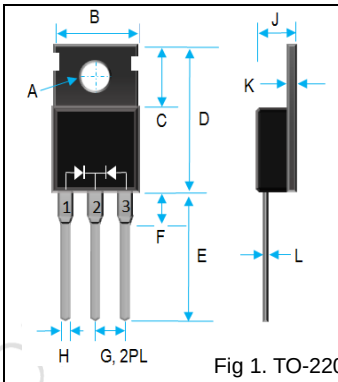
FR2005(F)CT THRU FR20100(F)CT SPECIFICATION

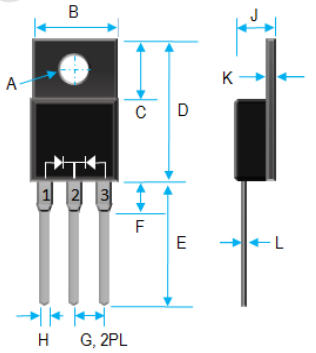
Rev. A

20A FAST RECOVERY RECTIFIERS



Dim.	Value Inch[mm] Min.	Max.
A	0.139 [3.55]	---
B	0.387 [9.85]	0.419 [10.66]
C	0.226 [5.75]	0.269 [6.85]
D	0.548 [13.93]	0.624 [15.87]
E	0.50 [12.70]	---
F	---	0.177 [4.50]
G	0.095[2.41]	0.105[2.67]
H	0.019 [0.50]	0.038 [0.96]
J	0.163 [4.16]	0.196 [5.00]
K	0.045 [1.15]	0.054 [1.39]
L	---	0.025 [0.65]

Fig 1. TO-220AB FOR FR20xxxCT



Dim.	Value Inch[mm] Min.	Max.
A	0.118 [3.0]	0.134 [3.4]
B	0.381 [9.7]	0.406[10.3]
C	0.248 [6.3]	0.272 [6.9]
D	0.583 [14.8]	0.606 [15.4]
E	0.512 [13.0]	0.548 [13.9]
F	---	0.161 [4.1]
G	0.095[2.41]	0.105[2.67]
H	0.019 [0.50]	0.028 [0.7]
J	0.165 [4.2]	0.189 [4.8]
K	0.099 [2.5]	0.130 [3.3]
L	---	0.032 [0.8]

Fig 2. ITO-220AB FOR FR20xxxFCT

PRODUCT FEATURES

1. FLAMMABILITY CLASSIFICATION 94V-0
2. LOW FORWARD VOLTAGE V_F
3. FAST RECOVERY TIME
4. LOW THERMAL RESISTANCE/HIGH VOLTAGE
5. GLASS PASSIVATED CHIP JUNCTION
6. CASE: TRANSFER MOLDED
   TO-220AB FOR FR2005CT THRU FR20100CT
   ITO-220AB FOR FR2005FCT THRU FR20100FCT
7. DIMENSIONS IN INCHES AND (MILLIMETERS)
8. LEADS: SOLDERABILITY PER MIL-STD-202 METHOD 208
9. WEIGHT: 2.1 GRAMS (TO-220AB)
   1.7 GRAMS (ITO-220AB)
10. RoHS COMPLIANT/HALOGEN FREE

ELECTRICAL CHARACTERISTICS

MAXIMUM RATINGS (T_A =25°C UNLESS OTHERWISE NOTED) AND ELECTRICAL CHARACTERISTICS

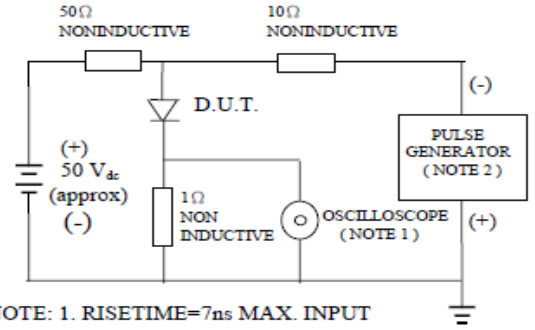
RATING	SYMBOL		UNITS
MAXIMUM AVERAGE FORWARD RECTIFIED CURRENT, SEE FIG.1	I_O	20 (PER DEVICE)	A
PEAK FORWARD SURGE CURRENT, 8.3ms SINGLE HALF SINE-WAVE SUPERIMPOSED ON RATED LOAD	I_{FSM}	175	A
TYPICAL JUNCTION CAPACITANCE @1MHz & REVERSE VOLTAGE 4V	C_J	55	pF
TYPICAL THERMAL RESISTANCE, JUNCTION TO CASE ON HEAT SINK	$R\theta jc$	2.2 (PER LEG)	°C/W
STORAGE TEMPERATURE RANGE	T_{STG}	- 55 TO +175	°C
OPERATING TEMPERATURE RANGE	T_{OP}	- 55 TO +150	°C
MAXIMUM FORWARD VOLTAGE AT 10A PER LEG	V_F	1.3	V
MAXIMUM REVERSE CURRENT AT 25°C	I_R	10	μA
MAXIMUM REVERSE CURRENT AT 125°C	I_R	500	μA

