



MUR12120/MUR12120F

Ultra-Fast Recovery Diodes 12A FRED Pt



Features

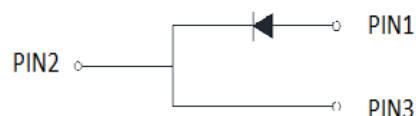
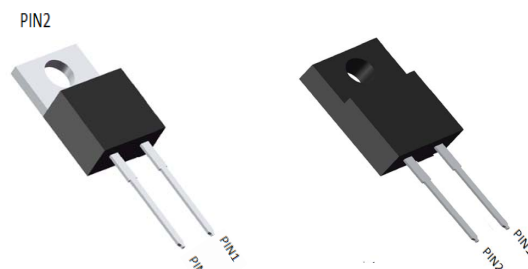
- Adopt FRED chip
- Low forward Voltage drop
- Fast reverse recovery time
- High frequency operation
- High purity, high temperature epoxy encapsulation for enhanced mechanical strength and moisture resistance
- Guard ring for enhanced ruggedness and long term reliability

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_j=25°C Unless otherwise specified)

PARAMETER	SYMBOL	UNIT	MUR12120F/MUR12120
Device marking code			MUR12120F/MUR12120
Repetitive Peak Reverse Voltage	V _{RRM}	V	1200
Average Rectified Output Current @60Hz sine wave, R-load, T _c (FIG.1)	I _O	A	12
Surge(Non-repetitive)Forward Current @60Hz half sine-wave, 1 cycle, T _j =25°C	I _{FSM}	A	100
Current Squared Time @1ms≤t≤8.3ms T _j =25°C,	I ² t	A ² s	45.6
Storage Temperature	T _{stg}	°C	-55 ~ +175
Junction Temperature	T _j	°C	-55 ~ +175
Junction capacitance @4V,1MHz	C _j	pF	55

■Electrical Characteristics

PARAMETER	SYMBOL	UNIT	TEST CONDITIONS	Min	Typ	Max
Instantaneous forward voltage drop per diode	V_{FM}	V	$I_{FM}=12.0A$ @ $T_J=25^{\circ}C$	-	2.40	3.20
			$I_{FM}=12.0A$ @ $T_J=125^{\circ}C$		1.90	2.50
DC reverse current at rated DC blocking voltage per diode	I_{RRM1}	μA	$V_{RM}=V_{RRM}$ $T_J=25^{\circ}C$	-	-	5.0
	I_{RRM2}		$V_{RM}=V_{RRM}$ $T_J=125^{\circ}C$	-	-	200
	I_{RRM3}		$V_{RM}=V_{RRM}$ $T_J=150^{\circ}C$	-	-	500
Reverse Recovery Time	T_{rr}	ns	$I_F=0.5A$ $I_{RM}=1A$ $I_{RR}=0.25A$ $T_J=25^{\circ}C$	-	37	60
			$T_J=25^{\circ}C$	-	220	-
			$T_J=125^{\circ}C$	-	324	-
Peak recovery current	I_{RRM}	A	$T_J=25^{\circ}C$	-	4	-
			$T_J=125^{\circ}C$	-	9	-
Reverse recovery charge	Q_{rr}	nC	$T_J=25^{\circ}C$	-	481	-
			$T_J=125^{\circ}C$	-	1508	-

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

PARAMETER		SYMBOL	UNIT	MUR12120F/MUR12120
Thermal Resistance	Between junction and case	$R_{\theta J-C}$	$^{\circ}C/W$	4.0
	Between junction and Air	$R_{\theta J-A}$	$^{\circ}C/W$	50

