

## Features

- Halogen Free. "Green" Device (Note 1)
- High Surge Forward Current Capability
- Low Power Loss and High Efficiency
- Lead Free Finish/RoHS Compliant(Note 2)("P" Suffix Designates Compliant. See Ordering Information)
- Epoxy Meets UL 94 V-0 Flammability Rating
- Moisture Sensitivity Level 1

## Maximum Ratings

- Operating Junction Temperature Range: -55°C to +150°C
- Storage Temperature Range: -55°C to +150°C
- Maximum thermal Resistance: 8.0 °C/W Junction to Case

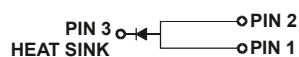
MCC Part Number	Device Marking	Maximum Recurrent Peak Reverse Voltage	Maximum RMS Voltage	Maximum DC Blocking Voltage
MBR20U45	20U45	45V	31.5V	45V

## Electrical Characteristics @ 25°C Unless Otherwise Specified

Average Forward Current	$I_O$	20A	$T_C = 70^\circ\text{C}$
Peak Forward Surge Current	$I_{FSM}$	300A	8.3ms, Half Sine
Forward Voltage	$V_F$	0.46V(Typ)	$I_F=20\text{A } T_J=25^\circ\text{C}$
		0.50V(Max)	
		0.41V(Typ)	$I_F=20\text{A } T_J=125^\circ\text{C}$
		0.45V(Max)	
Reverse Current	$I_R$	0.5mA(Max) 100mA(Max)	$V_R=45; T_J=25^\circ\text{C}$ $V_R=45; T_J=125^\circ\text{C}$
Reverse Breakdown Voltage	$V_{BR}$	45V(Min)	$I_R=0.5\text{mA}$
Current Squared Time	$I^2T$	373.5 A <sup>2</sup> s	$1\text{ms} \leq t < 8.3\text{ms}$ $T_J=25^\circ\text{C}$

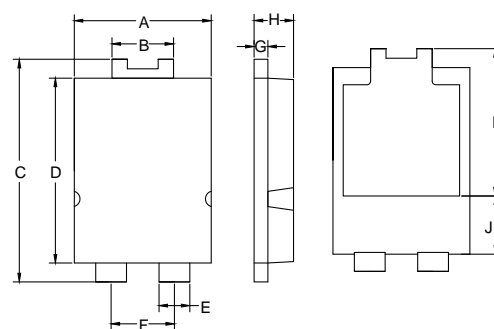
Note: 1. Halogen free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.  
2. High Temperature Solder Exemption Applied, see EU Directive Annex 7a.

## Internal Structure



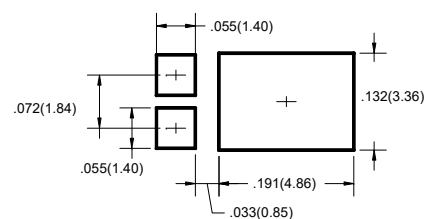
# 20 Amp Schottky Barrier Rectifier 45 Volts

## TO-277



DIM	DIMENSIONS				NOTE
	INCHES		MM		
	MIN	MAX	MIN	MAX	
A	0.154	0.161	3.90	4.10	
B	0.067	0.075	1.70	1.90	
C	0.252	0.260	6.40	6.60	
D	0.209	0.217	5.30	5.50	
E	0.031	0.039	0.80	1.00	
F	0.071	0.075	1.80	1.90	
G	0.014	0.018	0.35	0.45	
H	0.043	0.047	1.10	1.20	
I	0.161	0.177	4.10	4.50	
J	0.059	0.075	1.50	1.90	