PART NUMBER	MAX RECURRENT PK REVERSE VOLTAGE/DC BLOCKING V_{RRM}/V_R (V)	MAX V_{RMS} (V)	MAX REVERSE RECOVERY TIME T_{RR} (nS)	MARKING
FR2005CT/FR2005FCT	50	35	150	SAME AS P/N
FR2010CT/FR2010FCT	100	70	150	SAME AS P/N
FR2020CT/FR2020FCT	200	140	150	SAME AS P/N
FR2040CT/FR2040FCT	400	280	150	SAME AS P/N
FR2060CT/FR2060FCT	600	420	250	SAME AS P/N
FR2080CT/FR2080FCT	800	560	500	SAME AS P/N
FR20100CT/FR20100FCT	1000	700	500	SAME AS P/N

NOTE： 1. REVERSE RECOVERY TEST CONDITIONS: I_F=0.5A, I_R=1.0A, I_{RR}=0.25A.
2. CURRENT RATING IS BASED ON SINGLE PHASE, 1/2 WAVE, 60HZ, RESISTIVE, OR INDUCTIVE LOAD. FOR CAPACITIVE LOAD, DERATE CURRENT BY 20%

RATINGS AND CHARACTERISTIC CURVES

FIG. 1 -TEST CIRCUIT DIAGRAM AND REVERSE RECOVERY TIME CHARACTERISTIC



NOTE: 1. RISETIME=7ns MAX. INPUT IMPEDANCE=1 MEGOHM 22PF
2. RISE TIME =10 ns MAX. SOURCE IMPEDENCE=50 OHMS

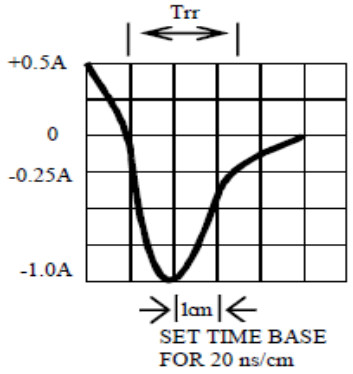


FIG. 2 -TYPICAL FORWARD CURRENT DERATING CURVE

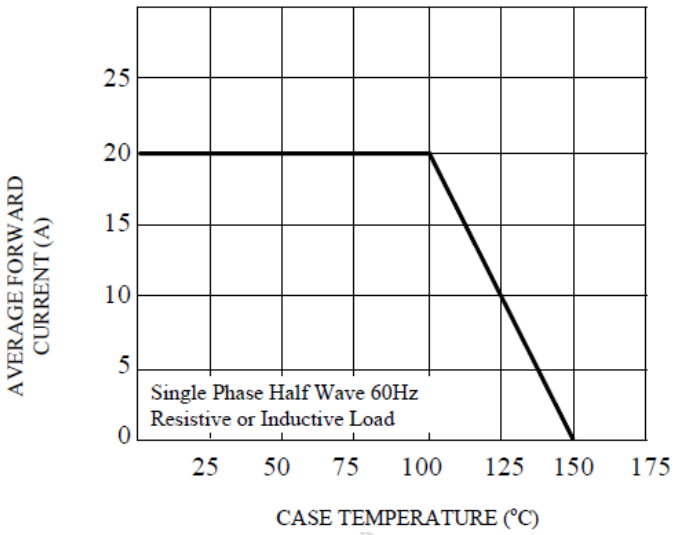


FIG. 3 -TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

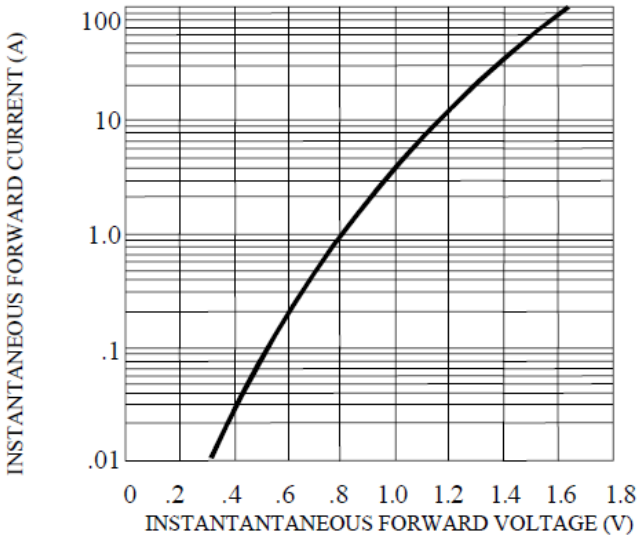


FIG. 4 -TYPICAL REVERSE CHARACTERISTICS

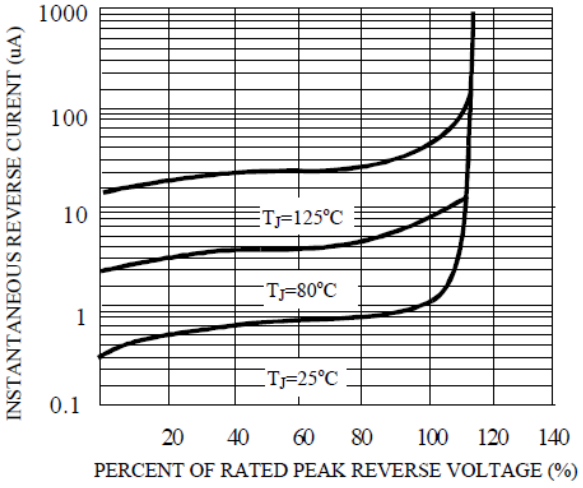


FIG. 5 -TYPICAL JUNCTION CAPACITANCE

