Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!

Contact us

Tel: +86-755-8981 8866 Fax: +86-755-8427 6832
Email & Skype: info@chipsmall.com Web: www.chipsmall.com
Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China

UPS1040e3

10 A LOW V_F Schottky BARRIER RECTIFIER

SCOTTSDALE DIVISION

DESCRIPTION

This UPS1040e3 in the Powermite3® package is a high efficiency Schottky rectifier that is also RoHS compliant offering high current/power capabilities previously found only in much larger packages. They are ideal for SMD applications that operate at high frequencies. In addition to its size advantages, the Powermite3® package includes a full metallic bottom that eliminates the possibility of solder flux entrapment during assembly and a unique locking tab act as an efficient heat path to the heat-sink mounting. Its innovative design makes this device ideal for use with automatic insertion equipment.

IMPORTANT: For the most current data, consult *MICROSEMI*'s website: **http://www.microsemi.com**

KEY FEATURES

- Very low thermal resistance package
- RoHS Compliant with e3 suffix part number
- Guard-ring-die construction for transient protection
- Efficient heat path with Integral locking bottom metal tab
- Low forward voltage
- Full metallic bottom eliminates flux entrapment
- Compatible with automatic insertion
- Low profile-maximum height of 1mm

ABSOLUTE MAXIMUM RATINGS AT 25º C (UNLESS OTHERWISE SPECIFIED)

Rating	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	I_o	10	A
Non-Repetitive Peak Forward Surge Current 8.3 ms Single half sine wave Superimposed on Rated Load@ T_c =90ºC	I_{FSM}	150	A
Storage Temperature	T_{STG}	-55 to +150	ºC
Junction Temperature	T_J	-55 to +150	ºC

APPLICATIONS/BENEFITS

- Switching and Regulating Power Supplies.
- Silicon Schottky (hot carrier) rectifier for minimal reverse voltage recovery
- Elimination of reverse-recovery oscillations to reduce need for EMI filtering
- Charge Pump Circuits
- Reduces reverse recovery loss with low I_{RM}
- Small foot print ■ =
  190 X 260 mils (1:1 Actual size)
  See mounting pad details on pg 3

THERMAL CHARACTERISTICS

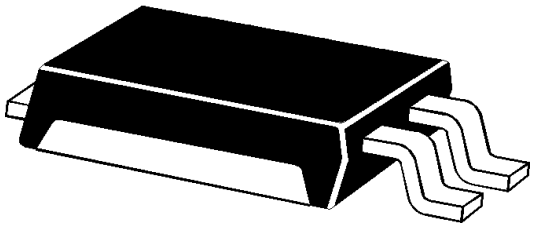
Thermal Resistance			
Junction-to-case (bottom)	$R_{\theta JC}$	3.2	ºC/ Watt
Junction to ambient (1)	$R_{\theta JA}$	65	ºC/ Watt

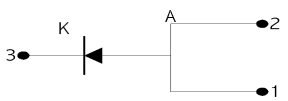
(1) When mounted on FR-4 PC board using 2 oz copper with recommended minimum foot print

MECHANICAL & PACKAGING

- CASE: Void-free transfer molded thermosetting epoxy compound meeting UL94V-0
- FINISH: Annealed matte-Tin plating over copper and readily solderable per MIL-STD-750 method 2026 (consult factory for Tin-Lead plating)
- POLARITY: See figure (left)
- MARKING: S1040•
- WEIGHT: 0.072 gram (approx.)
- Package dimension on last page
- Tape & Reel option: 16 mm tape per Standard EIA-481-B, 5000 on 13" reel

Powermite 3™





Microsemi
Scottsdale Division
8700 E. Thomas Rd. PO Box 1390, Scottsdale, AZ 85252 USA, (480) 941-6300, Fax: (480) 947-1503

ELECTRICAL PARAMETERS @25°C (unless otherwise specified)

Parameter	Symbol	Conditions	Min	Typ.	Max	Units
Forward Voltage (Note 1)	V_F	I_F = 8 A , T_j = 25 ºC I_F = 8 A , T_j = 125 ºC I_F = 10 A , T_j = 25 ºC		0.45 0.47	0.49 0.41 0.51	V
Reverse Break Down Voltage (Note 1)	V_{BR}	I_R = 1 mA	40			V
Reverse Current (Note1)	I_R	V_R = 35 V, T_j = 25ºC V_R = 35 V, T_j = 100 ºC		0.1 12.5	0.3 25	mA mA
Capacitance	C_T	V_R = 4.0V; f = 1 MHz		700		pF

Note: 1 Short duration test pulse used to minimize self – heating effect.

