

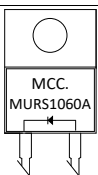
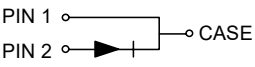
## Features

- 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

## Maximum Ratings @ 25°C (Unless Otherwise Specified)

Parameter	Symbol	Value	Unit
Peak Repetitive Reverse Voltage	$V_{RRM}$	600	V
Working Peak Reverse Voltage	$V_{RWM}$		
DC Blocking Voltage	$V_R$		
RMS Reverse Voltage	$V_{RMS}$	420	V
Average Rectified Forward Current	$I_{F(AV)}$	10	A
Non-Repetitive Peak Surge Current @8.3ms Half Sine Wave	$I_{FSM}$	120	A
Current Squared Time @ 1ms≤t≤8.3ms	$I^2t$	59.76	A <sup>2</sup> s

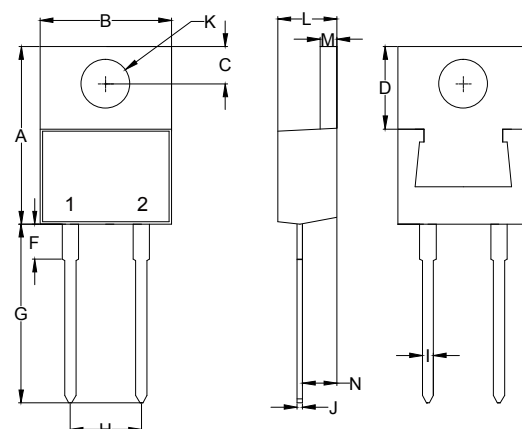
## Internal Structure

Pin	Description	Simplified Outline	Graphic Symbol
1	Cathode		
2	Anode		

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

# 10 Amp FRED Rectifiers 600 Volts

## TO-220AC



DIM	DIMENSIONS				NOTE
	INCHES		MM		
	MIN	MAX	MIN	MAX	
A	0.560	0.625	14.22	15.88	
B	0.380	0.420	9.65	10.67	
C	0.100	0.135	2.54	3.43	
D	0.230	0.270	5.84	6.86	
F	-----	0.250	-----	6.35	
G	0.500	0.580	12.70	14.73	
H	0.190	0.210	4.83	5.33	
I	0.020	0.045	0.51	1.14	
J	0.012	0.025	0.30	0.64	
K	0.139	0.161	3.53	4.09	Φ
L	0.140	0.190	3.56	4.83	
M	0.045	0.055	1.14	1.40	
N	0.080	0.115	2.03	2.92	

## 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
$R_{th(J-C)}$	Thermal Resistance from Junction to Case			2		°C/W

## Electrical Characteristics @ 25°C Unless Otherwise Specified

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Forward Voltage	$V_F$	$I_F=10A; T_J=25^\circ C$		1.40	1.60	V
		$I_F=10A; T_J=150^\circ C$		1.18	1.30	
Reverse Current	$I_R$	$V_R=600V; T_J=25^\circ C$			5	uA
		$V_R=600V; T_J=150^\circ C$			200	
Junction Capacitance	$C_J$	$V_R=4V; f=1MHz; T_J=25^\circ C$		45		pF

## Dynamic Recovery Characteristics @ 25°C Unless Otherwise Specified

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit	
Reverse Recovery Time	$t_{rr}$	$I_F=0.5A; I_R=1.0A; I_{RR}=0.25A; T_J=25^\circ C$		20	35	ns	
			$T_J=25^\circ C$		102		
			$T_J=150^\circ C$		152		
Peak Recovery Current	$I_{RRM}$	$I_F=10A$ $d_{IF}/d_t=-200A/\mu s$ $V_{RM}=400V$	$T_J=25^\circ C$		3.52	A	
			$T_J=150^\circ C$		8.18		
Reverse Recovery Charge	$Q_{rr}$		$T_J=25^\circ C$		180	nC	
			$T_J=150^\circ C$		623		

