Features

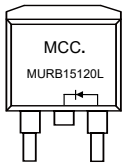
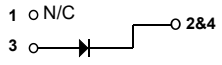
- Halogen Free. "Green" Device (Note 1)
- Lead Free Finish/RoHS Compliant(Note 2) ("P" Suffix Designates Compliant. See Ordering Information)
- Epoxy Meets UL 94 V-0 Flammability Rating
- Low Switching Losses and High Efficiency
- Low Reverse Leakage
- Ultrafast Recovery Time
- Planar Structure Die and Soft Recovery Characteristics

15 Amp FRED Rectifiers 1200 Volts

Maximum Ratings @ 25°C (Unless Otherwise Specified)

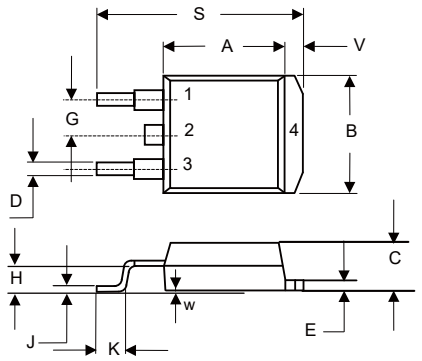
Parameter	Symbol	Value	Unit
Peak Repetitive Reverse Voltage	V_{RRM}	1200	V
Working Peak Reverse Voltage	V_{RWM}		
DC Blocking Voltage	V_R		
RMS Reverse Voltage	V_{RMS}	840	V
Average Rectified Forward Current	$I_{F(AV)}$	15	A
Non−Repetitive Peak Surge Current @8.3ms Half Sine Wave	I_{FSM}	110	A
Current Squared Time @ 1ms≤t≤8.3ms	I^2t	50	A^2s

Internal Structure

Pin	Description	Simplified Outline	Graphic Symbol
1	N/C		
2&4	Cathode		
3	Anode		

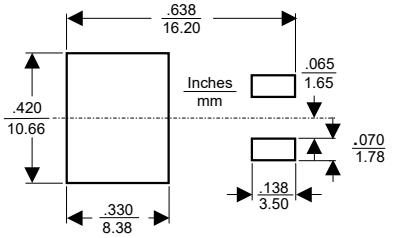
Note :
1. Halogen free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
2. High Temperature Solder Exemption Applied, See EU Directive Annex 7a.

D^2-PAK



DIMENSIONS					
DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	0.331	0.370	8.40	9.40	
B	0.378	0.417	9.60	10.60	
C	0.165	0.189	4.20	4.80	
D	0.027	0.037	0.68	0.94	
E	0.045	0.055	1.14	1.40	
G	0.010		2.54		TYP.
H	0.096	0.134	2.43	3.40	
J	0.011	0.025	0.28	0.64	
K	0.071	0.131	1.80	3.32	
S	0.575	0.625	14.60	15.87	
V	0.042	0.058	1.07	1.47	
W	0.000	0.010	0.00	0.25	

Suggested Solder Pad Layout



Thermal characteristics

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
T_J	Operating Junction Temperature Range		-55		150	°C
T_{stg}	Storage Temperature Range		-55		150	°C
$Rth_{(J-C)}$	Thermal Resistance from Junction to Case			2		°C/W
$Rth_{(J-A)}$	Thermal Resistance from Junction to Ambient			50		°C/W

Electrical Characteristics @ 25°C Unless Otherwise Specified

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Forward Voltage	V_F	I_F=15A;T_J=25°C		2.40	3.20	V
		I_F=15A;T_J=125°C		1.90	2.50	
Reverse Current	I_R	V_R=1200V;T_J=25°C			5	uA
		V_R=1200V;T_J=125°C			200	
Junction Capacitance	C_J	V_R=4V;f=1MHz;T_J=25°C		55		pF

