Features

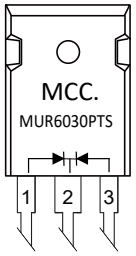
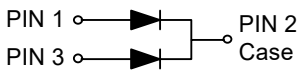
- Halogen Free Available Upon Request By Adding Suffix "-HF"
- Lead Free Finish/RoHS Compliant(Note 1) ("P" Suffix Designates Compliant. See Ordering Information)
- Epoxy Meets UL 94 V-0 Flammability Rating
- Low Switching Losses and High Efficiency
- Low Reverse Leakage
- Ultrafast Recovery Time
- Planar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

60 Amp FRED Rectifiers 300 Volts

Maximum Ratings @ 25°C (Unless Otherwise Specified)

Parameter	Symbol	Value	Unit
Peak Repetitive Reverse Voltage	V_{RRM}	300	V
Working Peak Reverse Voltage	V_{RWM}		
DC Blocking Voltage	V_R		
RMS Reverse Voltage	V_{RMS}	210	V
Average Rectified Forward Current Per Diode Per Device	$I_{F(AV)}$	30 60	A
Non−Repetitive Peak Surge Current @8.3ms Half Sine Wave(Per Diode)	I_{FSM}	350	A
Current Squared Time @ 1ms≤t≤8.3ms(Per Diode)	I^2t	508	A^2s

Internal Structure

Simplified Outline	Graphic Symbol
	

Note :1. High Temperature Solder Exemption Applied, See EU Directive Annex 7a.

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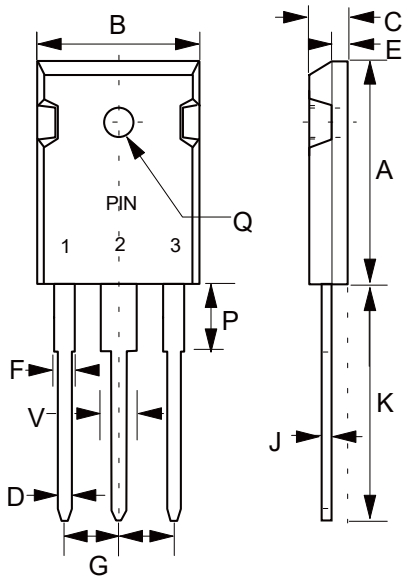


DIMENSIONS					
DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	0.787	0.866	20.00	22.00	
B	0.598	0.638	15.20	16.20	
C	0.185	0.208	4.70	5.30	
D	0.035	0.059	0.90	1.50	
E	0.059	0.094	1.50	2.40	
F	0.067	0.091	1.70	2.30	
J	0.019	0.031	0.48	0.80	
K	0.748	0.833	19.00	21.15	
P	0.122	0.189	3.10	4.80	
Q	0.118	0.150	3.00	3.80	Φ
V	0.106	0.134	2.70	3.40	
G	0.197	0.224	5.00	5.70	

Thermal characteristics

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
T_J	Operating Junction Temperature Range		-55		175	°C
T_{stg}	Storage Temperature Range		-55		175	°C
$Rth_{(J-C)}$	Thermal Resistance from Junction to Case	Per Diode		0.6		°C/W
$Rth_{(J-A)}$	Thermal Resistance from Junction to Ambient			38		°C/W

Electrical Characteristics @ 25°C Unless Otherwise Specified(Per Diode)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Forward Voltage	V_F	I_F=30A;T_J=25°C			1.40	V
		I_F=30A;T_J=125°C			1.20	
Reverse Current	I_R	V_R=300V;T_J=25°C			10	μA
		V_R=300V;T_J=125°C			200	
Junction Capacitance	C_J	V_R=4V;f=1MHz;T_J=25°C		235		pF

Dynamic Recovery Characteristics @ 25°C Unless Otherwise Specified(Per Diode)

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			29	40	ns
		I_F=1A; di/dt=-50A/μs; V_R=30V; T_J=25°C			40		
		I_F=30A di/dt=-200A/μs V_R=200 V	T_J=25°C		39		
			T_J=125°C		62		
Peak Recovery Current	I_{RRM}		T_J=25°C		2.7		A
			T_J=125°C		9.0		
Reverse Recovery Charge	Q_{rr}		T_J=25°C		52		nC
			T_J=125°C		275		

