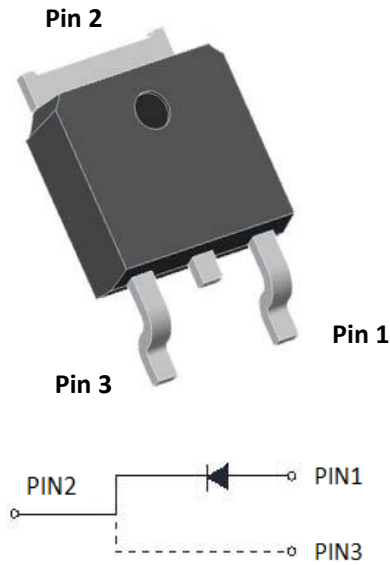


Ultra-Fast Recovery Diodes 8A FRED



Features

- High frequency operation
- High surge forward current capability
- 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-252
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 ($T_j=25^\circ\text{C}$ Unless otherwise specified)

PARAMETER	SYMBOL	UNIT	MUR8120D-F1-W5038HF
Device marking code			MUR8120D
Repetitive Peak Reverse Voltage	V_{RRM}	V	1200
Average Rectified Output Current @60Hz sine wave, R-load, T_c (FIG.1)	I_o	A	8
Surge(Non-repetitive) Forward Current @60Hz half sine-wave, 1 cycle, $T_j=25^\circ\text{C}$	I_{FSM}	A	60
Current Squared Time @ $1\text{ms} \leq t \leq 8.3\text{ms}$ $T_j=25^\circ\text{C}$	I^2t	A^2s	14.94
Storage Temperature	T_{stg}	$^\circ\text{C}$	-55 ~ +150
Junction Temperature	T_j	$^\circ\text{C}$	-55 ~ +150
Junction capacitance @4V,1MHz	C_j	pF	26



MUR8120D-F1-W5038HF

■Electrical Characteristics

PARAMETER	SYMBOL	UNIT	TEST CONDITIONS	Min	Typ	Max	
Instantaneous forward voltage drop per diode	V_{FM}	V	$I_{FM}=8.0A$ @ $T_j=25^\circ C$	-	2.00	2.50	
			$I_{FM}=8.0A$ @ $T_j=125^\circ C$	-	1.70	2.10	
DC reverse current at rated DC blocking voltage per diode	I_{RRM1}	uA	$V_{RM}=V_{RRM}$ $T_j=25^\circ C$	-	-	5.0	
	I_{RRM2}		$V_{RM}=V_{RRM}$ $T_j=125^\circ C$	-	-	200	
Reverse Recovery Time	T_{rr}	ns	$I_F=0.5A$ $I_{RM}=1A$ $I_{RR}=0.25A$ $T_j=25^\circ C$	-	44	75	
			$T_j=25^\circ C$	-	249	-	
			$T_j=125^\circ C$	-	438	-	
Peak recovery current	I_{RRM}	A	$T_j=25^\circ C$	$I_F=8A$ $di/dt=-200A/us$ $V_{RM}=400V$	-	5.18	-
			$T_j=125^\circ C$		-	7.32	-
Reverse recovery charge	Q_{rr}	nC	$T_j=25^\circ C$		-	645	-
			$T_j=125^\circ C$		-	1555	-