Dynamic Recovery Characteristics @ 25°C Unless Otherwise Specified

Parameter	Symbol	Test Conditions		Min	Typ	Max	Unit
Reverse Recovery Time	t_{rr}	I_F=0.5A; I_R=1.0A;I_{RR}=0.25A;T_J=25°C			37	60	ns
		I_F=15A d_{iF}/d_t=-200A/μs V_{RM}=400V	T_J=25°C		220		
			T_J=125°C		324		
Peak Recovery Current	I_{RRM}		T_J=25°C		4.4		A
			T_J=125°C		9.1		
Reverse Recovery Charge	Q_{rr}		T_J=25°C		483		nC
			T_J=125°C		1483		

Curve Characteristics

Fig. 1 - Forward Current Derating Curve

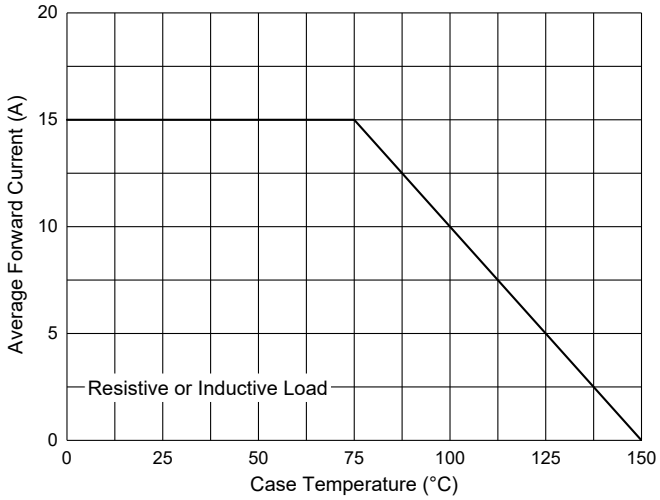


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current

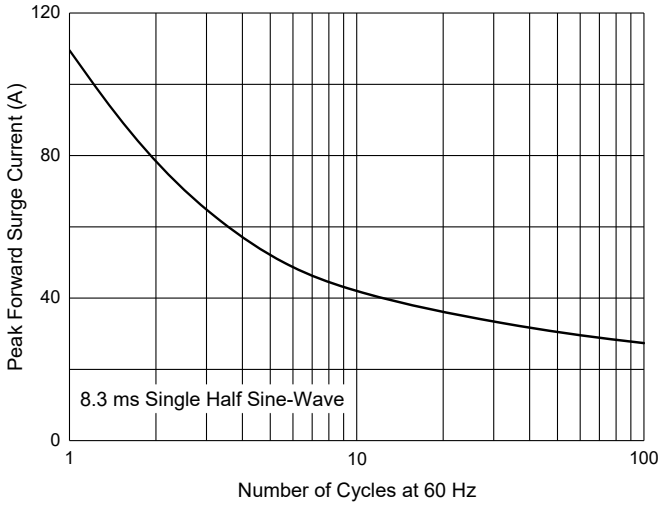


Fig. 3 - Typical Forward Characteristics

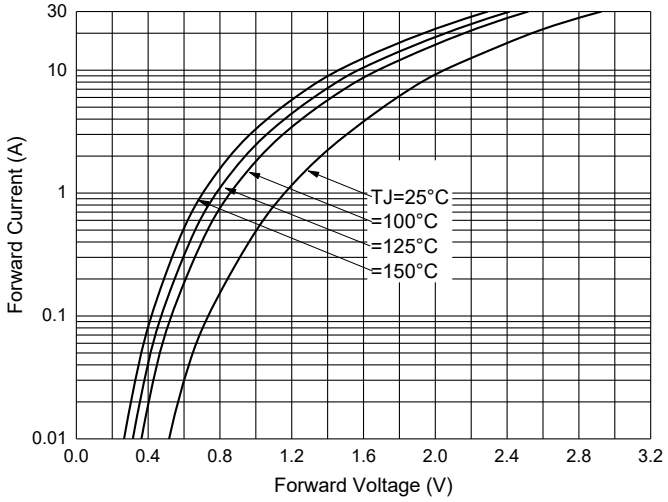


Fig. 4 - Typical Reverse Leakage Characteristics

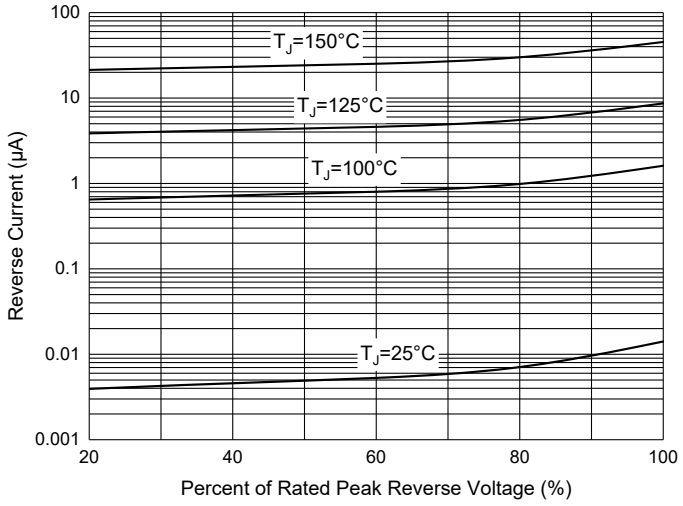


Fig. 5 - Typical Capacitance Characteristics