## Suggested Solder Pad Layout



**Curve Characteristics**

Fig. 1 - Forward Current Derating Curve

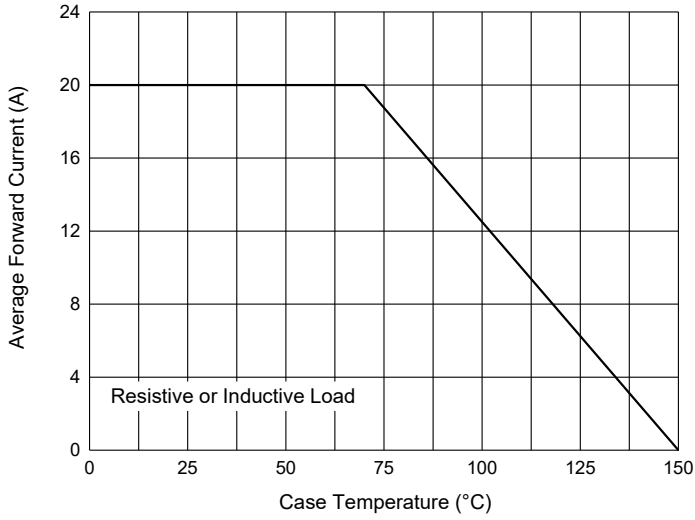


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current

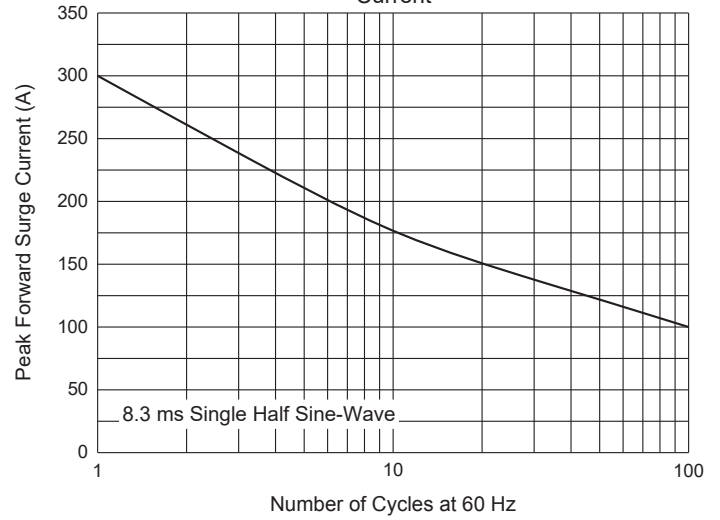


Fig. 3 - Typical Instantaneous Forward Characteristics

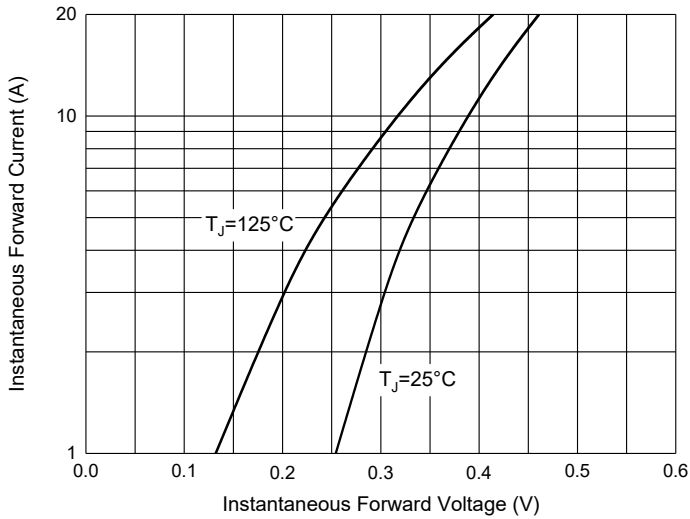
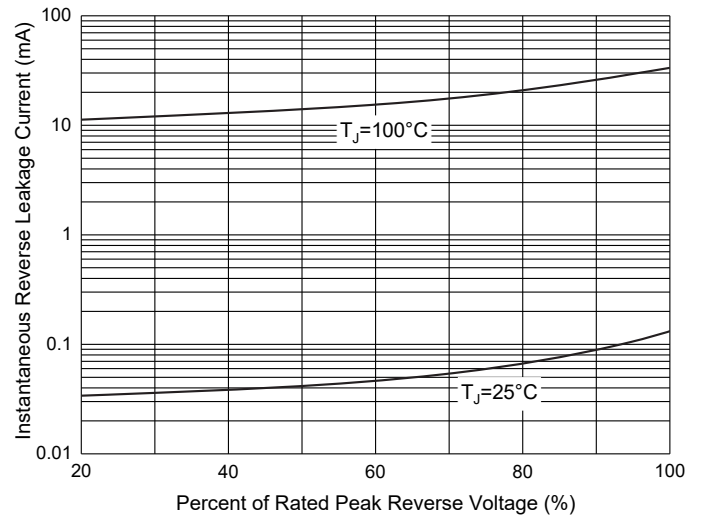


Fig. 4 - Typical Reverse Leakage Characteristics



## Ordering Information

Device	Packing
Part Number-TP	Tape&Reel: 4Kpcs/Reel

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