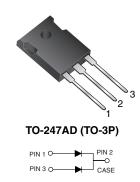


Vishay General Semiconductor

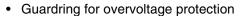
## **Dual Common-Cathode Schottky Rectifier**

High Barrier Technology for Improved High Temperature Performance



PRIMARY CHARACTERISTICS						
I <sub>F(AV)</sub>	40 A					
V <sub>RRM</sub>	35 V to 60 V					
I <sub>FSM</sub>	400 A					
V <sub>F</sub>	0.55 V, 0.60 V					
T <sub>J</sub> max.	175 °C					

#### **FEATURES**





· Lower power losses, high efficiency

· Low forward voltage drop

· High forward surge capability

· High frequency operation

• Solder dip 260 °C, 40 s

· Component in accordance to RoHS 2002/95/EC and WEEE 2002/96/EC

#### **TYPICAL APPLICATIONS**

For use in low voltage, high frequency rectifier of switching mode power supplies, freewheeling diodes, dc-to-dc converters or polarity protection application.

#### **MECHANICAL DATA**

Case: TO-247AD (TO-3P)

Epoxy meets UL 94V-0 flammability rating

Terminals: Matte tin plated leads, solderable per

J-STD-002 and JESD22-B102

E3 suffix for consumer grade, meets JESD 201 class

1A whisker test

Polarity: As marked

Mounting Torque: 10 in-lbs maximum

PARAMETER	SYMBOL	MBR40H35PT	MBR40H45PT	MBR40H50PT	MBR40H60PT	UNIT	
Maximum repetitive peak reverse voltage	V <sub>RRM</sub>	35	45	50	60	V	
Maximum working peak reverse voltage	V <sub>RWM</sub>	35	45	50	60	V	
Maximum DC blocking voltage	$V_{DC}$	35	45	50	60	V	
Maximum average forward rectified current (Fig. 1)	I <sub>F(AV)</sub>	40					
Non-repetitive avalanche energy per diode at 25 $^{\circ}$ C, I <sub>AS</sub> = 4 A, L = 10 mH	E <sub>AS</sub>	80					
Peak forward surge current, 8.3 ms single half sine-wave superimposed on rated load per diode	I <sub>FSM</sub>	400					
Peak repetitive reverse surge current per diode <sup>(1)</sup>	I <sub>RRM</sub>	2.0 1.0			.0	Α	
Peak non-repetitive reverse energy (8/20 µs waveform)	E <sub>RSM</sub>	30 25			5	mJ	
Electrostatic discharge capacitor voltage human body model: C = 100 pF, R = 1.5 $k\Omega$	V <sub>C</sub>	25					
Voltage rate of change at (rated V <sub>R</sub> )	dV/dt	10 000					
Operating junction temperature range	TJ	- 65 to + 175				°C	
Storage temperature range	T <sub>STG</sub>	- 65 to + 175				°C	

#### Note:

(1) 2.0  $\mu$ s pulse width, f = 1.0 kHz

# New Product MBR40H35PT thru MBR40H60PT

## Vishay General Semiconductor



<b>ELECTRICAL CHARACTERISTICS</b> (T <sub>C</sub> = 25 °C unless otherwise noted)									
PARAMETER	TEST CONDITIONS		SYMBOL	MBR40H35PT MBR40H45PT		MBR40H50PT MBR40H60PT		UNIT	
				TYP.	MAX.	TYP.	MAX.		
Maximum instantaneous forward voltage per diode <sup>(1)</sup>	I <sub>F</sub> = 20 A I <sub>F</sub> = 20 A I <sub>F</sub> = 40 A I <sub>F</sub> = 40 A	$T_J = 25 ^{\circ}\text{C}$ $T_J = 125 ^{\circ}\text{C}$ $T_J = 25 ^{\circ}\text{C}$ $T_J = 125 ^{\circ}\text{C}$	V <sub>F</sub>	- 0.49 - 0.62	0.63 0.55 0.73 0.66	- 0.56 - 0.68	0.69 0.60 0.83 0.72	>	
Maximum reverse current at rated V <sub>R</sub> per diode <sup>(2)</sup>		T <sub>J</sub> = 25 °C T <sub>J</sub> = 125 °C	I <sub>R</sub>	- 9.0	150 25	- 6.0	150 25	μA mA	

