



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

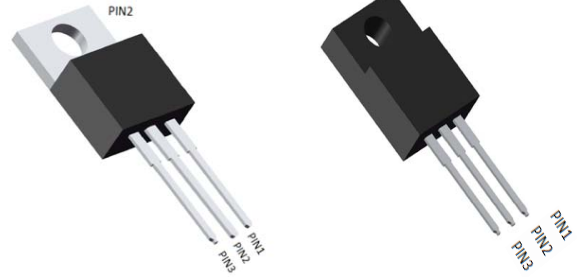
Typical applications are in switching power supplies, converters, freewheeling diodes, and reverse battery protection.

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

TO-220AB

ITO-220AB



Maximum Ratings (T_a=25°C Unless otherwise specified)

TYPE	V _{RSM} V	V _{RSM} V
MTSR1020CT	200	200
MTSR1020FCT	200	200

Maximum Ratings (T_j=25°C Unless otherwise specified)

PARAMETER	SYMBOL	UNIT	MTSR1020CT/MTSR1020FCT
Device marking code			MTSR1020CT/MTSR1020FCT
Repetitive Peak Reverse Voltage	V _{RRM}	V	200
Average Rectified Output Current @60Hz sine wave, R-load, T _c (FIG.1)	I _O	A	10
Surge(Non-repetitive)Forward Current @60Hz half sine-wave, 1 cycle, T _j =25°C	I _{FSM}	A	80
Current Squared Time @1ms≤t≤8.3ms T _j =25°C,	I ² t	A ² s	10
Storage Temperature	T _{stg}	°C	-55 ~ +175
Junction Temperature	T _j	°C	-55 ~ +175
Typical Junction capacitance @4V,1MHz	C _j	pF	50
Mounting torque @recommend torque: 5kg·cm	Tor	kg·cm	8



■Electrical Characteristics

PARAMETER	SYMBOL	UNIT	TEST CONDITIONS	Min	Typ	Max	
Instantaneous forward voltage drop per diode	V_{FM}	V	$I_{FM}=5.0A @T_j=25^{\circ}C$	-	0.90	1.0	
			$I_{FM}=5.0A @T_j=150^{\circ}C$		0.78	0.90	
DC reverse current at rated DC blocking voltage per diode	I_{RRM1}	uA	$V_{RM}=V_{RRM}$ $T_j=25^{\circ}C$	-	-	5	
	I_{RRM2}		$V_{RM}=V_{RRM}$ $T_j=150^{\circ}C$	-	25	50	
Reverse Recovery Time	T_{rr}	ns	$I_F=0.5A$ $I_{RM}=1A$ $I_{RR}=0.25A$ $T_j=25^{\circ}C$				
				$T_j=25^{\circ}C$		17.4	
				$T_j=125^{\circ}C$		29.4	
Peak recovery current	I_{RRM}	A	$T_j=25^{\circ}C$ $I_F=5A$ $di/dt=-200A/us$ $V_{RM}=100V$		3.11	-	
				$T_j=125^{\circ}C$		5.43	-
Reverse recovery charge	Q_{rr}	nC	$T_j=25^{\circ}C$ $T_j=125^{\circ}C$		29.64	-	
						80	-

■Thermal Characteristics ($T_j=25^{\circ}C$ Unless otherwise specified)

PARAMETER		SYMBOL	UNIT	
Thermal Resistance	Between junction and case	$R_{\theta J-C}$	$^{\circ}C/W$	4.0
Thermal Resistance	Between junction and Air	$R_{\theta J-A}$	$^{\circ}C/W$	50

■Ordering Information (Example)

PREFERRED P/N	UNIT WEIGHT(g)	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
MTSR1020CT MTSR1020FCT	Approximate 1.6	50	1000	5000	Tube

■Characteristics (Typical)