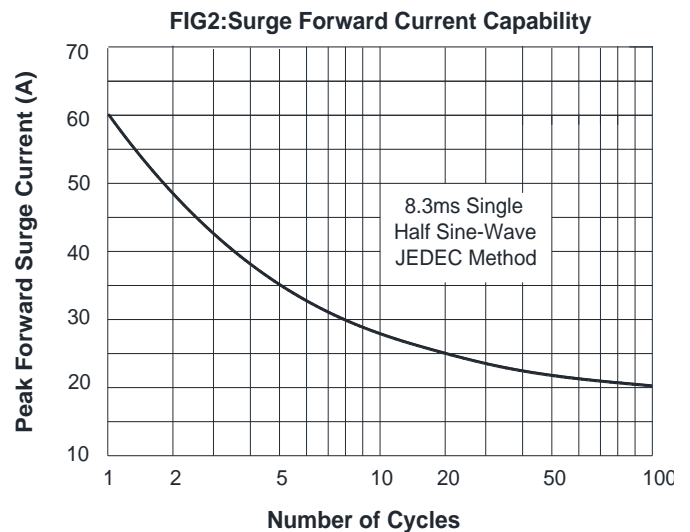
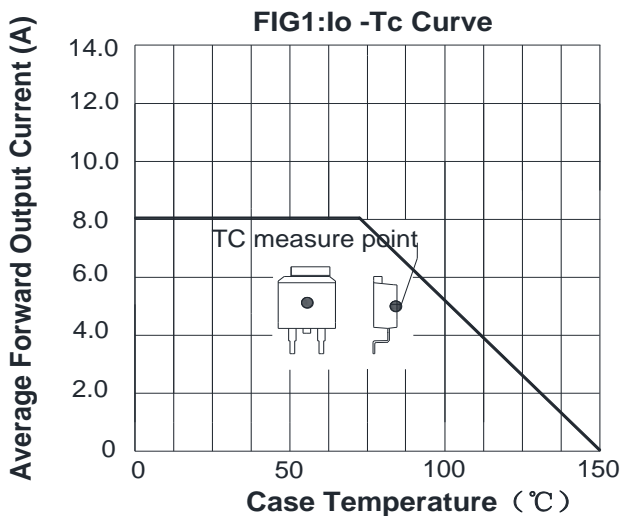
■Thermal Characteristics ($T_j=25^\circ C$ Unless otherwise specified)

PARAMETER		SYMBOL	UNIT	MUR8120D-F1-W5038HF
Thermal Resistance	Between junction and case	$R_{\theta J-C}$	$^\circ C/W$	5

■Ordering Information (Example)

PREFERRED P/N	UNIT WEIGHT(g)	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
MUR8120D-F1-W5038HF	Approximate 0.31	2500	2500	25000	Reel

■Characteristics (Typical)





MUR8120D-F1-W5038HF

FIG3: Forward Voltage

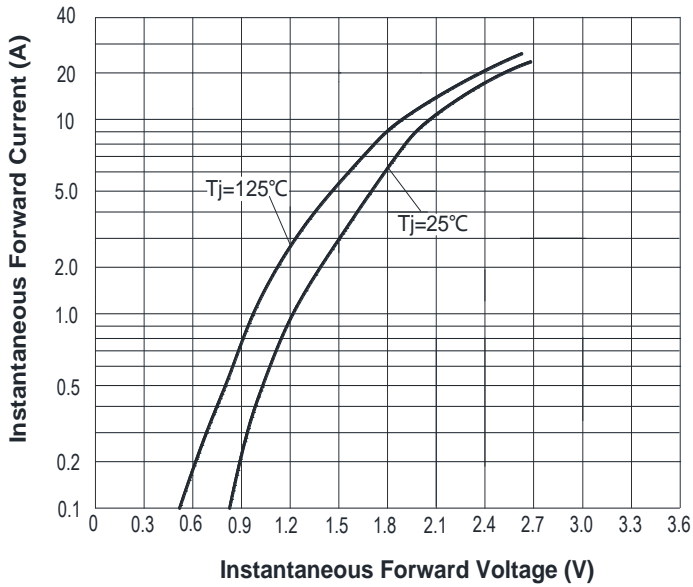
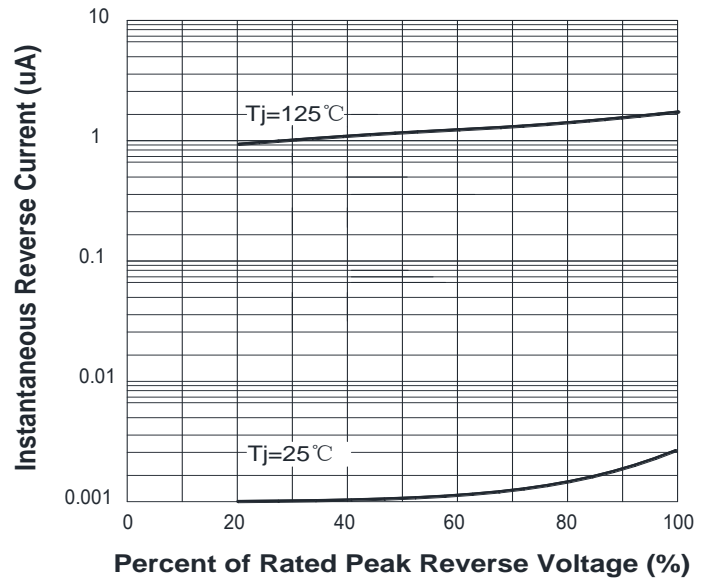
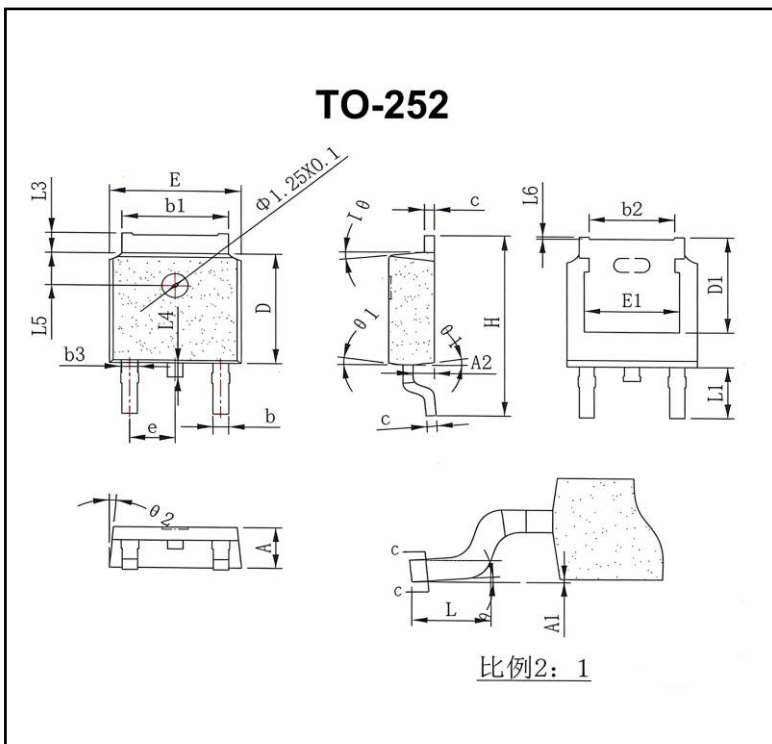


