

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

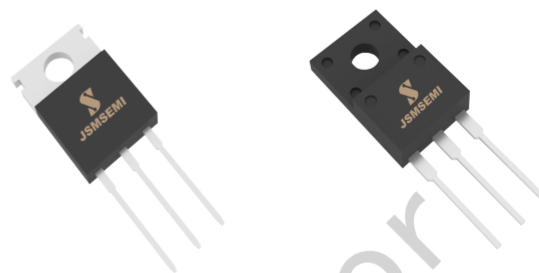
- **Terminals:** Tin plated leads, solderable per J-STD-002 and JESD22-B102
- **Polarity:** As marked

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

Product Numbers	V_{RSM} V	V_{RRM} V
MUR2020CT	200	200
MURF2020CT	200	200

Symbol	Test Conditions	Maximum Ratings	Unit
I_{FRMS} I_{FAVM}	$T_C=150^{\circ}\text{C}$; rectangular, $d=0.5$	38 2 x 10	A
I_{FSM}	$T_{VJ}=45^{\circ}\text{C}$; $t_p=10\text{ms}$ (50Hz), sine	200	A
E_{AS}	$T_{VJ}=25^{\circ}\text{C}$; non-repetitive; $I_{AS}=2\text{A}$; $L=180\mu\text{H}$	0.5	mJ
I_{AR}	$V_A=1.5 \cdot V_R$ typ.; $f=10\text{kHz}$; repetitive	0.2	A
T_{VJ} T_{VJM} T_{stg}		-55...+175 175 -55...+175	$^{\circ}\text{C}$
P_{tot}	$T_C=25^{\circ}\text{C}$	60	W
M_d	mounting torque	0.4...0.6	Nm
Weight	typical	2	g

Symbol	Test Conditions	Characteristic Values typ.	max.	Unit
I_R	$T_{VJ}=25^{\circ}\text{C}$; $V_R=V_{RRM}$		50	μA
V_F	$I_F=8\text{A}$; $T_{VJ}=25^{\circ}\text{C}$	0.98	1.15	V
R_{thJC} R_{thCH}		0.5	2.5	K/W
t_{rr}	$I_F=1\text{A}$; $-di/dt=50\text{A}/\mu\text{s}$; $V_R=30\text{V}$; $T_{VJ}=25^{\circ}\text{C}$	30	35	ns
I_{RM}	$V_R=100\text{V}$; $I_F=10\text{A}$; $-di_F/dt=100\text{A}/\mu\text{s}$; $T_{VJ}=100^{\circ}\text{C}$		4.1	A



Characteristics (Typical)

FIG1: I_o -T_c Curve

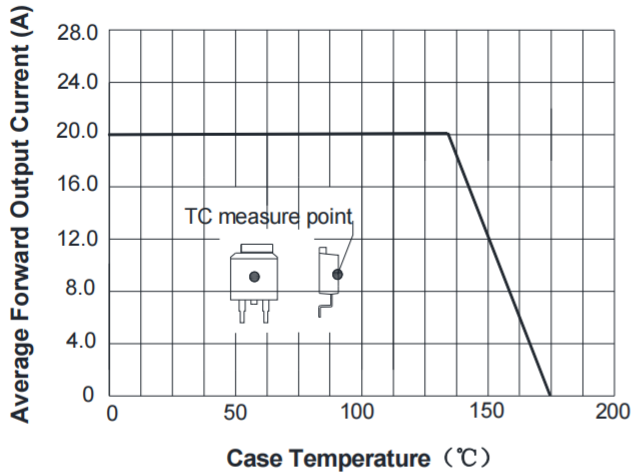
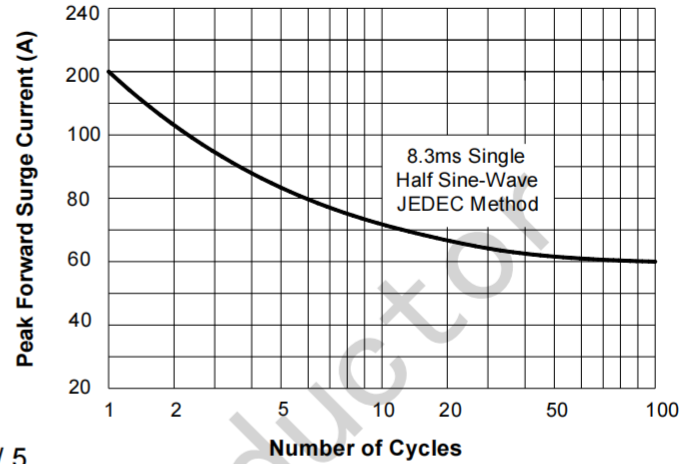