FIG1: I_o - T_c Curve

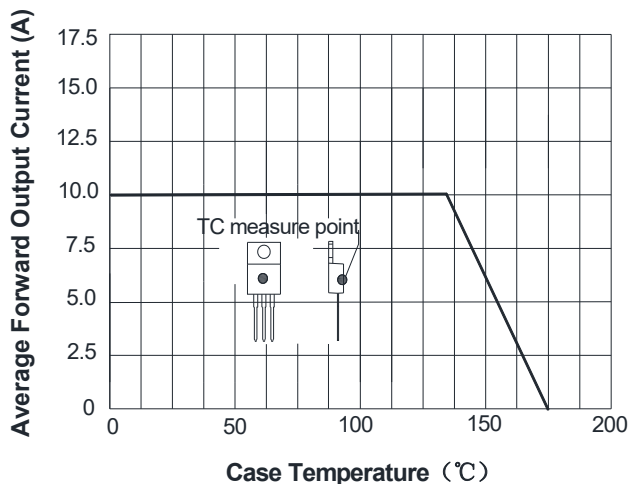


FIG2: Surge Forward Current Capability

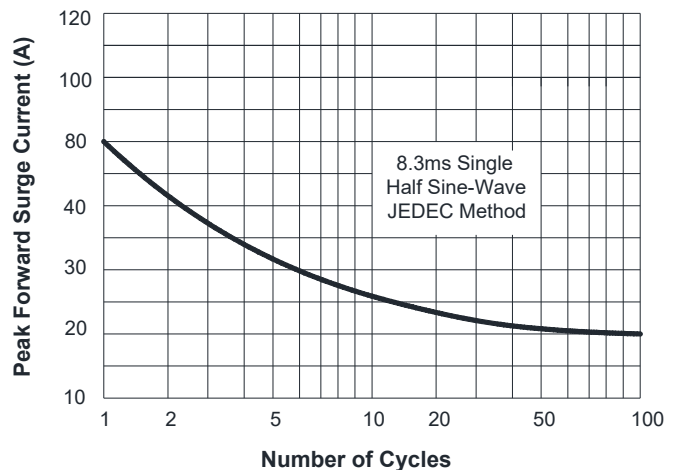




FIG3: Forward Voltage

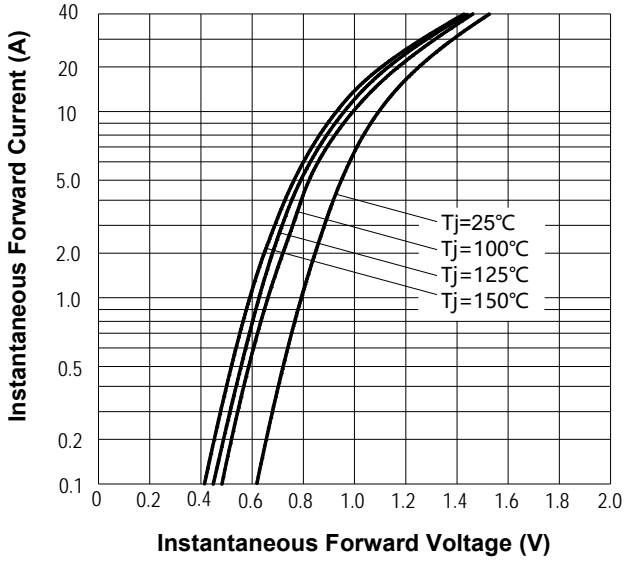


FIG.4: Instantaneous Reverse Characteristics

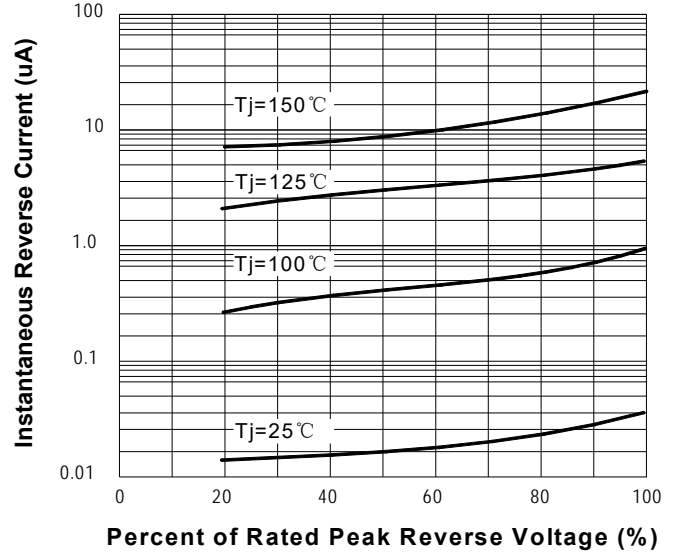
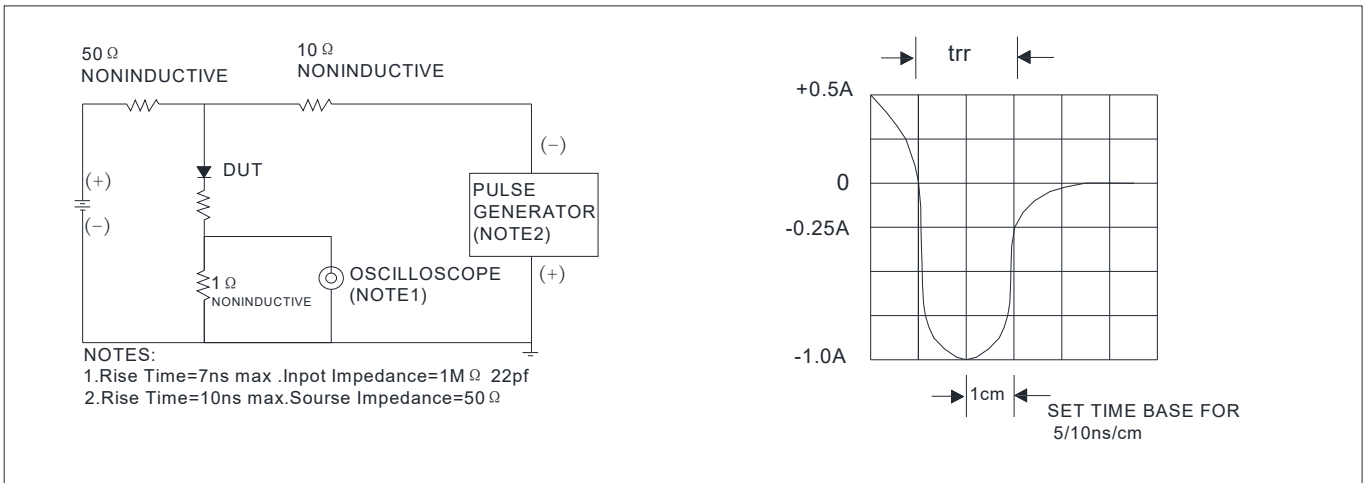
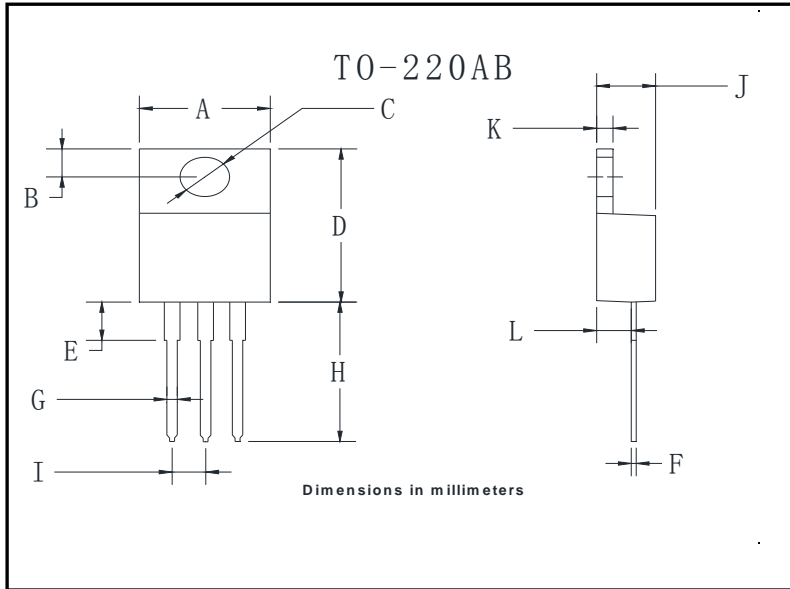


