

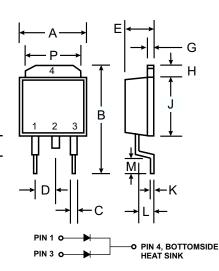
10A SURFACE MOUNT DUAL SCHOTTKY BARRIER RECTIFIER

Features

- Guard Ring Die Construction for Transient Protection
- Low Power Loss, High Efficiency
- High Surge Capability
- Very Low Forward Voltage Drop
- For Use in Low Voltage, High Frequency Inverters, OR'ing, 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: See Sheet 2
- Weight: 0.4 grams (approx.)
- Ordering Information, See Below



DPAK					
Dim	Min	Max			
Α	6.3	6.7			
В	_	10			
С	0.3	0.8			
D	2.3 Nominal				
E	2.1	2.5			
G	0.4	0.6			
Н	1.2	1.6			
J	5.3	5.7			
K	0.5 Nominal				
L	1.3	1.8			
М	1.0	_			
Р	5.1	5.5			
All Dimensions in mm					

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 Per Element (See Figure 4) Per Package	lo	5 10	А
Non-Repetitive Peak Forward Surge Current 8.3ms Single half sine-wave Superimposed on Rated Load Per Package (JEDEC Method)	I _{FSM}	75	А
Typical Thermal Resistance Junction to Case Per Element (Note 1)	$R_{ heta JC}$	2.43	°C/W
Voltage Rate of Change @ V _R = 35V, T _j = 25°C	dv/dt	10,000	V/μs
Operating Temperature Range	Tj	-55 to +125	°C
Storage Temperature Range	T _{STG}	-55 to +150	°C

Notes: 1. Device mounted on PC board with 14mm² (.013mm thick) copper pad areas.

Ordering Information (Note 2)

Device	Packaging	Shipping		
MBRD1040CT-T	DPAK	2500/Tape & Reel		

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

Electrical Characteristics @ T_A = 25°C unless otherwise specified

Characteristic	Symbol	Min	Тур	Max	Unit	Test Condition
Reverse Breakdown Voltage (Note 2)	V _{(BR)R}	40	_	_	V	$I_R = 500 \mu A$
Forward Voltage (Note 2)	V _{FM}		0.46 — 0.53	0.48 0.41 0.57 0.55	V	$\begin{array}{l} I_F = 5A, \ T_S = \ 25^{\circ}C \\ I_F = 5A, \ T_S = 100^{\circ}C \\ I_F = 10A, \ T_S = \ 25^{\circ}C \\ I_F = 10A, \ T_S = 100^{\circ}C \\ \end{array}$
Peak Reverse Current (Note 2)	I _{RM}		60 — 15 —	150 10 80 3	μΑ mA μΑ mA	$\begin{array}{l} V_R = 35 \text{V}, \ T_j = 25^{\circ}\text{C} \\ V_R = 35 \text{V}, \ T_j = 100^{\circ}\text{C} \\ V_R = 17.5 \text{V}, \ T_j = 25^{\circ}\text{C} \\ V_R = 17.5 \text{V}, \ T_j = 100^{\circ}\text{C} \\ \end{array}$
Typical Junction Capacitance	Cj	_	500		pF	f = 1.0MHz, V _R = 4.0V DC

Notes:

- 1. Device mounted on PC board with 14mm² (.013mm thick) copper pad areas.
- 2. Short duration test pulse used to minimize self-heating effect.

Marking Information



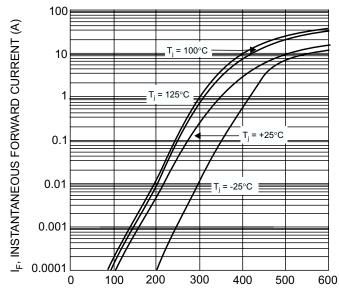
MBRD1040CT = Product type marking code

Oli = Manufacturers' code marking

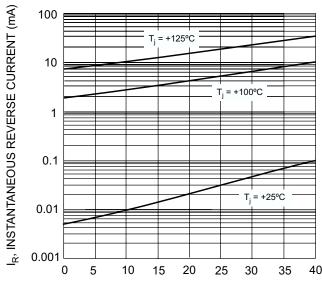
YWW = Date code marking

Y = Last digit of year ex: 2 for 2002

WW = Week code 01 to 52



 $\label{eq:VF} V_{\text{F}}, \text{INSTANTANEOUS FORWARD VOLTAGE (mV)} \\ \text{Fig. 1 Typical Forward Characteristics (per element)} \\$



V_R, INSTANTANEOUS REVERSE VOLTAGE (V) Fig. 2 Typical Reverse Characteristics (Per Element)

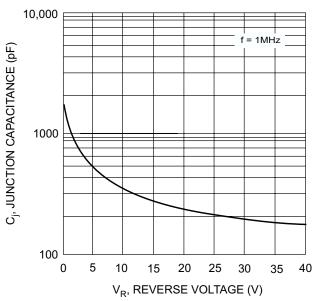


Fig. 3 Typical Junction Capacitance vs. Reverse Voltage

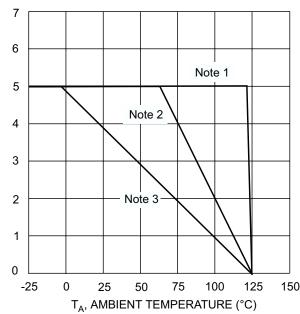
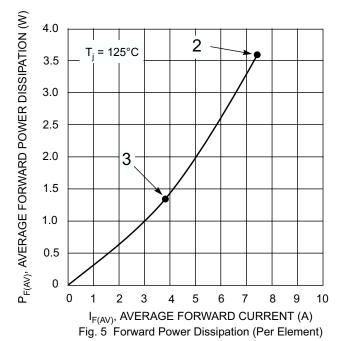


Fig. 4 DC Forward Current Derating (Per Element)



Notes:

- 1. $T_A = T_{SOLDERING\ POINT},\ R_{\theta JC} = 2.43^{\circ}C/W,\ R_{\theta CA} = 0^{\circ}C/W.$
- 2. 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". $R_{\theta JA}$ in range of 15-30°C/W.

 $I_{F(AV)}$, AVERAGE FORWARD CURRENT (A)

 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.