FIG1: I_o - T_c Curve

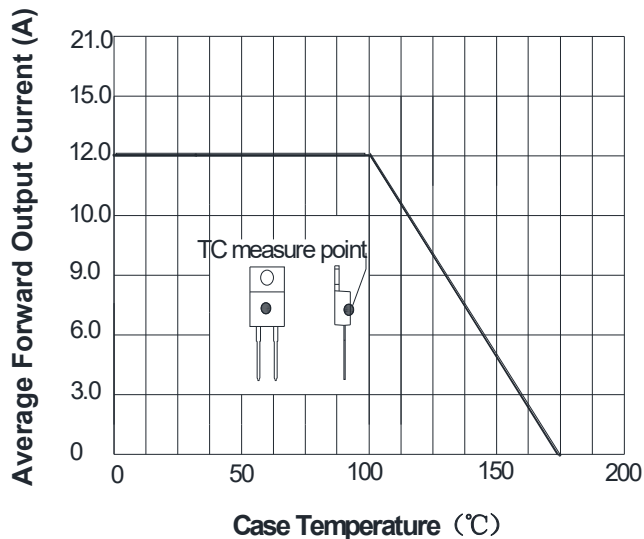


FIG2: Surge Forward Current Capability

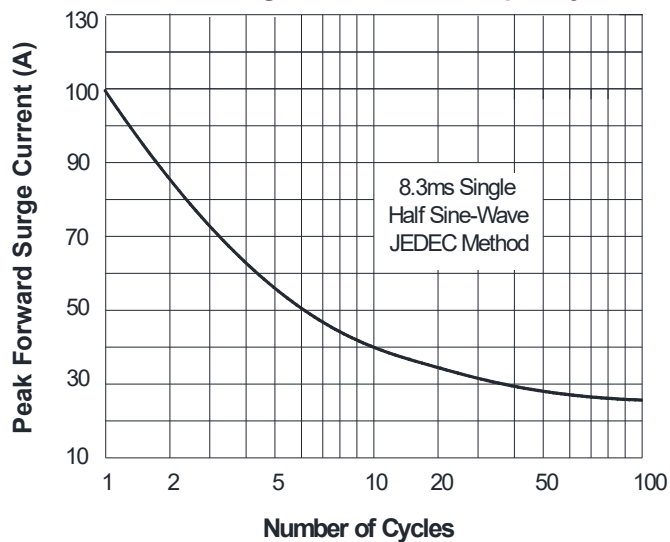


FIG3: Forward Voltage

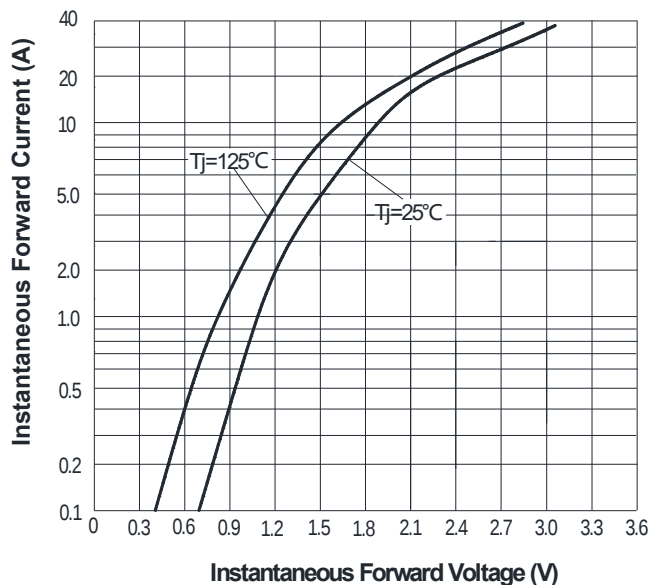
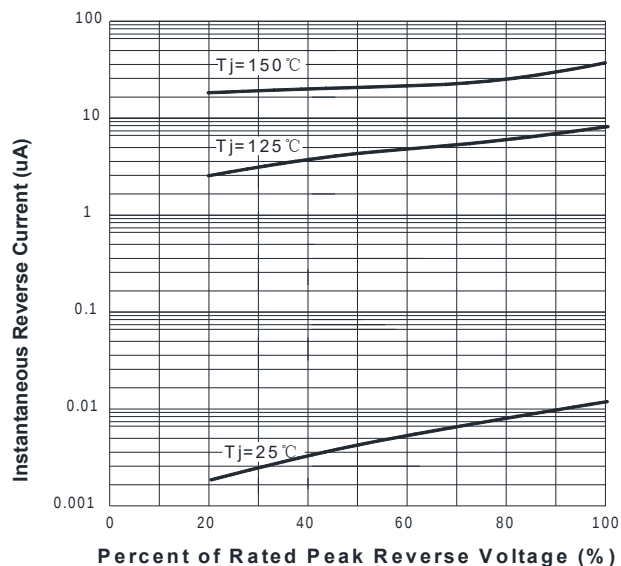
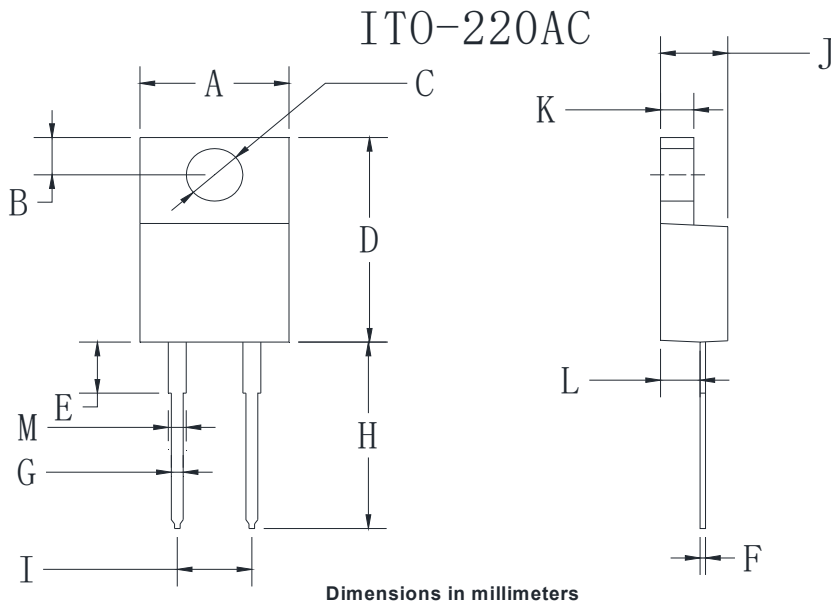