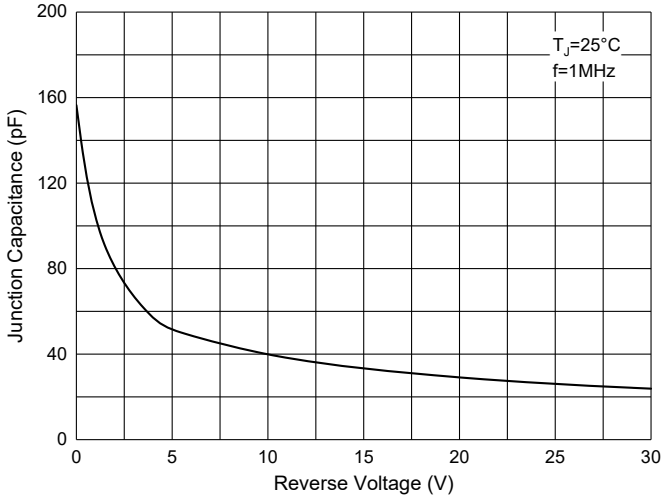
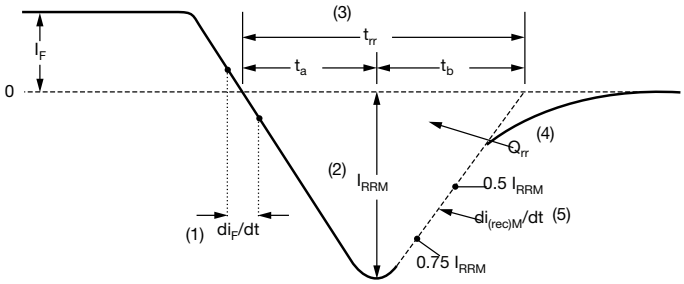


Fig. 6 - Reverse Recovery Waveform and Definitions



(1) di_F/dt - rate of change of current through zero crossing

(2) I_{RRM} - peak reverse recovery current

(3) t_{rr} - reverse recovery time measured from zero crossing point of negative going I_F to point where a line passing through 0.75 I_{RRM} and 0.50 I_{RRM} extrapolated to zero current.

(4) Q_{rr} - area under curve defined by t_{rr} and I_{RRM}

$$Q_{rr} = \frac{t_{rr} \times I_{RRM}}{2}$$

(5) $di_{(rec)M}/dt$ - peak rate of change of current during t_b portion of t_{rr}

Ordering Information

Device	Packing
Part Number-TP	Tape&Reel: 800pcs/Reel
Part Number-BP	Bulk:50pcs/Tube,1Kpcs/Box,5Kpcs/Carton

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