MBRD620CT, MBRD630CT, MBRD640CT, MBRD650CT, MBRD660CT

MBRD620CT, MBRD640CT and MBRD660CT are Preferred Devices

SWITCHMODE™ Power Rectifiers

DPAK Surface Mount Package

. . . in switching power supplies, inverters and as free wheeling diodes, these state–of–the–art devices have the following features:

- Extremely Fast Switching
- Extremely Low Forward Drop
- Platinum Barrier with Avalanche Guardrings

Mechanical Characteristics:

- Case: Epoxy, Molded
- Weight: 0.4 gram (approximately)
- Finish: All External Surfaces Corrosion Resistant and Terminal Leads are Readily Solderable
- Lead and Mounting Surface Temperature for Soldering Purposes: 260°C Max. for 10 Seconds
- Shipped 75 units per plastic tube
- Available in 16 mm Tape and Reel, 2500 units per reel, by adding a “T4’’ suffix to the part number
- Marking: B620T, B630T, B640T, B650T, B660T

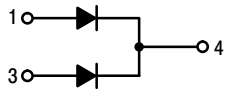
MAXIMUM RATINGS

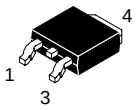
Please See the Table on the Following Page

ON Semiconductor™

http://onsemi.com

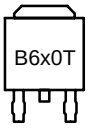
SCHOTTKY BARRIER RECTIFIERS 6.0 AMPERES 20 TO 60 VOLTS





DPAK
CASE 369A
PLASTIC

MARKING DIAGRAM



B6x0T = Device Code
x = 2, 3, 4, 5 or 6

ORDERING INFORMATION

Device	Package	Shipping
MBRD620CTT4	DPAK	2500/Tape & Reel
MBRD630CTT4	DPAK	2500/Tape & Reel
MBRD640CTT4	DPAK	2500/Tape & Reel
MBRD650CT	DPAK	75 Units/Rail
MBRD650CTT4	DPAK	2500/Tape & Reel
MBRD660CT	DPAK	75 Units/Rail
MBRD660CTRL	DPAK	1800/Tape & Reel
MBRD660CTT4	DPAK	2500/Tape & Reel

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

MAXIMUM RATINGS

Rating	Symbol	MBRD					Unit
		620CT	630CT	640CT	650CT	660CT	
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	V_{RRM} V_{RWM} V_R	20	30	40	50	60	Volts
Average Rectified Forward Current Per Diode T_C = 130°C (Rated V_R) Per Device	$I_{F(AV)}$	3 6					Amps
Peak Repetitive Forward Current, T_C = 130°C (Rated V_R, Square Wave, 20 kHz) Per Diode	I_{FRM}	6					Amps
Nonrepetitive Peak Surge Current (Surge applied at rated load conditions halfwave, single phase, 60 Hz)	I_{FSM}	75					Amps
Peak Repetitive Reverse Surge Current (2 μs, 1 kHz)	I_{RRM}	1					Amp
Operating Junction Temperature	T_J	–65 to +150					°C
Storage Temperature	T_{stg}	–65 to +175					°C
Voltage Rate of Change (Rated V_R)	dv/dt	10,000					V/μs

THERMAL CHARACTERISTICS PER DIODE

Maximum Thermal Resistance, Junction to Case	$R_{\theta JC}$	6	°C/W
Maximum Thermal Resistance, Junction to Ambient (Note 1.)	$R_{\theta JA}$	80	°C/W

ELECTRICAL CHARACTERISTICS PER DIODE

Maximum Instantaneous Forward Voltage (Note 2.) i_F = 3 Amps, T_C = 25°C i_F = 3 Amps, T_C = 125°C i_F = 6 Amps, T_C = 25°C i_F = 6 Amps, T_C = 125°C	V_F	 0.7 0.65 0.9 0.85	Volts
Maximum Instantaneous Reverse Current (Note 2.) (Rated dc Voltage, T_C = 25°C) (Rated dc Voltage, T_C = 125°C)	i_R	 0.1 15	mA

1. Rating applies when surface mounted on the minimum pad size recommended.
2. Pulse Test: Pulse Width = 300 μs, Duty Cycle ≤ 2.0%.

