

## Features

- Halogen Free. "Green" Device (Note1)
- Lead Free Finish/RoHS Compliant (Note2) ("P" Suffix Designates Compliant. See Ordering Information)
- Epoxy Meets UL 94 V-0 Flammability Rating
- Moisture Sensitivity Level 1
- Low Switching Losses and High Efficiency
- Low Reverse Leakage
- Ultrafast Recovery Time
- Planar Structure Die and Soft Recovery Characteristics

## Maximum Ratings

- Operating Junction Temperature Range: -55°C to +175°C
- Storage Temperature Range: -55°C to +175°C
- Maximum Thermal Resistance: 2°C/W Junction to Case

MCC Part Number	Device Marking	Maximum Recurrent Peak Reverse Voltage	Maximum RMS Voltage	Maximum DC Blocking Voltage
MURSB2040CTA	MURSB2040CTA	400V	280V	400V

### **Electrical Characteristics @ 25°C Unless Otherwise Specified**

Average Rectified Forward Current	$I_{F(AV)}$	20A	$T_C=125^\circ C$
Peak Forward Surge Current	$I_{FSM}$	120A	8.3ms,Half Sine
Instantaneous Forward Voltage	$V_F$	1.10V(Typ) 1.25V(Max) 1.05V(Max)	$I_F=10A; T_J=25^\circ C$ $I_F=10A; T_J=25^\circ C$ $I_F=10A; T_J=125^\circ C$
Maximum Reverse Current At Rated DC Blocking Voltage	$I_R$	5uA 50uA	$T_J=25^\circ C;$ $T_J=125^\circ C$
Typical Junction Capacitance	$C_J$	50pF	Measured at 1.0MHz, $V_R=4.0V$
Reverse Recovery Time	$t_{rr}$	25ns(Typ.) 35ns(Max.)	$I_F=0.5A; I_R=1.0A;$ $I_{RR}=0.25A$
		33ns(Typ.) 55ns(Typ.)	$T_J=25^\circ C$ $T_J=125^\circ C$
Peak recovery current	$I_{RRM}$	4.1A(Typ.) 8.1A(Typ.)	$T_J=25^\circ C$ $T_J=125^\circ C$
Reverse recovery charge	$Q_{rr}$	68nC(Typ.) 225nC(Typ.)	$T_J=25^\circ C$ $T_J=125^\circ C$

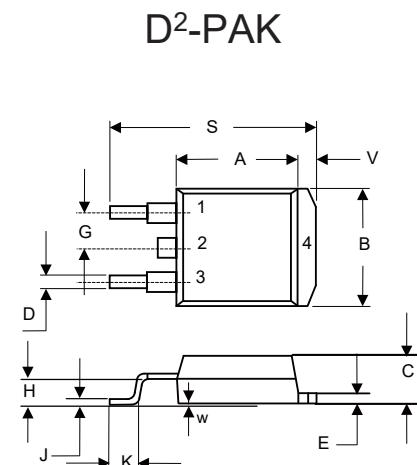
Note: 1. Halogen free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.

2 High temperature solder exemption applied, see EU directive annex 7a

## Internal Structure

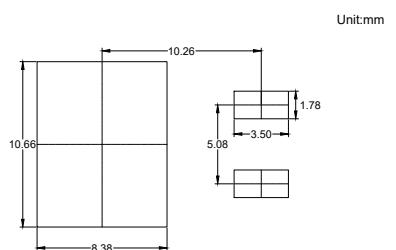


**20 Amp  
FRED Rectifiers  
400 Volts**



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	0.10		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