#### Notes:

(1) Pulse test: 300  $\mu$ s pulse width, 1 % duty cycle

(2) Pulse test: Pulse width ≤ 40 ms

THERMAL CHARACTERISTICS (T <sub>A</sub> = 25 °C unless otherwise noted)							
PARAMETER	SYMBOL	MBR40H35PT   MBR40H45PT   MBR40H50PT   MBR40H60PT					
Thermal resistance, junction to case per diode	$R_{ heta JC}$	1.2			°C/W		

ORDERING INFORMATION (Example)								
PACKAGE	PREFERRED P/N	UNIT WEIGHT (g) PACKAGE CODE BASE QUANTITY DELIVE						
TO-247AD	MBR40H45PT-E3/45	6.13	45	30/tube	Tube			

#### **RATINGS AND CHARACTERISTICS CURVES**

(T<sub>A</sub> = 25 °C unless otherwise noted)

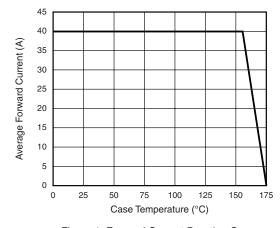


Figure 1. Forward Current Derating Curve

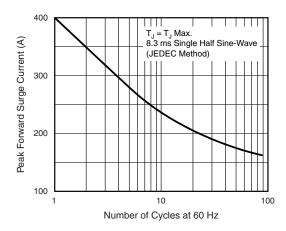


Figure 2. Maximum Non-Repetitive Peak Forward Surge Current Per Diode



## Vishay General Semiconductor

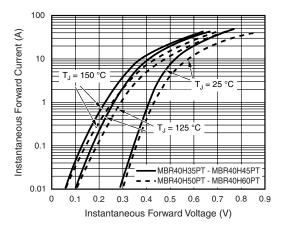


Figure 3. Typical Instantaneous Forward Characteristics Per Diode

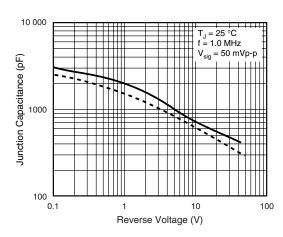


Figure 5. Typical Junction Capacitance Per Diode

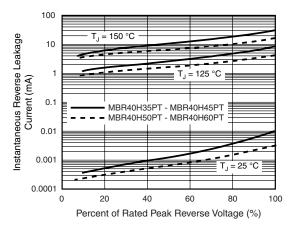


Figure 4. Typical Reverse Characteristics Per Diode

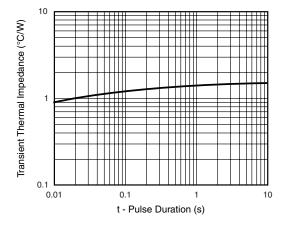
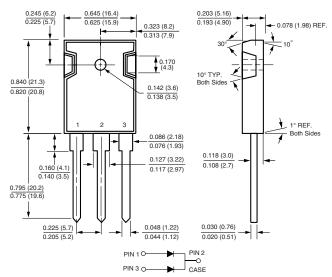


Figure 6. Typical Transient Thermal Impedance Per Diode

#### **PACKAGE OUTLINE DIMENSIONS** in inches (millimeters)

#### TO-247AD (TO-3P)





## **Legal Disclaimer Notice**

Vishay

### **Disclaimer**

ALL PRODUCT, PRODUCT SPECIFICATIONS AND DATA ARE SUBJECT TO CHANGE WITHOUT NOTICE TO IMPROVE RELIABILITY, FUNCTION OR DESIGN OR OTHERWISE.