TYPICAL CHARACTERISTICS

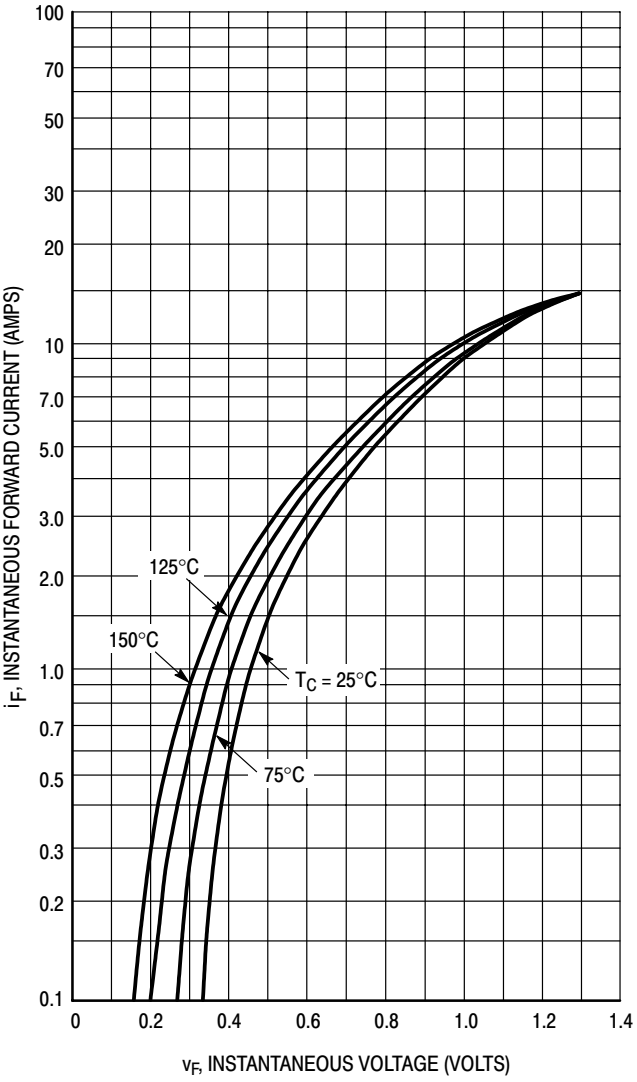
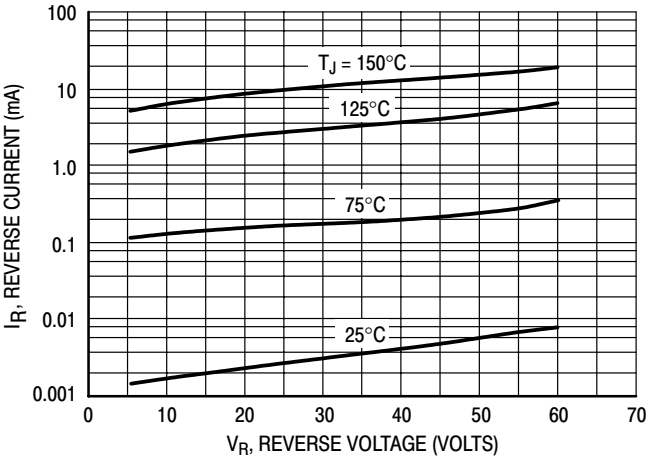


Figure 1. Typical Forward Voltage, Per Leg



*The curves shown are typical for the highest voltage device in the voltage grouping. Typical reverse current for lower voltage selections can be estimated from these curves if V_R is sufficient below rated V_R.

