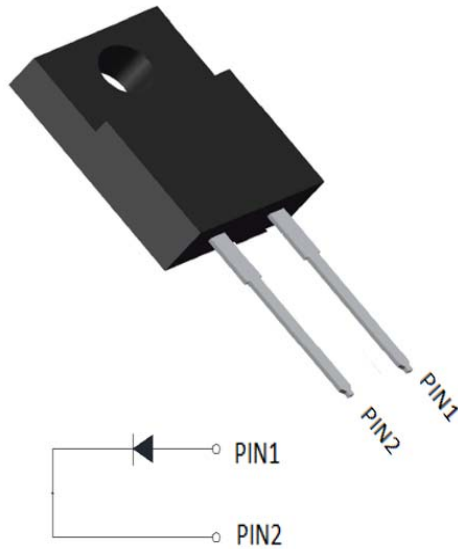


Ultra-Fast Recovery Diodes 20A FRED



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:** 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	MURL2060F
Device marking code			MURL2060F
Repetitive Peak Reverse Voltage	V _{RRM}	V	600
Average Rectified Output Current @60Hz sine wave, R-load, T _c (FIG.1)	I _O	A	20
Surge(Non-repetitive)Forward Current @60Hz half sine-wave, 1 cycle, T _j =25°C	I _{FSM}	A	180
Current Squared Time @1ms≤t≤8.3ms T _j =25°C,	I ² t	A ² s	134
Storage Temperature	T _{stg}	°C	-55 ~ +175
Junction Temperature	T _j	°C	-55 ~ +175
Junction capacitance @4V,1MHz	C _j	pF	94



MURL2060F

■Electrical Characteristics

PARAMETER	SYMBOL	UNIT	TEST CONDITIONS	Min	Typ	Max
Instantaneous forward voltage drop per diode	V_{FM}	V	$I_{FM}=20.0A$ @ $T_J=25^{\circ}C$	-	1.45	1.6
			$I_{FM}=20.0A$ @ $T_J=125^{\circ}C$	-	1.22	1.4
DC reverse current at rated DC blocking voltage per diode	I_{RRM1}	μA	$V_{RM}=V_{RRM}$ $T_J=25^{\circ}C$	-	-	5
	I_{RRM2}		$V_{RM}=V_{RRM}$ $T_J=125^{\circ}C$	-	20	100
Reverse Recovery Time	T_{rr}	ns	$I_F=0.5A$ $I_{RM}=1A$ $I_{RR}=0.25A$ $T_J=25^{\circ}C$	-	30	50
			$T_J=25^{\circ}C$	-	43.4	-
			$T_J=125^{\circ}C$	-	51.4	-
Peak recovery current	I_{RRM}	A	$T_J=25^{\circ}C$	-	10.3	-
			$T_J=125^{\circ}C$	-	17.0	-
Reverse recovery charge	Q_{rr}	nC	$T_J=25^{\circ}C$	-	263	-
			$T_J=125^{\circ}C$	-	663	-

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

PARAMETER		SYMBOL	UNIT	MURL2060F
Thermal Resistance	Between junction and case	$R_{\theta J-C}$	$^{\circ}C/W$	5
	Between junction and Air	$R_{\theta J-A}$	$^{\circ}C/W$	70

■Ordering Information (Example)

PREFERRED P/N	UNIT WEIGHT(g)	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
MURL2060F	Approximate 1.88	50	1000	5000	Tube

■Characteristics (Typical)