**Curve Characteristics**

Fig. 1 - Forward Current Derating Curve

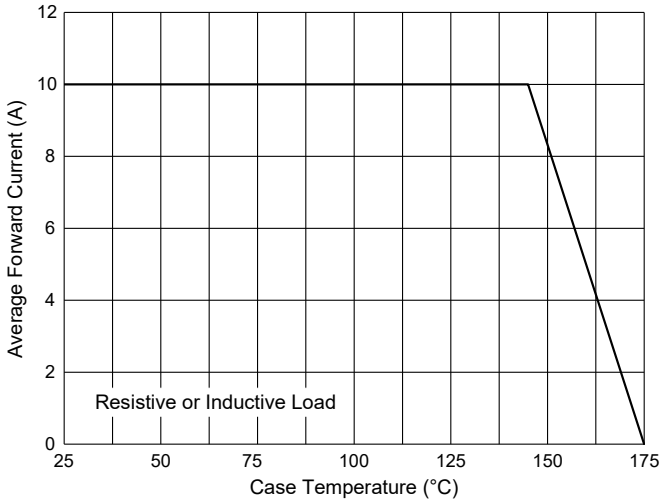


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current

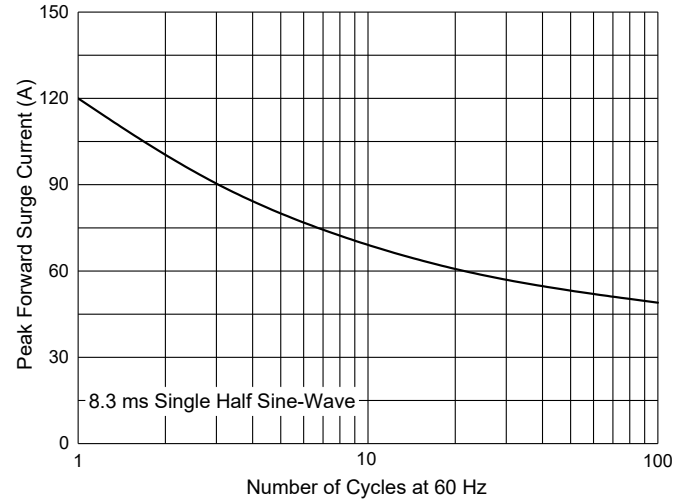


Fig. 3 - Typical Forward Characteristics

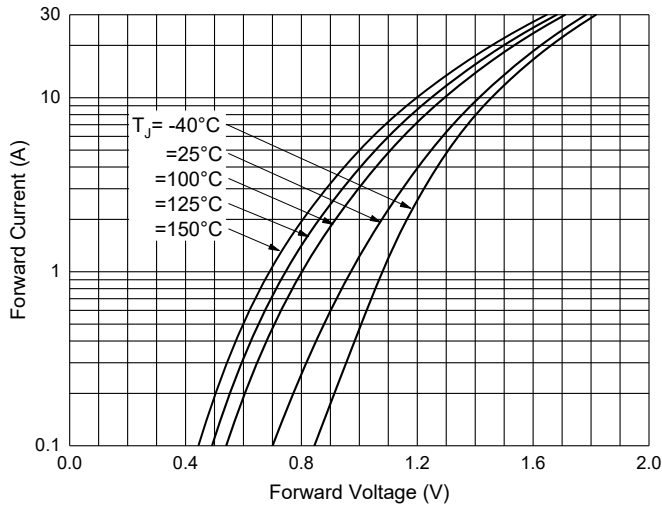


Fig. 4 - Typical Reverse Leakage Characteristics

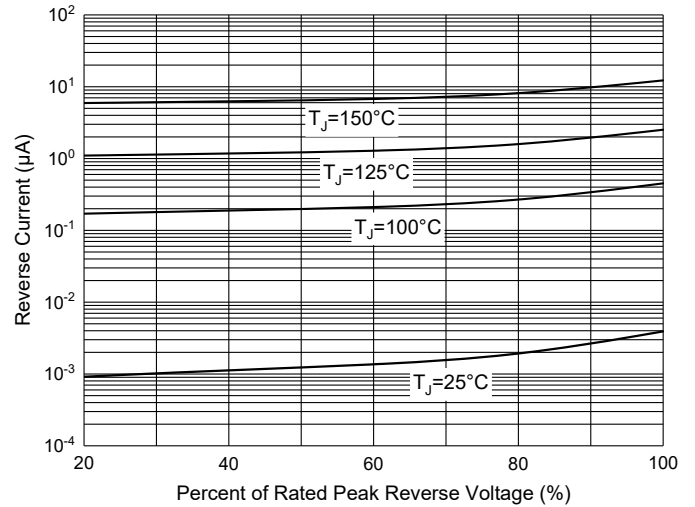


Fig. 5 - Typical Capacitance Characteristics

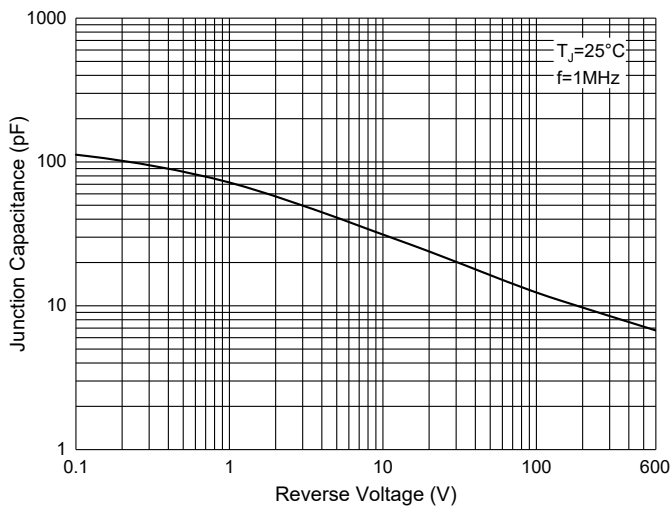
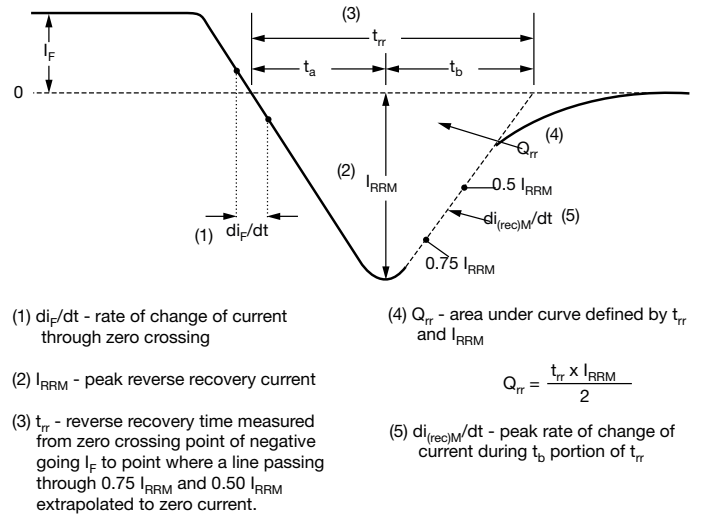


Fig. 6 - Reverse Recovery Waveform and Definitions



## Ordering Information

Device	Packing
Part Number-BP	Bulk:50pcs/Tube,1Kpcs/Box,5Kpcs/Carton

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

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