FIG2: Surge Forward Current Capability



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FIG3: Forward Voltage

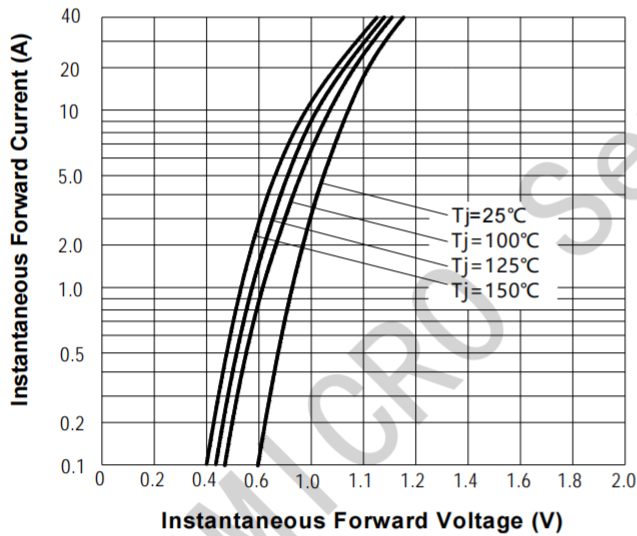


FIG.4: Instantaneous Reverse Characteristics

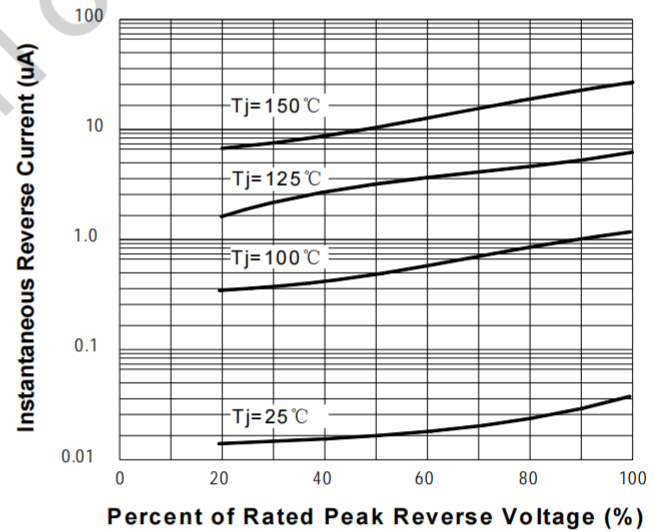
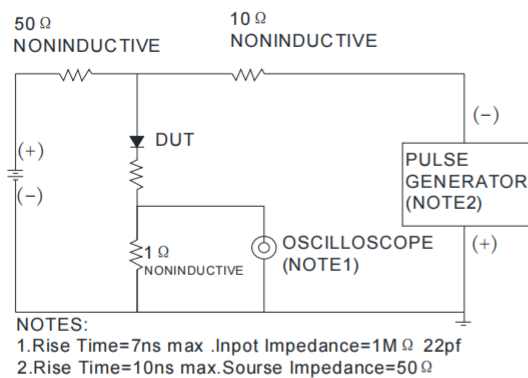
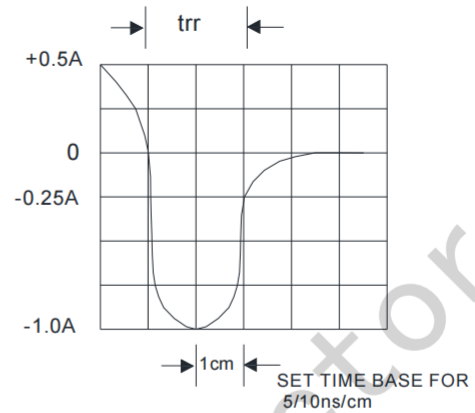


FIG.5: Diagram of circuit and Testing wave form of reverse recovery time

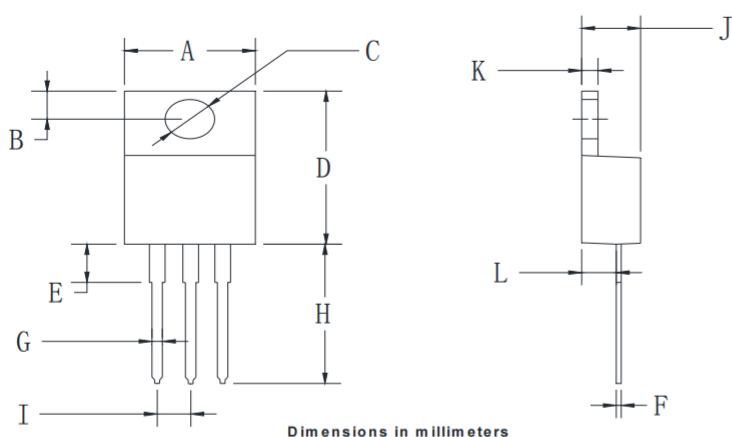


Thermal Characteristics (Ta=25°C Unless otherwise specified)

PARAMETER		SYMBOL	UNIT	MUR2020CT /MURF2020CT
Thermal Resistance	Between junction and case	R _{θJ-C}	°C/W	4.0
	Between junction and Air	R _{θJ-A}	°C/W	50

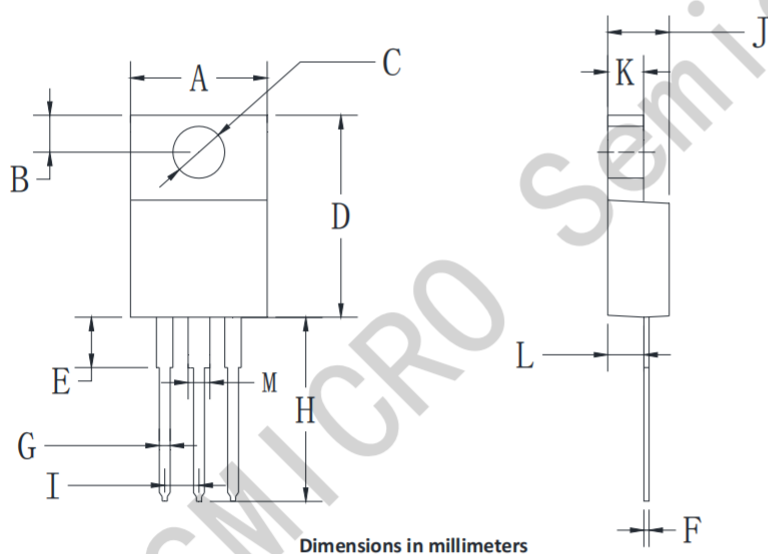
Outline Dimensions

TO-220AB



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



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