

# MBR3045PT

Preferred Device

## SWITCHMODE™ Power Rectifier

... using the Schottky Barrier principle with a platinum barrier metal. These state-of-the-art devices have the following features:

- Dual Diode Construction — Terminals 1 and 3 may be Connected for Parallel Operation at Full Rating
- Guardring for Stress Protection
- Low Forward Voltage
- 150°C Operating Junction Temperature

### Mechanical Characteristics:

- Case: Epoxy, Molded
- Weight: 4.3 grams (approximately)
- Finish: All External Surfaces Corrosion Resistant and Terminal Leads are Readily Solderable
- Lead Temperature for Soldering Purposes: 260°C Max. for 10 Seconds
- Shipped 30 units per plastic tube
- Marking: B3045

### MAXIMUM RATINGS

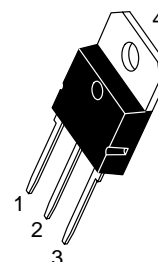
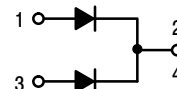
Rating	Symbol	Max	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	$V_{RRM}$ $V_{RWM}$ $V_R$	45	V
Average Rectified Forward Current (Rated $V_R$ , $T_C = 105^\circ\text{C}$ ) Per Device Per Diode	$I_{F(AV)}$	30 15	A
Peak Repetitive Forward Current, (Rated $V_R$ , Square Wave, 20 kHz) Per Diode	$I_{FRM}$	30	A
Non-Repetitive Peak Surge Current (Surge Applied at Rated Load Conditions Halfwave, Single Phase, 60 Hz)	$I_{FSM}$	200	A
Peak Repetitive Reverse Current (2.0 $\mu\text{s}$ , 1.0 kHz) Per Diode See Figure 6.	$I_{RRM}$	2.0	A
Storage Temperature Range	$T_{stg}$	-65 to +175	°C
Operating Junction Temperature	$T_J$	-65 to +150	°C
Peak Surge Junction Temperature (Forward Current Applied)	$T_{J(pk)}$	175	°C
Voltage Rate of Change (Rated $V_R$ )	dv/dt	10,000	V/ $\mu\text{s}$



ON Semiconductor™

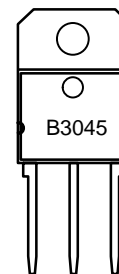
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## SCHOTTKY BARRIER RECTIFIER 30 AMPERES 45 VOLTS



SOT-93  
CASE 340D  
PLASTIC

### MARKING DIAGRAM



B3045 = Device Code

### ORDERING INFORMATION

Device	Package	Shipping
MBR3045PT	SOT-93	30 Units/Rail

Preferred devices are recommended choices for future use and best overall value.

# MBR3045PT

## THERMAL CHARACTERISTICS PER DIODE

Rating	Symbol	Max	Unit
Thermal Resistance, Junction to Case	$R_{\theta JC}$	1.4	$^{\circ}C/W$
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	40	$^{\circ}C/W$

## ELECTRICAL CHARACTERISTICS PER DIODE

Instantaneous Forward Voltage (Note 1.) ( $i_F = 20$ Amps, $T_C = 125^{\circ}C$ ) ( $i_F = 30$ Amps, $T_C = 125^{\circ}C$ ) ( $i_F = 30$ Amps, $T_C = 25^{\circ}C$ )	$V_F$	0.60 0.72 0.76	Volts
Instantaneous Reverse Current (Note 1.) (Rated dc Voltage, $T_C = 125^{\circ}C$ ) (Rated dc Voltage, $T_C = 25^{\circ}C$ )	$i_R$	100 1.0	mA

