



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

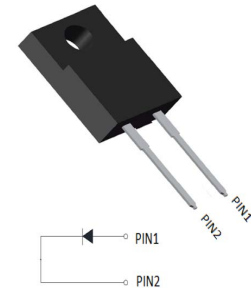
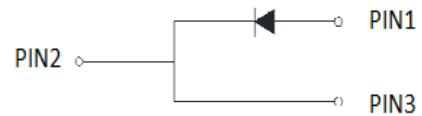
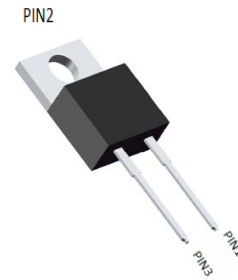
Typical applications are in switching power supplies, converters, freewheeling diodes, and reverse battery protection.

Mechanical Data

- **Package:** TO-220AC ITO-220AC
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°C Unless otherwise specified)

TYPE	V _{RSM} V	V _{RRM} V
MUR2020	200	200
MUR2020F	200	200



Symbol	Test Conditions	Maximum Ratings	Unit
I _{FAVM}	T _c =145°C; rectangular, d=0.5	20	A
I _{FSM}	T _{vj} =45°C; t _p =10ms (50Hz), sine	200	A
E _{AS}	T _{vj} =25°C; non-repetitive; I _{as} =3A; L=180uH	1.2	mJ
I _{AR}	V _A =1.5·V _R typ.; f=10kHz; repetitive	0.3	A
T _{vj}		-55...+175	°C
T _{vjm}		175	
T _{stg}		-55...+150	
P _{tot}	T _c =25°C	165	W
M _d	mounting torque	0.8...1.2	Nm
Weight	typical	6	g



■Electrical Characteristics

Symbol	Test Conditions	Characteristic Values		Unit
		typ.	max.	
I _R	T _{VJ} =25°C; V _R =V _{RRM}		250	uA
	T _{VJ} =150°C; V _R =V _{RRM}		1	mA
V _F	I _F =20A; T _{VJ} =150°C		0.91	V
	T _{VJ} =25°C		1.05	
R _{thJC} R _{thCH}		0.25	0.9	K/W
t _{rr}	I _F =1A; -di/dt=200A/us; V _R =30V; T _{VJ} =25°C	35		ns
I _{RM}	V _R =100V; I _F =50A; -dif/dt=100A/us; T _{VJ} =100°C		7	A

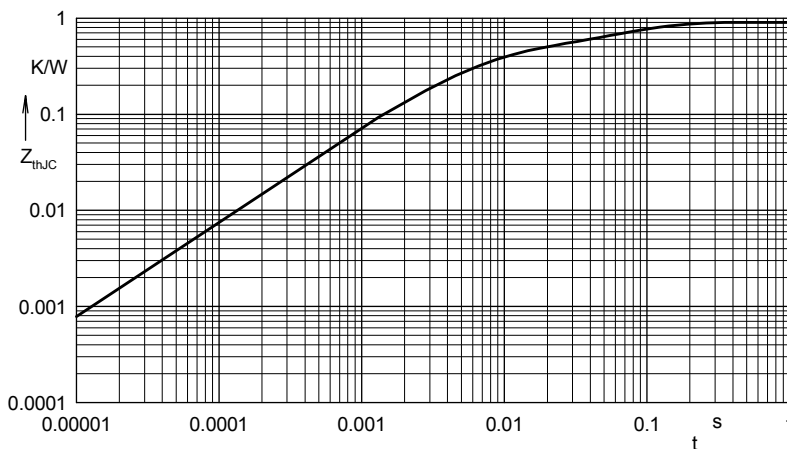
■Thermal Characteristics (T_a=25°C Unless otherwise specified)

PARAMETER		SYMBOL	UNIT	MUR2020/MUR2020F
Thermal Resistance	Between junction and case	R _{θJ-C}	°C/W	4.0
	Between junction and Air	R _{θJ-A}	°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
MUR2020/MUR2020F	Approximate 1.6	50	1000	5000	Tube

■Characteristics (Typical)



Constants for Z_{thJC} calculation:

