

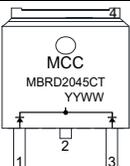
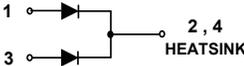
## Features

- Halogen Free. "Green" Device (Note 1)
- Fully Automotive Qualified to AEC-Q101
- Epoxy Meets UL 94 V-0 Flammability Rating
- Moisture Sensitivity Level 1
- Lead Free Finish/RoHS Compliant (Note 2) ("P" Suffix Designates RoHS Compliant. See Ordering Information)

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

Parameter	Symbol	Value	Unit
Peak Repetitive Reverse Voltage	$V_{RRM}$	45	V
Working Peak Reverse Voltage	$V_{RWM}$		
DC Blocking Voltage	$V_R$		
RMS Reverse Voltage	$V_{RMS}$	31.5	V
Average Rectified Forward Current	$I_{F(AV)}$	10	A
Per Diode Per Device		20	
Non-Repetitive Peak Surge Current @8.3ms Half Sine Wave	$I_{FSM}$	120	A
Current Squared Time @ 1ms ≤ t ≤ 8.3ms	$I^2t$	60	A <sup>2</sup> s

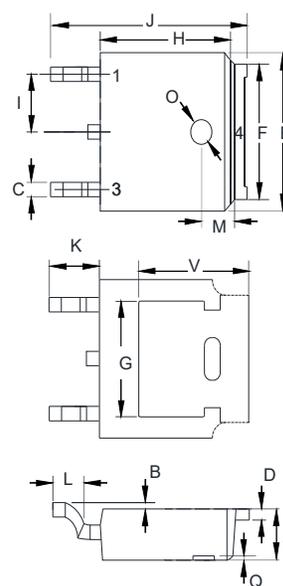
## Internal Structure

Pin	Description	Simplified Outline	Graphic Symbol
1,3	Anode		
2,4	Cathode		

- 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.

# 20 Amp Schottky Barrier Rectifiers 45 Volts

## (TO-252) DPAK



DIM	DIMENSIONS				NOTE
	INCHES		MM		
	MIN	MAX	MIN	MAX	
A	0.087	0.094	2.20	2.40	
B	0.000	0.005	0.00	0.13	
C	0.026	0.034	0.66	0.86	
D	0.018	0.023	0.46	0.58	
E	0.256	0.264	6.50	6.70	
F	0.201	0.215	5.10	5.46	
G	0.190		4.83		
H	0.236	0.244	6.00	6.20	
I	0.086	0.094	2.18	2.39	
J	0.386	0.409	9.80	10.40	
K	0.114		2.90		
L	0.055	0.067	1.40	1.70	
M	0.063		1.60		
O	0.043	0.051	1.10	1.30	
Q	0.000	0.012	0.00	0.30	
V	0.211		5.35		

## 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
$R_{th(J-C)}$	Thermal Resistance from Junction to Case	Per Device		2		°C/W
$R_{th(J-A)}$	Thermal Resistance from Junction to Ambient	Note 1		45		°C/W

Note:

1. Mounted on P.C.B. with 1in2 (25.4 mm x 25.4 mm) copper pad areas.

## Electrical Characteristics @ 25°C Unless Otherwise Specified

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Forward Voltage Per Diode	$V_F$	$I_F=10A; T_J=25^\circ C$		0.56	0.63	V
		$I_F=10A; T_J=125^\circ C$		0.51	0.58	
Reverse Current Per Diode	$I_R$	$V_R=45V; T_J=25^\circ C$			0.1	mA
		$V_R=45V; T_J=125^\circ C$			100	
Junction Capacitance Per Diode	$C_J$	$V_R=4V; f=1MHz; T_J=25^\circ C$		385		pF