1. Pulse Test: Pulse Width = 300  $\mu s$ , Duty Cycle  $\leq 2.0\%$ .

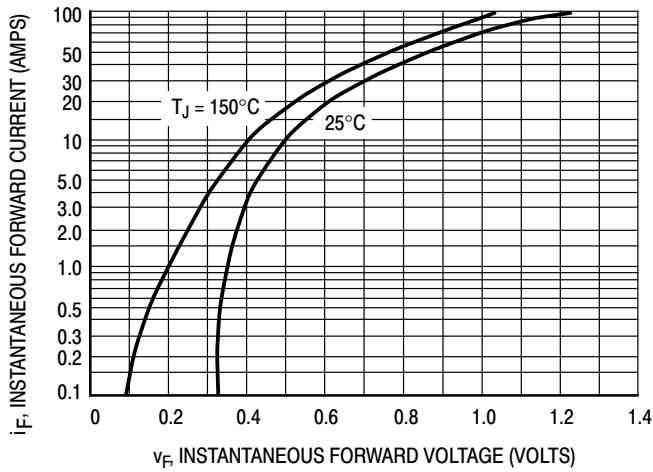


Figure 1. Typical Forward Voltage

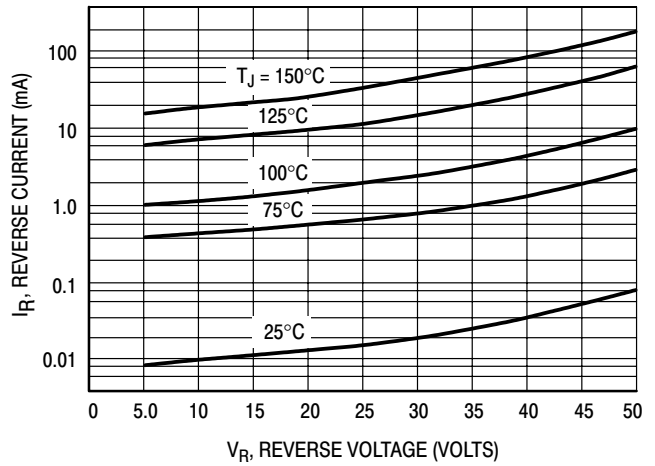


Figure 2. Typical Reverse Current

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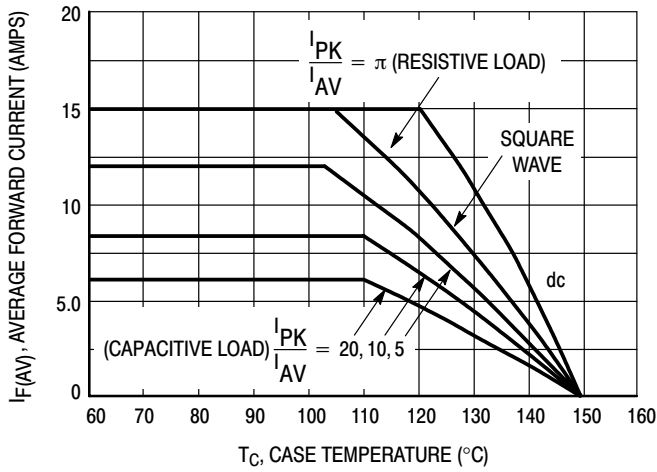


Figure 3. Current Derating (Per Leg)

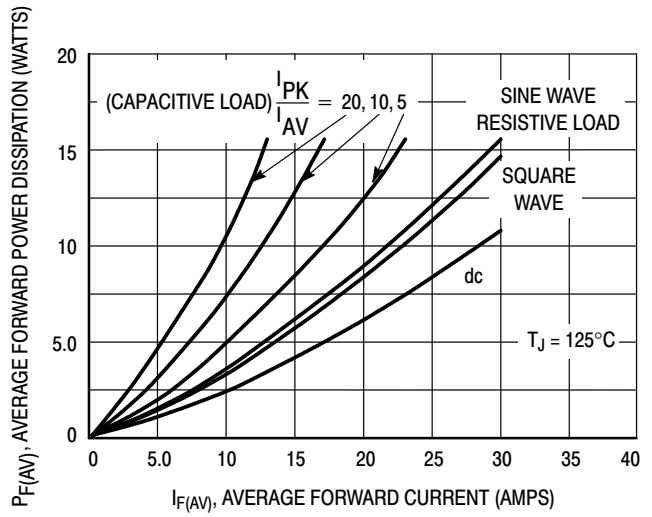


Figure 4. Forward Power Dissipation (Per Leg)