i	R _{thi} (K/W)	t _i (s)
1	0.465	0.005
2	0.179	0.0003
3	0.256	0.04

Fig. 7 Transient thermal resistance junction to case

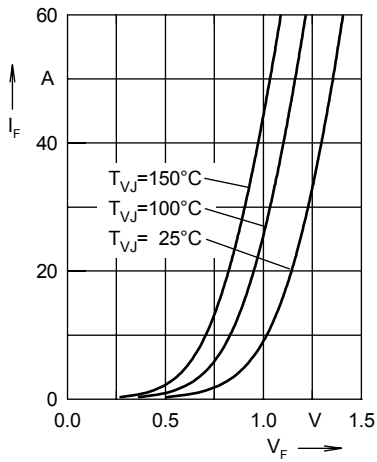


Fig. 1 Forward current I_F versus V_F

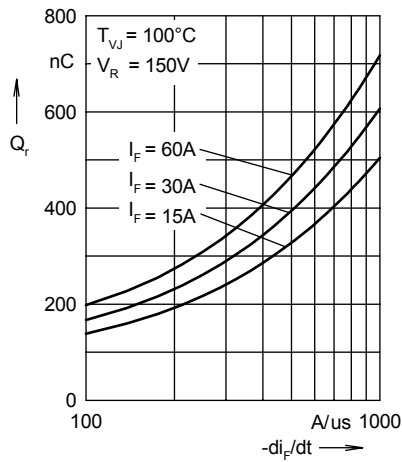


Fig. 2 Reverse recovery charge Q_r versus $-di_F/dt$

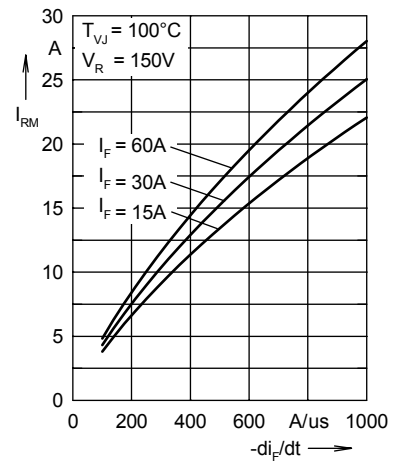


Fig. 3 Peak reverse current I_{RM} versus $-di_F/dt$

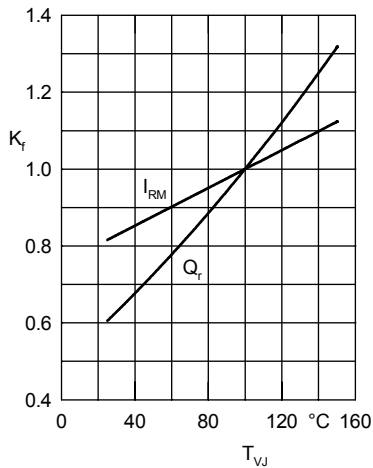


Fig. 4 Dynamic parameters Q_r , I_{RM} versus T_{VJ}

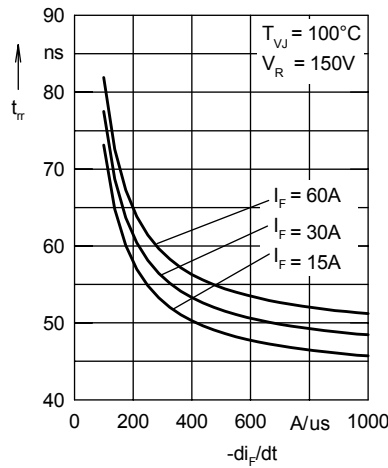


Fig. 5 Recovery time t_{tr} versus $-di_F/dt$

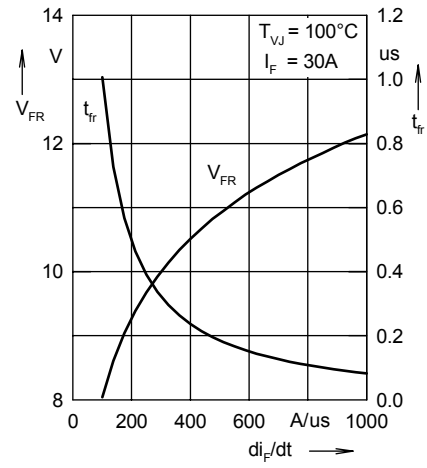
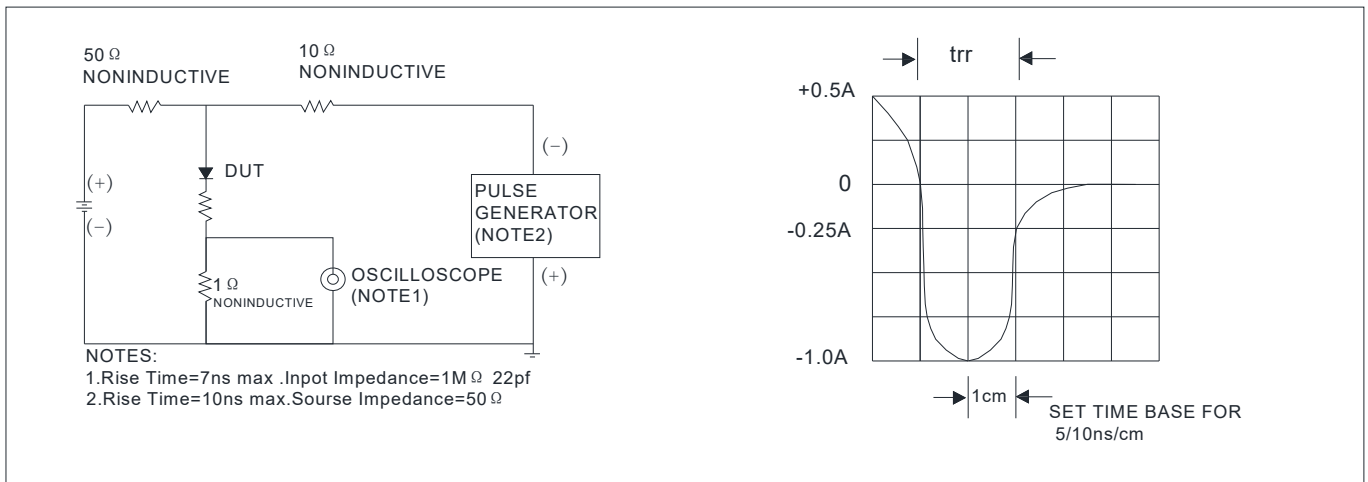