FIG.4: Instantaneous Reverse Characteristics



Outline Dimensions

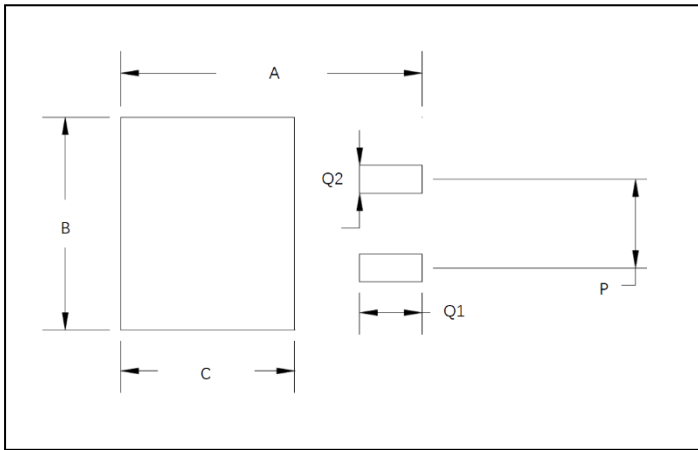


TO-252		
Dim	Min	Max
A	2.20	2.38
A1	0.00	0.15
A2	0.90	1.10
b	0.72	0.85
b1	5.23	5.46
b2	4.05	4.35
b3	0.78	0.95
c	0.47	0.55
D	6.00	6.20
D1	5.40REF	
E	6.50	6.70
E1	4.70	4.92
e	2.286BSC	
H	9.90	10.20
L	1.40	1.70
L1	2.90REF	
L3	0.90	1.20
L4	0.75	0.95
L5	1.70	1.90
L6	0.00	0.12
θ	0°	5°
$\theta 1$	5°	9°
$\theta 2$	5°	9°



MUR8120D-F1-W5038HF

■Suggested Pad Layout



Dim	Millimeters
A	11.4
B	6.74
C	6.23
P	4.56
Q1	2.28
Q2	1.52



MUR8120D-F1-W5038HF

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