FIG1:Io -Tc Curve

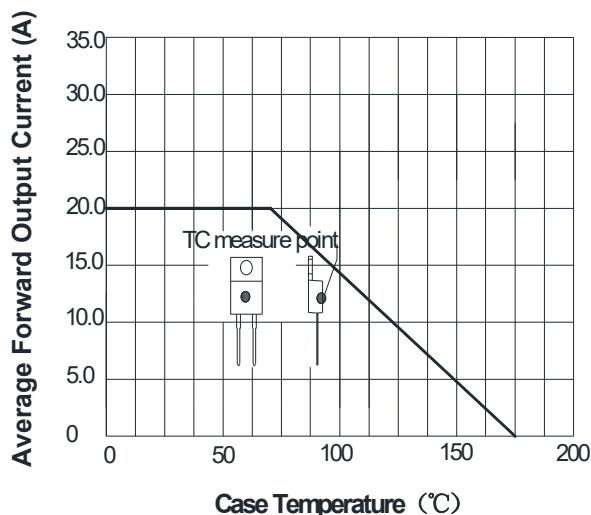


FIG2:Surge Forward Current Capability

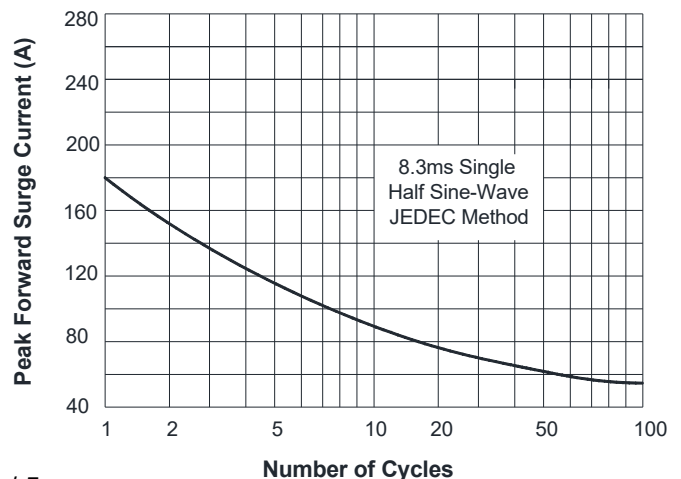




FIG3: Forward Voltage

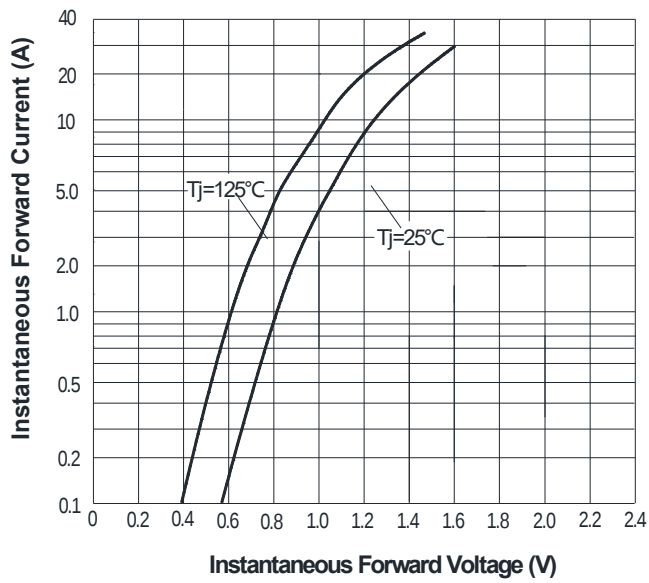
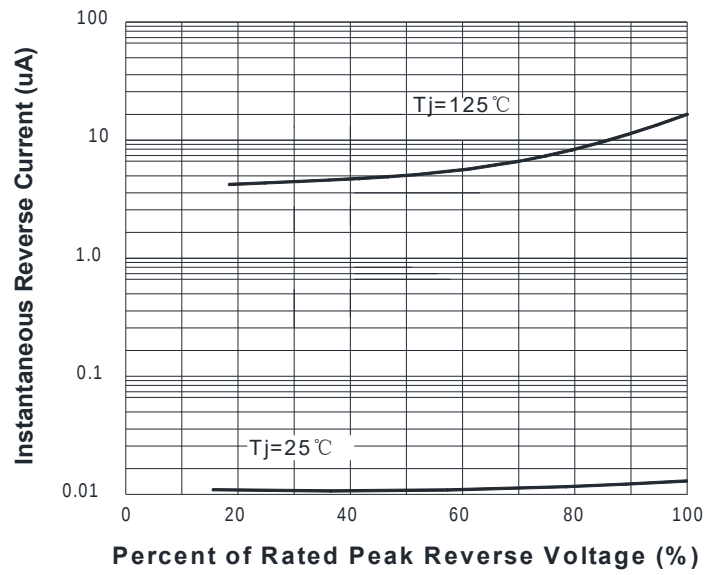
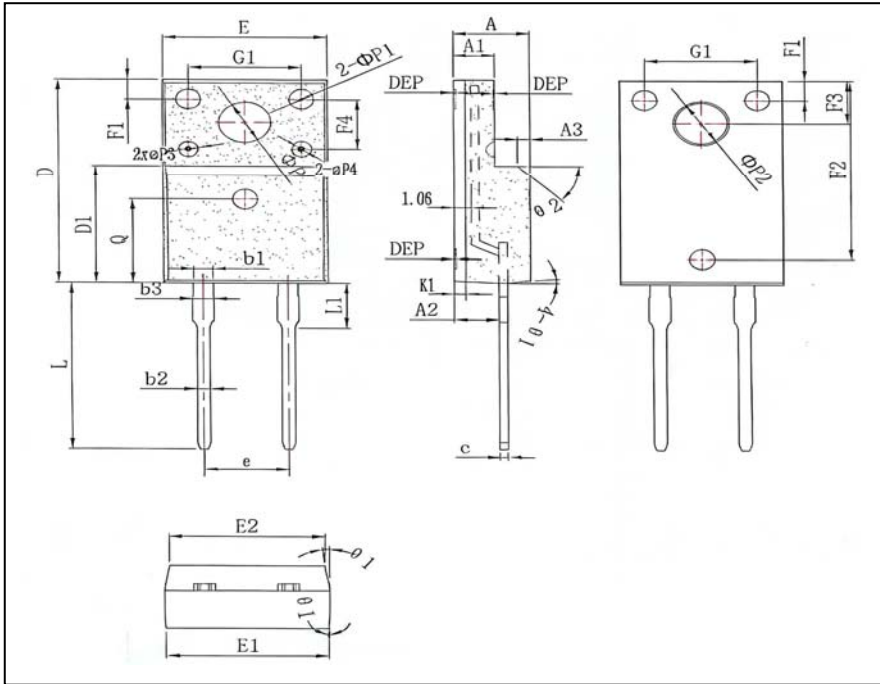


FIG.4: Instantaneous Reverse Characteristics



■Outline Dimensions



ITO-220AC(W5038)		
Dim	Min	Max
*A	4.50	4.90
*A1	2.34	2.74
*A2	2.66	2.86
A3	1.0REF	
b1	1.18	1.24
*b2	0.75	0.85
*b3	1.22	1.38
*C	0.45	0.55
*D	15.67	16.07
D1	9.04	9.20
*e	5.03	5.13
*E	10.00	10.30
E1	9.94	10.20
E2	9.40	9.60
F1	1.40	1.60
F2	13.80	14.00
*F3	3.20	3.40
F4	3.70	4.10
G1	6.90	7.10
K1	0.65	0.75
*L	12.78	13.18
*L1	3.40	3.60
Q	6.50REF	
* ΦP	3.08	3.28
$\Phi P1$	1.45	1.65
$\Phi P2$	3.30	3.50
$\Phi P3$	0.95	1.35
$\Phi P4$	0.25	0.35
$\theta 1$	3°	7°
$\theta 2$	42°	48°
*DEP	0.05	0.15



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