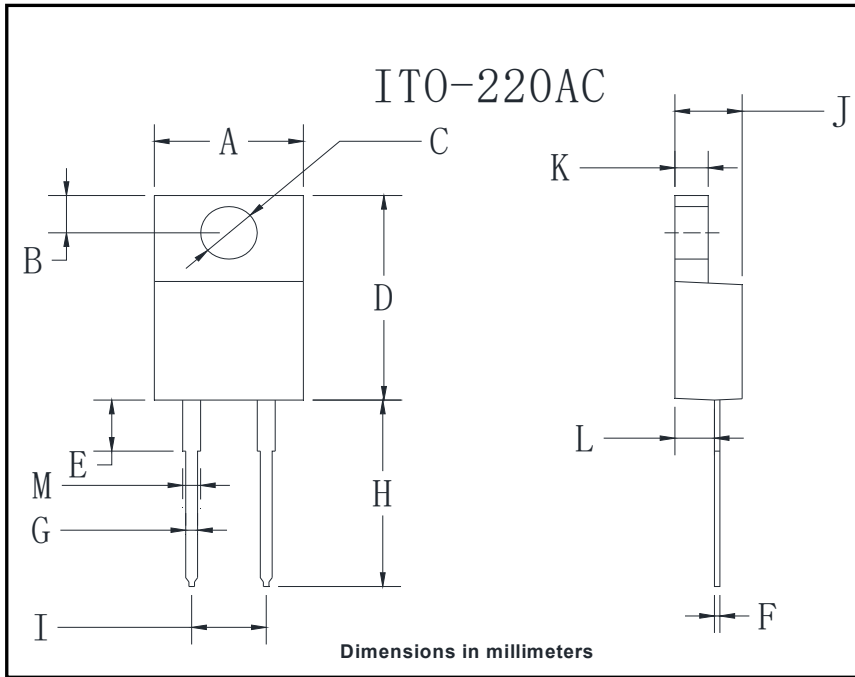
Fig. 6 Peak forward voltage V_{FR} and t_{tr} versus di_F/dt

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

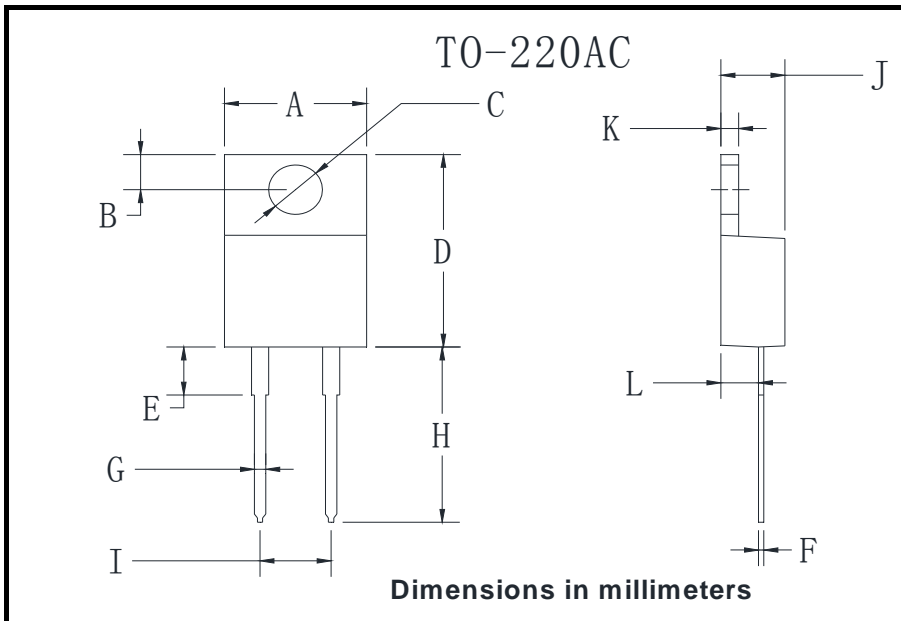




Outline Dimensions



ITO-220AC		
Dim	Min	Max
A	9.8	10.2
B	2.25	2.75
C	2.95	3.45
D	14.75	15.25
E	3.5	4.1
F	0.45	0.75
G	0.45	0.75
H	13.35	14.15
I	4.97	5.23
J	4.3	4.8
K	2.5	2.74
L	2.58	2.82
M	1.03	1.43



TO-220AC		
Dim	Min	Max
A	9.95	10.35
B	2.55	2.95
C	3.75	4.05
D	14.95	15.25
E	3.75	4.25
F	0.26	0.5
G	0.68	0.94
H	13.3	13.9
I	4.86	5.26
J	4.38	4.78
K	1.14	1.4
L	2.37	2.79

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