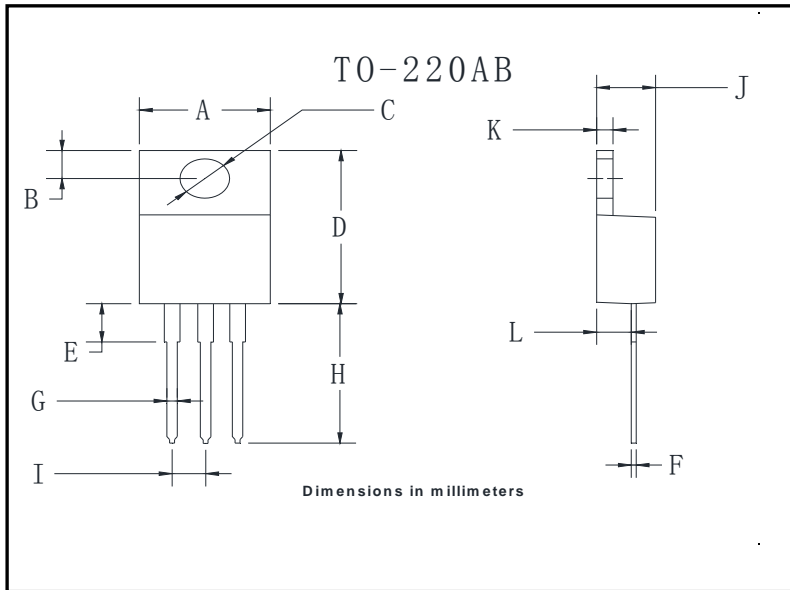
### ■ Thermal Characteristics (T<sub>a</sub>=25°C Unless otherwise specified)

PARAMETER		SYMBOL	UNIT	MUR2020CT/MUR2020FCT
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

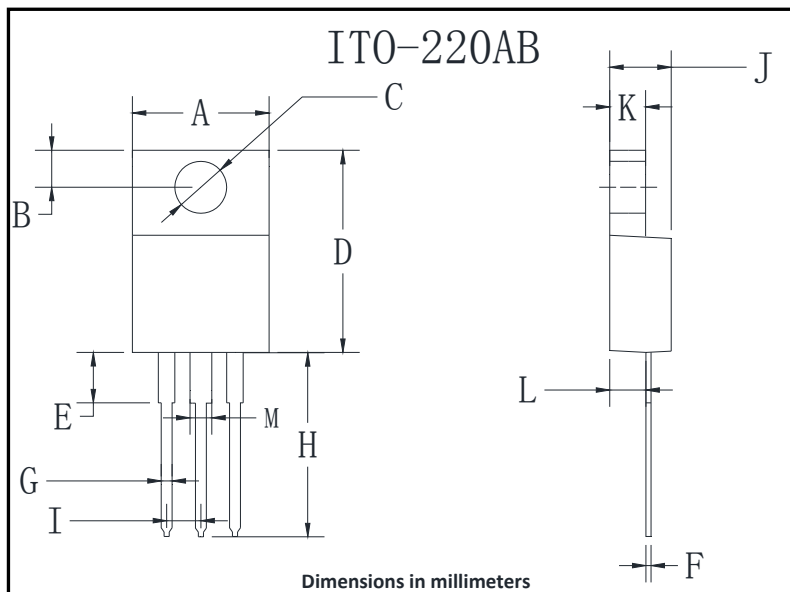
### ■ Ordering Information (Example)

PREFERED P/N	UNIT WEIGHT(g)	MINIIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
MUR2020CT/MUR2020FCT	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