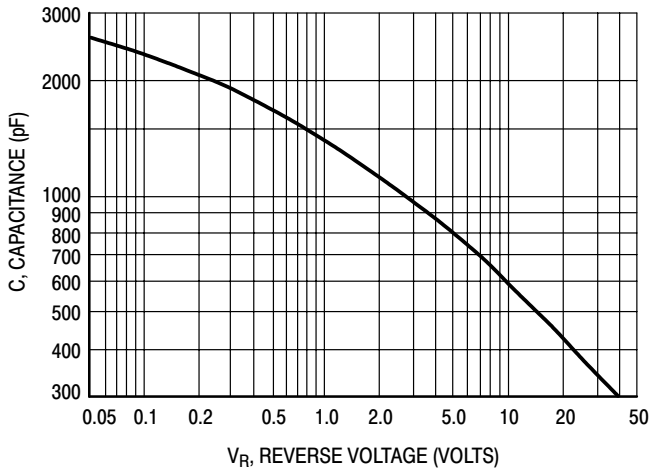


Figure 5. Capacitance

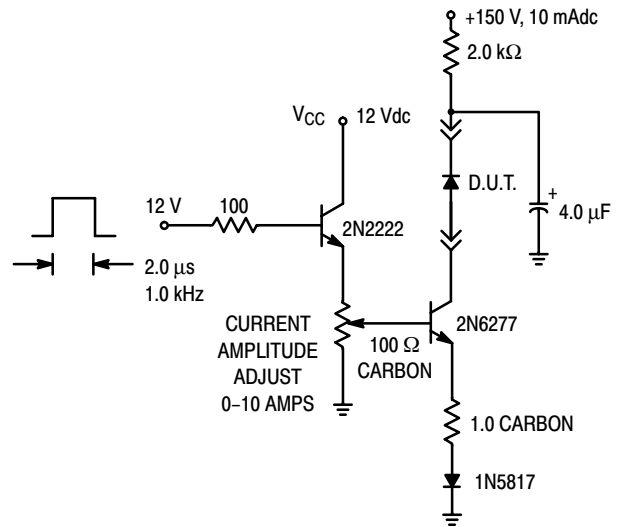
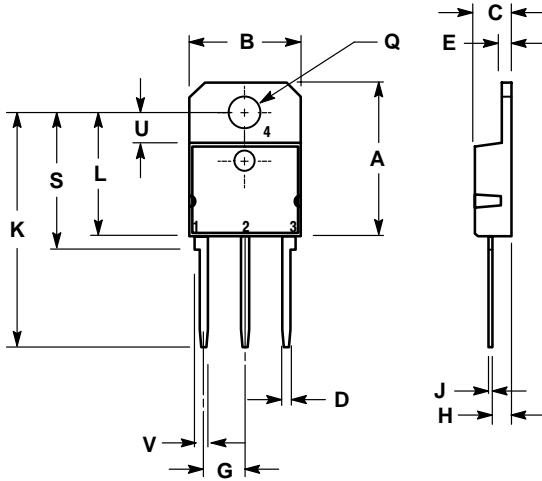


Figure 6. Test Circuit for Repetitive Reverse Current

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## PACKAGE DIMENSIONS


SOT-93  
(TO-218)  
PLASTIC  
CASE 340D-02  
ISSUE B



- NOTES:  
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.  
2. CONTROLLING DIMENSION: MILLIMETER.

DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	---	20.35	---	0.801
B	14.70	15.20	0.579	0.598
C	4.70	4.90	0.185	0.193
D	1.10	1.30	0.043	0.051
E	1.17	1.37	0.046	0.054
G	5.40	5.55	0.213	0.219
H	2.00	3.00	0.079	0.118
J	0.50	0.78	0.020	0.031
K	31.00 REF		1.220 REF	
L	---	16.20	---	0.638
Q	4.00	4.10	0.158	0.161
S	17.80	18.20	0.701	0.717
U	4.00 REF		0.157 REF	
V	1.75 REF		0.069	

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