

MBRD1040

10A LOW VF SCHOTTKY BARRIER RECTIFIER

Features

- Guard Ring Die Construction for Transient Protection
- Low Power Loss, High Efficiency
- High Surge Capability
- High Maximum Junction Temperature Rating
- Very Low Forward Voltage Drop
- Very Low Leakage Current
- For Use in Low Voltage, High Frequency Inverters, Free Wheeling, and Polarity Protection Applications
- Plastic Material: UL Flammability Classification Rating 94V-0

Mechanical Data

- Case: DPAK Molded Plastic
- Terminals: Solderable per MIL-STD-202, Method 208
- Polarity: See Diagram
- Marking Information: See Page 2
- Weight: 0.4 grams (approx.)





Note: Pins 1 & 3 must be electrically connected at the printed circuit board.

Maximum Ratings @ T_A = 25°C unless otherwise specified

Single phase, half wave, 60Hz, resistive or inductive load.

For capacitive load, derate current by 20%.								
Characteristic	Symbol	Value	Unit					
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	V _{RRM} V _{RWM} V _R	40	V					
RMS Reverse Voltage	V _{R(RMS)}	28	V					
Average Rectified Output Current (Also see Figure 4)	lo	10	А					
Non-Repetitive Peak Forward Surge Current 8.3ms Single half sine-wave Superimposed on Rated Load (JEDEC Method)	I _{FSM}	100	А					
Typical Thermal Resistance Junction to Case	$R_{ ext{ heta}JC}$	6.0	°C/W					
Typical Thermal Resistance Junction to Ambient	$R_{ heta JA}$	80	°C/W					
Operating Temperature Range	Tj	-65 to +150	°C					
Storage Temperature Range	T _{STG}	-65 to +150	°C					

Electrical Characteristics @ T_A = 25°C unless otherwise specified

Characteristic	Symbol	Min	Тур	Max	Unit	Test Condition
Reverse Breakdown Voltage (Note 1)	V _{(BR)R}	40	_		V	I _R = 1mA
Forward Voltage (Note 1)	V _{FM}		0.45 0.47	0.49 0.41 0.51	v	$ I_{F} = 8A, T_{S} = 25^{\circ}C \\ I_{F} = 8A, T_{S} = 125^{\circ}C \\ I_{F} = 10A, T_{S} = 25^{\circ}C $
Peak Reverse Current (Note 1)	I _{RM}		0.1 12.5	0.3 25	mA	$\begin{array}{l} T_{S} = \ 25^{\circ}C, \ V_{R} = 35V \\ T_{S} = \ 100^{\circ}C, \ V_{R} = 35V \end{array}$
Junction Capacitance	Cj	_	700	_	pF	$f = 1.0MHz$, $V_R = 4.0V DC$

Notes: 1. Short duration test pulse used to minimize self-heating effect.

NEW PRODUCT



Device Packaging Shipping MBRD1040-T DPAK 2500/Tape & Reel

Notes: 2. For Packaging Details, go to our website at http://www.diodes.com/datasheets/ap02007.pdf.





NEW PRODUCT

- Notes: 3. $T_A = T_{SOLDERING POINT}$, $R_{\theta JC} = 6.0^{\circ}C/W$, $R_{\theta CA} = 0^{\circ}C/W$.
 - Device mounted on GETEK substrate, 2"x2", 2 oz. copper, double-sided, cathode pad dimensions 0.75" x 1.0", anode pad dimensions 0.25" x 1.0". R_{0JA} in range of 15-30°C/W.
 - Device mounted on FR-4 substrate, 2"x2", 2 oz. copper, single-sided, pad layout as per Diodes Inc. suggested pad layout document AP02001 which can be found on our website at http://www.diodes.com/datasheets/ap02001.pdf. R_{θJA} in range of 60-75°C/W.
 - 6. Maximum power disspiration when the device is mounted in accordance to the conditions described in Note 5.
 - 7. Maximum power disspation when the device is mounted in accordance to the conditions described in Note 4.