## Curve Characteristics

Fig. 1 - Forward Current Derating Curve

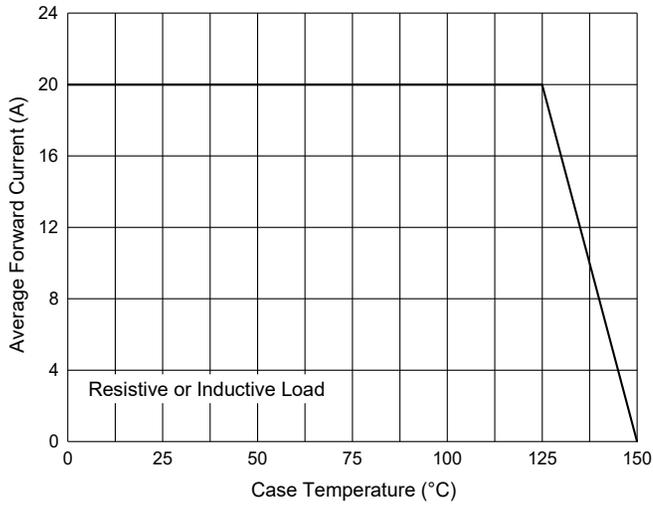


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current Per Diode

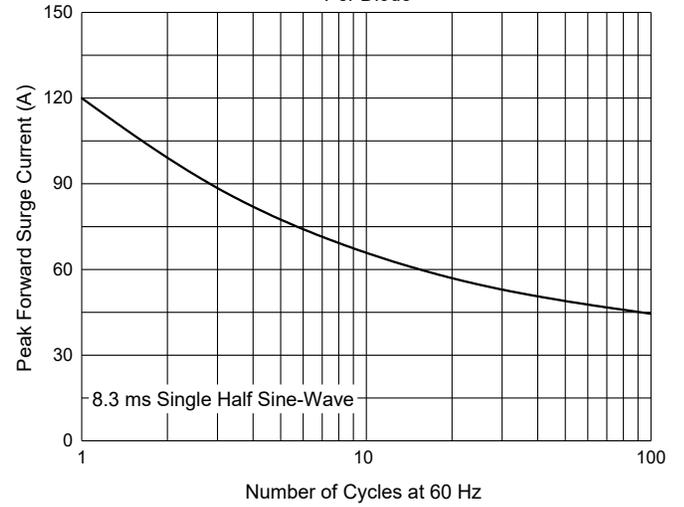


Fig. 3 - Typical Instantaneous Forward Characteristics Per Diode

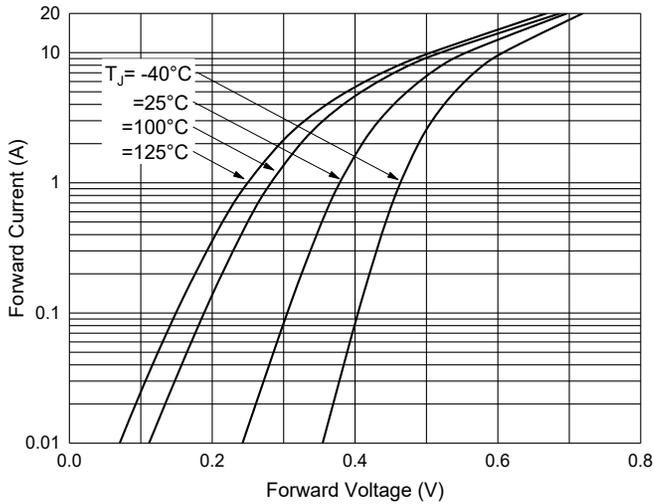


Fig. 4 - Typical Reverse Leakage Characteristics Per Diode

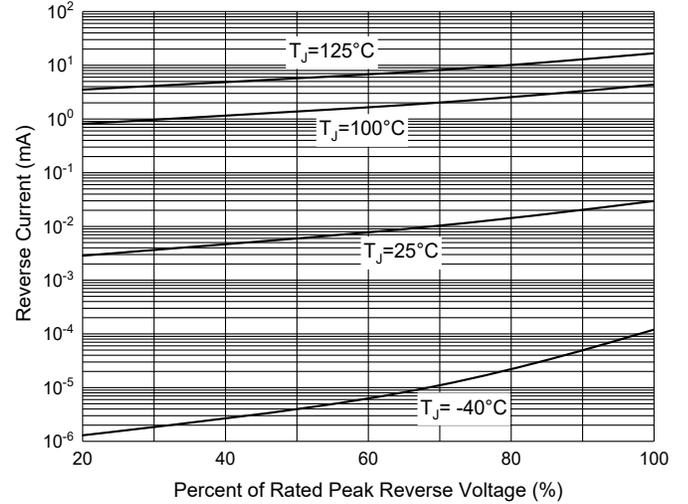
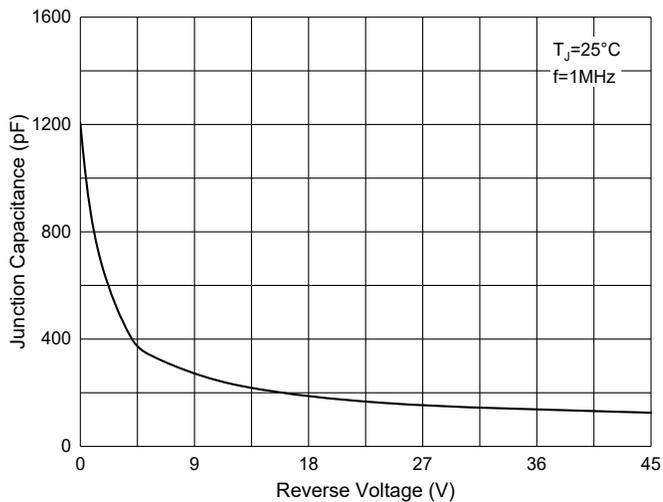


Fig. 5 - Typical Capacitance Characteristics Per Diode



## Ordering Information

Device	Packing
MBRD2045CTQ-TP	Tape&Reel: 2.5Kpcs/Reel

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