Advance Information

SWITCHMODE™ Power Rectifier

MBR3045ST

Motorola Preferred Device

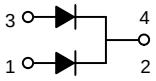
SCHOTTKY BARRIER RECTIFIER 30 AMPERES 45 VOLTS

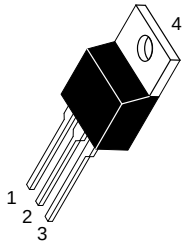
. . . using the Schottky Barrier principle with a platinum barrier metal. This state–of–the–art device has the following features:

- Dual Diode Construction — Terminals 1 and 3 May Be Connected for Parallel Operation at Full Rating
- 45 V Blocking Voltage
- Low Forward Voltage Drop
- Guardring for Stress Protection
- 150°C Operating Junction Temperature
- Guaranteed Reverse Avalanche

Mechanical Characteristics

- Case: Epoxy, Molded
- Weight: 1.9 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 50 Units Per Plastic Tube
- Marking: B3045





CASE 221A–06, STYLE 6 (TO–220AB)

MAXIMUM RATINGS

Rating		Symbol	Max	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage		V_{RRM} V_{RWM} V_R	45	Volts
Average Rectified Current T_C = 130°C	Per Device Per Diode	$I_{F(AV)}$	30 15	Amps
Peak Repetitive Forward Current, Per Diode (Square Wave, V_R = 45 V, 20 kHz)		I_{FRM}	30	Amps
Non Repetitive Peak Surge Current (Surge applied at rated load conditions halfwave, single phase, 60 Hz)		I_{FSM}	150	Amps
Peak Repetitive Reverse Current, Per Diode (2.0 µs, 1.0 kHz)		I_{RRM}	2.0	Amps
Operating Junction Temperature		T_J	–65 to +150	°C
Storage Temperature		T_{stg}	–65 to +175	°C
Peak Surge Junction Temperature (Forward Current Applied)		$T_{J(pk)}$	175	°C
Voltage Rate of Change (Rated V_R)		dV/dt	10000	V/µs

THERMAL CHARACTERISTICS PER DIODE

Thermal Resistance, Junction to Case		$R_{\theta JC}$	1.5	°C/W

ELECTRICAL CHARACTERISTICS PER DIODE

Instantaneous Forward Voltage (1)	(I_F = 30 Amp, T_C = 25°C) (I_F = 30 Amp, T_C = 125°C) (I_F = 20 Amp, T_C = 125°C)	V_F	0.76 0.72 0.60	Volts
Instantaneous Reverse Current (1)	(V_R = 45 Volts, T_C = 25°C) (V_R = 45 Volts, T_C = 125°C)	I_R	0.2 40	mA

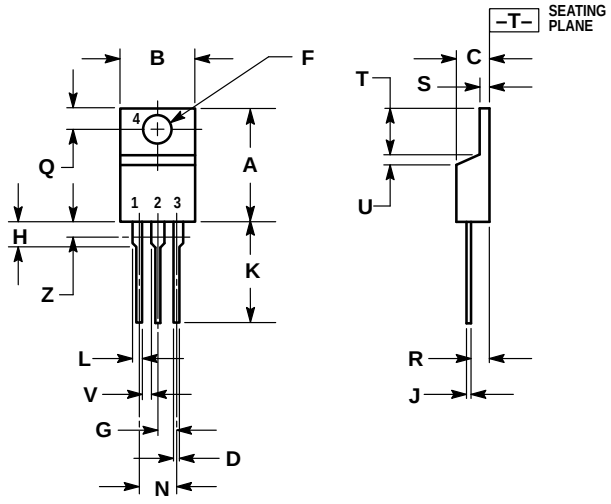
(1) Pulse Test: Pulse Width = 300 µs, Duty Cycle ≤ 2.0%

SWITCHMODE is a trademark of Motorola Inc.

This document contains information on a new product. Specifications and information herein are subject to change without notice.

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

PACKAGE DIMENSIONS



NOTES:
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCH.
3. DIMENSION Z DEFINES A ZONE WHERE ALL BODY AND LEAD IRREGULARITIES ARE ALLOWED.

	INCHES		MILLIMETERS	
DIM	MIN	MAX	MIN	MAX
A	0.570	0.620	14.48	15.75
B	0.380	0.405	9.66	10.28
C	0.160	0.190	4.07	4.82
D	0.025	0.035	0.64	0.88
F	0.142	0.147	3.61	3.73
G	0.095	0.105	2.42	2.66
H	0.110	0.155	2.80	3.93
J	0.018	0.025	0.46	0.64
K	0.500	0.562	12.70	14.27
L	0.045	0.060	1.15	1.52
N	0.190	0.210	4.83	5.33
Q	0.100	0.120	2.54	3.04
R	0.080	0.110	2.04	2.79
S	0.045	0.055	1.15	1.39
T	0.235	0.255	5.97	6.47
U	0.000	0.050	0.00	1.27
V	0.045	—	1.15	—
Z	—	0.080	—	2.04

STYLE 6:
PIN 1. ANODE
2. CATHODE
3. ANODE
4. CATHODE

CASE 221A–06
(TO–220AB)
ISSUE Y

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