Figure 2. Typical Reverse Current,* Per Leg

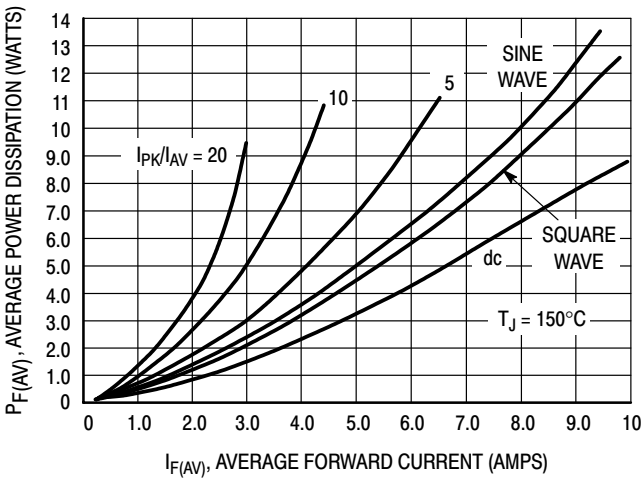


Figure 3. Average Power Dissipation, Per Leg

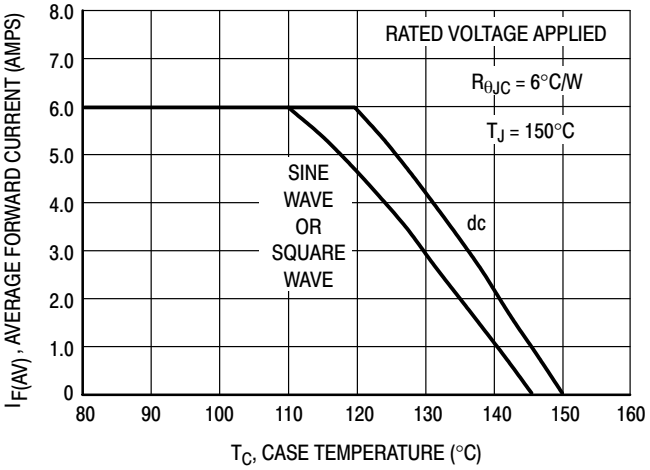


Figure 4. Current Derating, Case, Per Leg

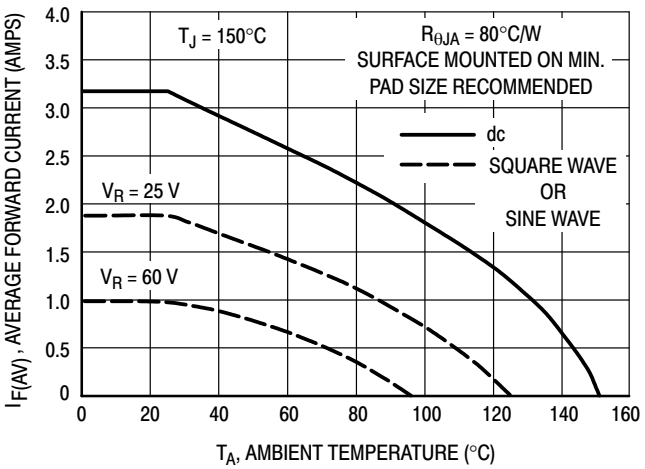


Figure 5. Current Derating, Ambient, Per Leg

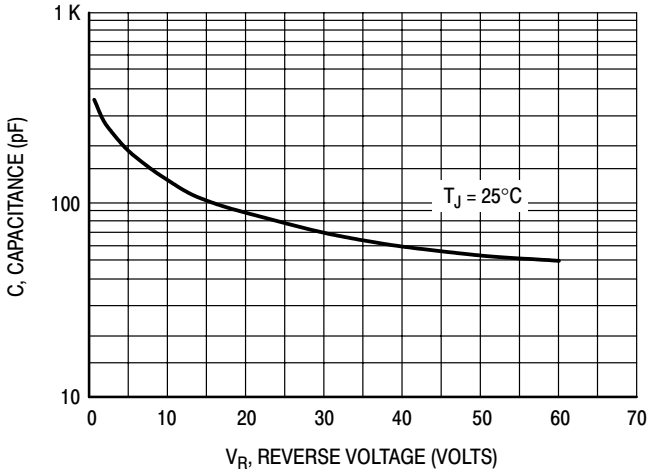
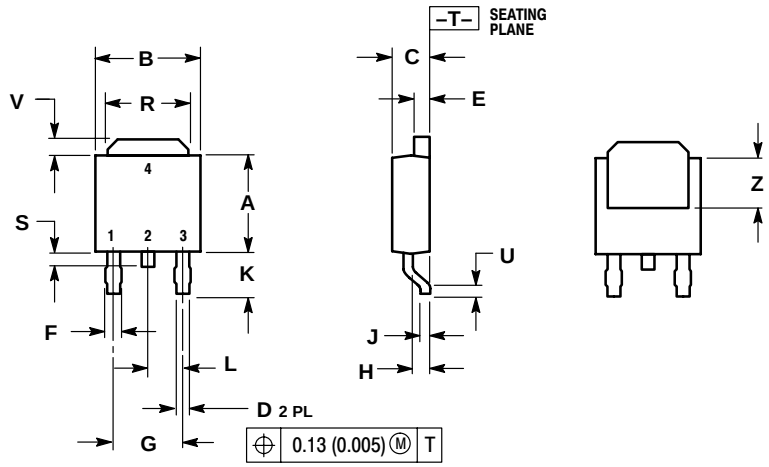


Figure 6. Typical Capacitance, Per Leg

PACKAGE DIMENSIONS

DPAK
PLASTIC
CASE 369A–13
ISSUE AA



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

	INCHES		MILLIMETERS	
DIM	MIN	MAX	MIN	MAX
A	0.235	0.250	5.97	6.35
B	0.250	0.265	6.35	6.73
C	0.086	0.094	2.19	2.38
D	0.027	0.035	0.69	0.88
E	0.033	0.040	0.84	1.01
F	0.037	0.047	0.94	1.19
G	0.180 BSC		4.58 BSC	
H	0.034	0.040	0.87	1.01
J	0.018	0.023	0.46	0.58
K	0.102	0.114	2.60	2.89
L	0.090 BSC		2.29 BSC	
R	0.175	0.215	4.45	5.46
S	0.020	0.050	0.51	1.27
U	0.020	---	0.51	---
V	0.030	0.050	0.77	1.27
Z	0.138	---	3.51	---

Notes

Notes

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