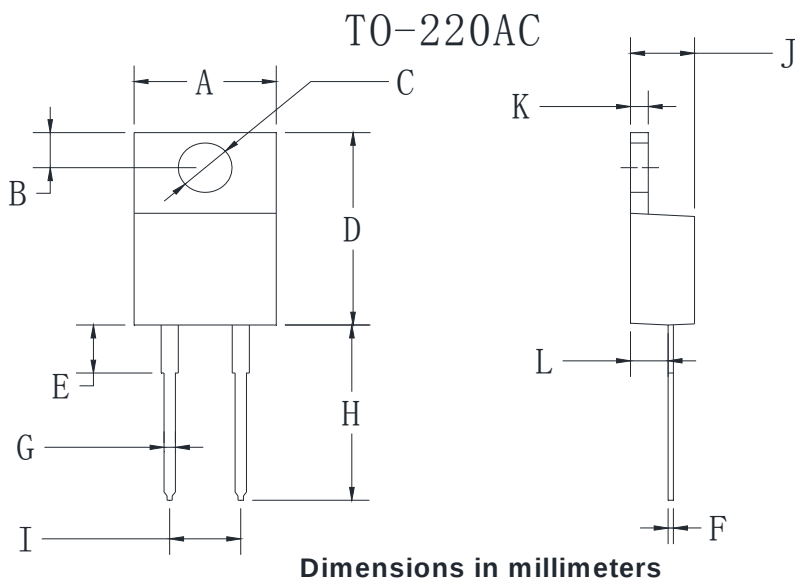
FIG.4: Instantaneous Reverse Characteristics



■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

■Ordering Information (Example)

PREFERRED P/N	UNIT WEIGHT(g)	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
MUR12120F/MUR12120	Approximate 1.6	50	1000	5000	Tube