GRAPHS

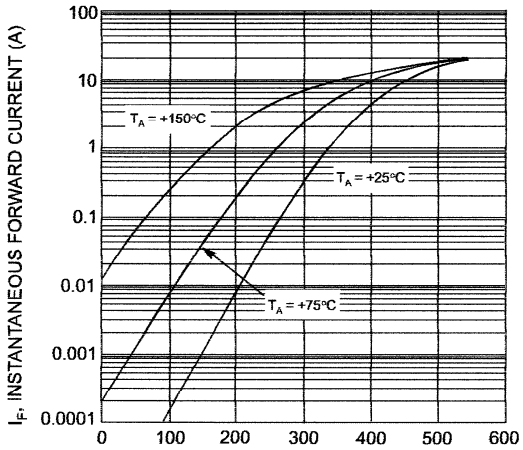


Fig. 1 Typical Forward Characteristics

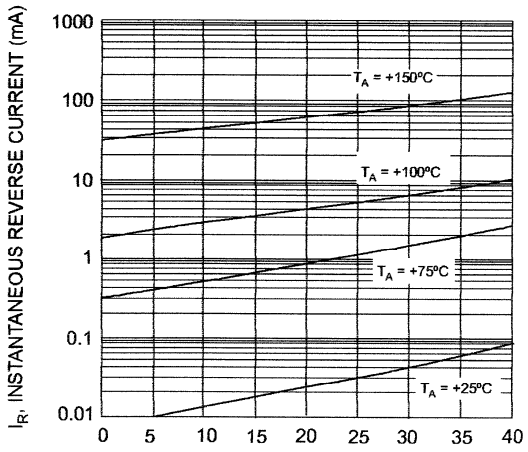


Fig. 2 Typical Reverse Characteristics

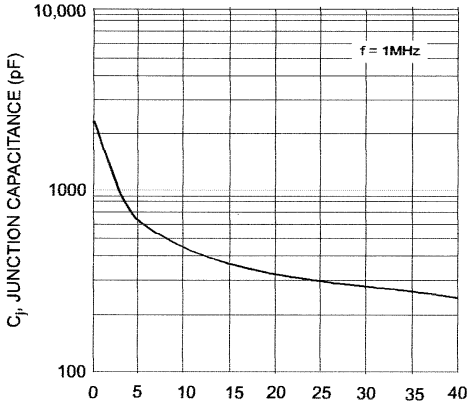


Fig. 3 Typical Junction Capacitance vs. Reverse Voltage

GRAPHS

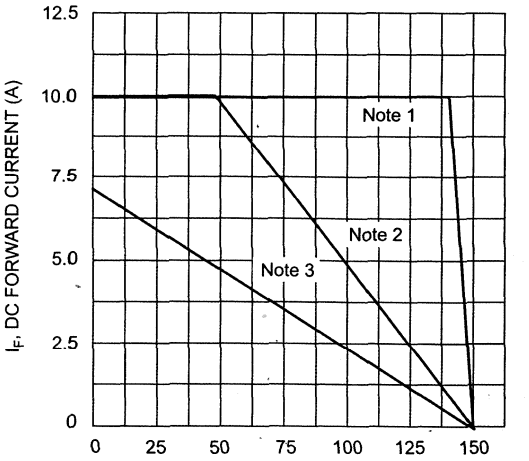


Fig. 4 DC Forward Current Derating

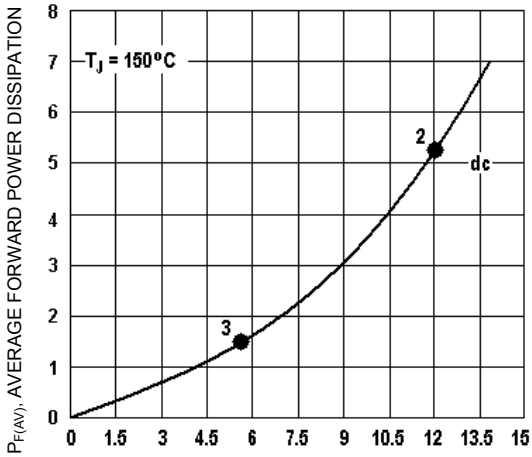


Fig. 5 Forward power Dissipation

NOTE 1: $T_A = T_C$ at case bottom where $R_{\theta JC}$ =2.5º C/W and $R_{\theta CA}$ = 0º C/W (infinite heat sink).

NOTE 2: Device mounted on GETEK substrate, 2" x 2", 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.

NOTE 3: Device mounted on FRA-4 substrate, 2" x 2", 2 oz. copper, single-sided, pad layout $R_{\theta JA}$ in range of 65°C/W. See mounting pad dimensions on next page.

PACKAGE & MOUNTING PAD DIMENSIONS

PACKAGING:

	INCHES	MILLIMETERS
DIM	NOMINAL	NOMINAL
A	0.070	1.778
B	0.173	4.392
C	0.200	5.080
D	0.035	0.889
E	0.160	4.064
F	0.072	1.829
G	0.056	1.422
H	0.044	1.118
J	0.190	4.826
K	0.210	5.344
L	0.038	0.965
M	0.034	0.864
N	0.030	0.762
P	0.030	0.762