## Curve Characteristics

Fig. 1 - Forward Current Derating Curve

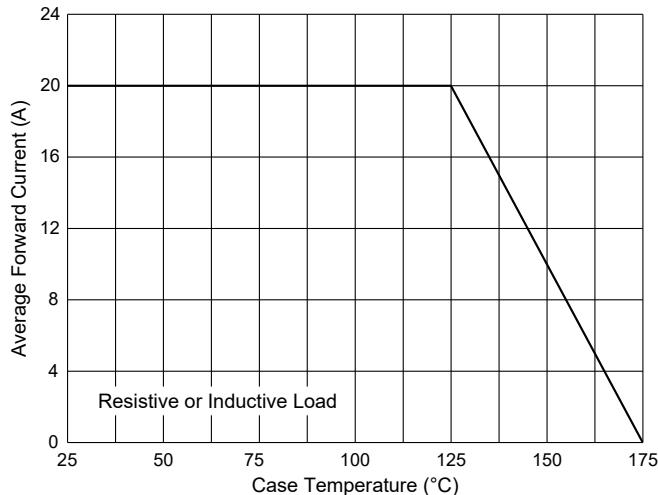


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current

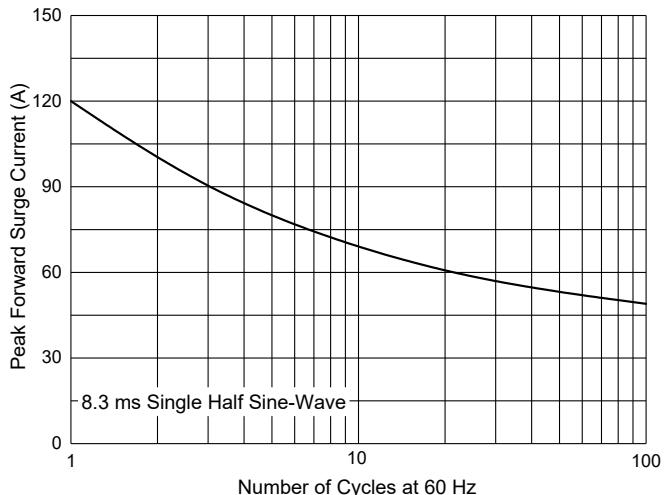


Fig. 3 - Typical Instantaneous Forward Characteristics

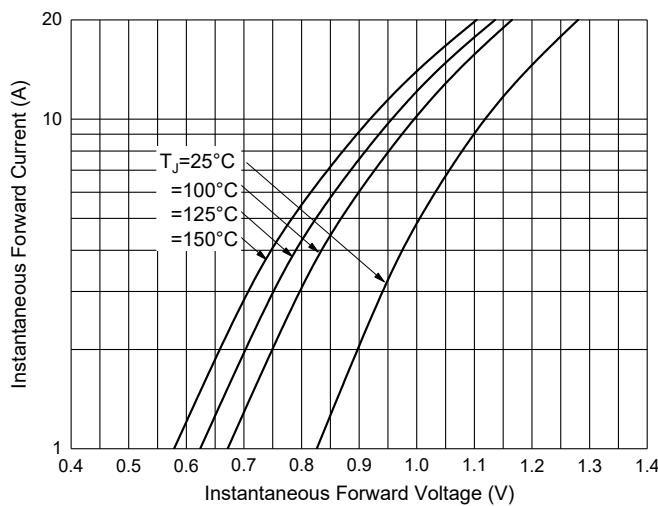
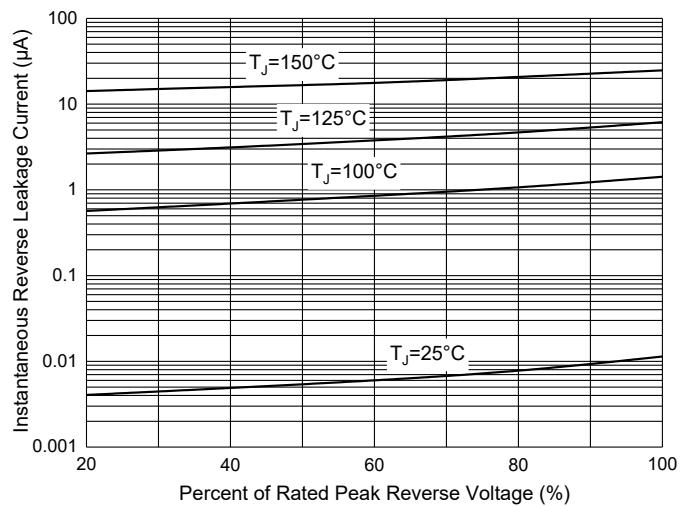


Fig. 4 - Typical Reverse Leakage Characteristics



## 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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