FIG.5: Diagram of circuit and Testing wave form of reverse recovery time

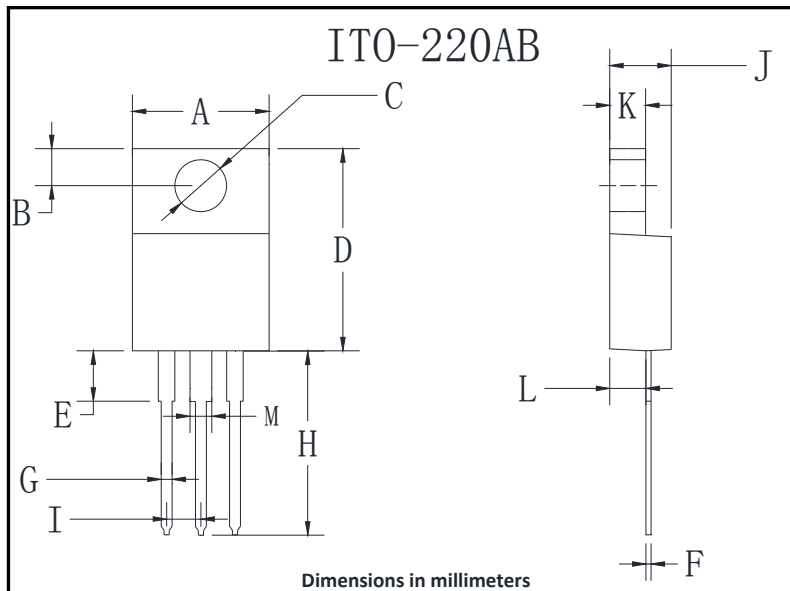




■ Outline Dimensions



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

Package	Packing	Box Size L×W×H(mm)	Quantity(pcs/box)	Carton Size L×W×H(mm)	Quantity(pcs/carton)
ITO-220AB	50pcs/Tube	558×148×38	1000	565×225×170	5000