Curve Characteristics

Fig. 1 - Forward Current Derating Curve

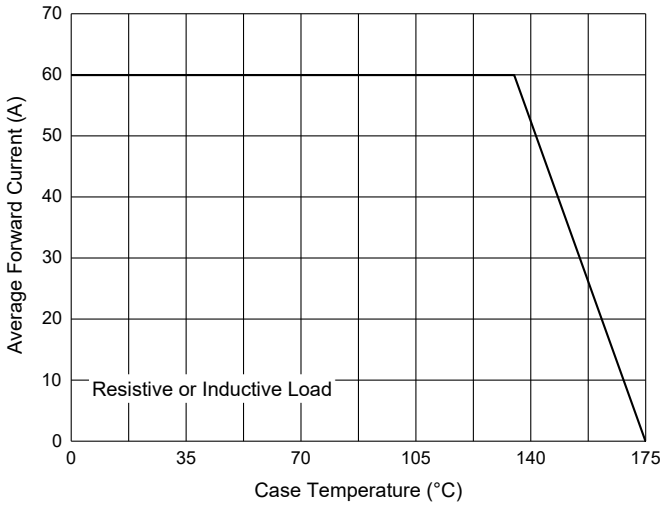


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current

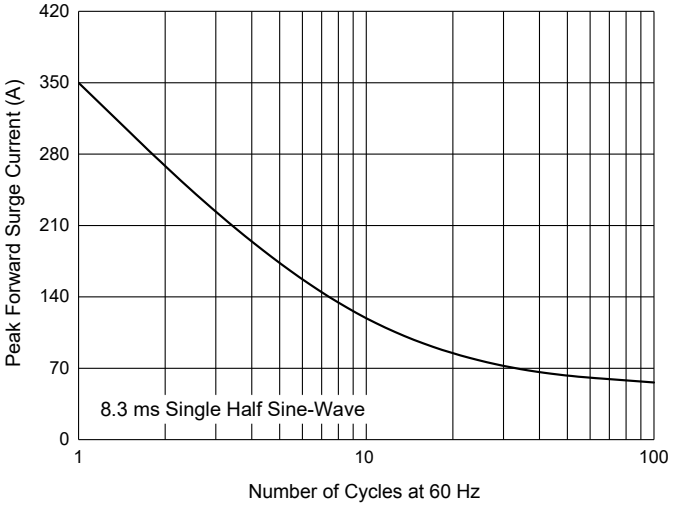


Fig. 3 - Typical Forward Characteristics

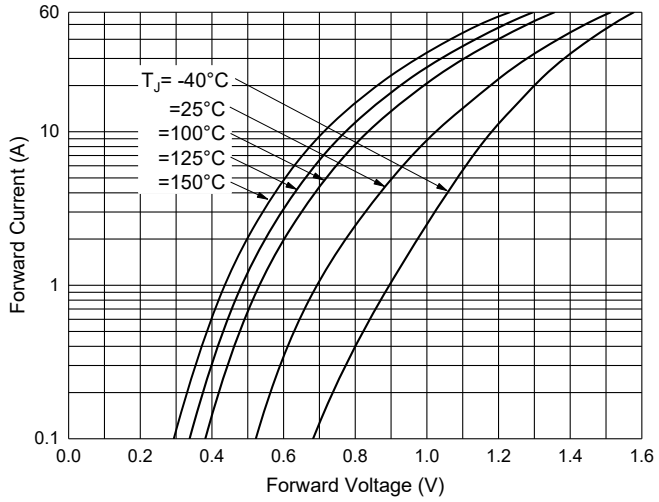


Fig. 4 - Typical Reverse Leakage Characteristics

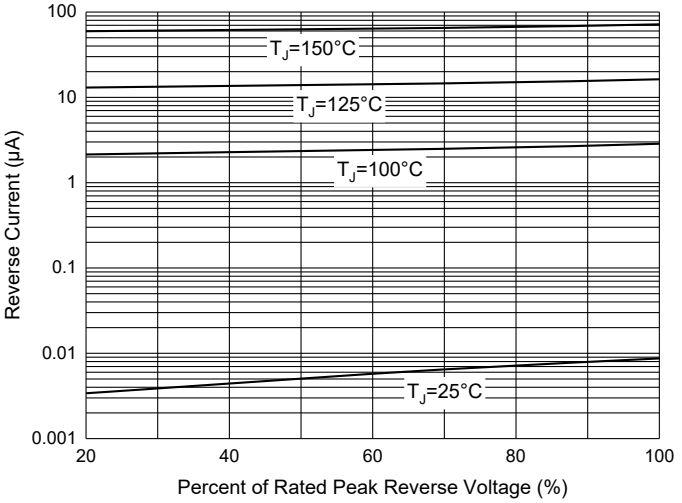


Fig. 5 - Typical Capacitance Characteristics

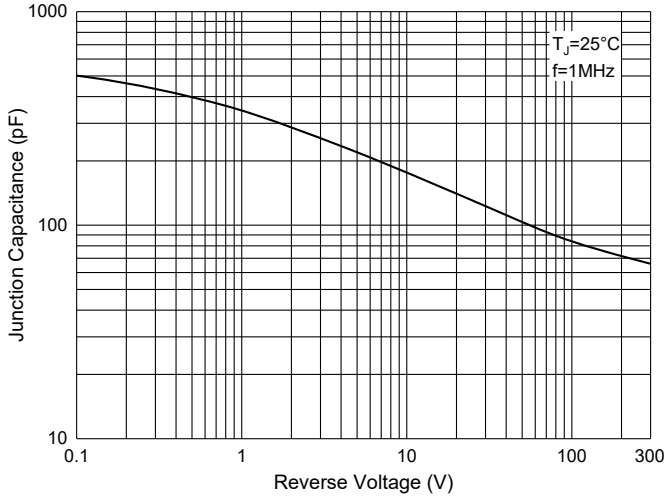
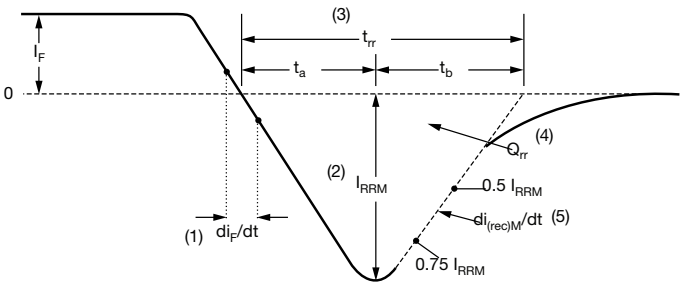


Fig. 6 - Reverse Recovery Waveform and Definitions



(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-BP	Bulk:30pcs/Tube,360pcs/Box,1.8Kpcs/Carton

Note : Adding "-HF" Suffix For Halogen Free, eg. Part Number-BP-HF