Vishay Intertechnology, Inc., its affiliates, agents, and employees, and all persons acting on its or their behalf (collectively, "Vishay"), disclaim any and all liability for any errors, inaccuracies or incompleteness contained in any datasheet or in any other disclosure relating to any product.

Vishay makes no warranty, representation or guarantee regarding the suitability of the products for any particular purpose or the continuing production of any product. To the maximum extent permitted by applicable law, Vishay disclaims (i) any and all liability arising out of the application or use of any product, (ii) any and all liability, including without limitation special, consequential or incidental damages, and (iii) any and all implied warranties, including warranties of fitness for particular purpose, non-infringement and merchantability.

Statements regarding the suitability of products for certain types of applications are based on Vishay's knowledge of typical requirements that are often placed on Vishay products in generic applications. Such statements are not binding statements about the suitability of products for a particular application. It is the customer's responsibility to validate that a particular product with the properties described in the product specification is suitable for use in a particular application. Parameters provided in datasheets and/or specifications may vary in different applications and performance may vary over time. All operating parameters, including typical parameters, must be validated for each customer application by the customer's technical experts. Product specifications do not expand or otherwise modify Vishay's terms and conditions of purchase, including but not limited to the warranty expressed therein.

Except as expressly indicated in writing, Vishay products are not designed for use in medical, life-saving, or life-sustaining applications or for any other application in which the failure of the Vishay product could result in personal injury or death. Customers using or selling Vishay products not expressly indicated for use in such applications do so at their own risk and agree to fully indemnify and hold Vishay and its distributors harmless from and against any and all claims, liabilities, expenses and damages arising or resulting in connection with such use or sale, including attorneys fees, even if such claim alleges that Vishay or its distributor was negligent regarding the design or manufacture of the part. Please contact authorized Vishay personnel to obtain written terms and conditions regarding products designed for such applications.

No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted by this document or by any conduct of Vishay. Product names and markings noted herein may be trademarks of their respective owners.

## **Material Category Policy**

Vishay Intertechnology, Inc. hereby certifies that all its products that are identified as RoHS-Compliant fulfill the definitions and restrictions defined under Directive 2011/65/EU of The European Parliament and of the Council of June 8, 2011 on the restriction of the use of certain hazardous substances in electrical and electronic equipment (EEE) - recast, unless otherwise specified as non-compliant.

Please note that some Vishay documentation may still make reference to RoHS Directive 2002/95/EC. We confirm that all the products identified as being compliant to Directive 2002/95/EC conform to Directive 2011/65/EU.

## **ПОСТАВКА** ЭЛЕКТРОННЫХ КОМПОНЕНТОВ

многоканальный

Общество с ограниченной ответственностью «МосЧип» ИНН 7719860671 / КПП 771901001 Адрес: 105318, г.Москва, ул.Щербаковская д.3, офис 1107

## Данный компонент на территории Российской Федерации Вы можете приобрести в компании MosChip.

Для оперативного оформления запроса Вам необходимо перейти по данной ссылке:

#### http://moschip.ru/get-element

Вы можете разместить у нас заказ для любого Вашего проекта, будь то серийное производство или разработка единичного прибора.

В нашем ассортименте представлены ведущие мировые производители активных и пассивных электронных компонентов.

Нашей специализацией является поставка электронной компонентной базы двойного назначения, продукции таких производителей как XILINX, Intel (ex.ALTERA), Vicor, Microchip, Texas Instruments, Analog Devices, Mini-Circuits, Amphenol, Glenair.

Сотрудничество с глобальными дистрибьюторами электронных компонентов, предоставляет возможность заказывать и получать с международных складов практически любой перечень компонентов в оптимальные для Вас сроки.

На всех этапах разработки и производства наши партнеры могут получить квалифицированную поддержку опытных инженеров.

Система менеджмента качества компании отвечает требованиям в соответствии с ГОСТ Р ИСО 9001, ГОСТ РВ 0015-002 и ЭС РД 009

#### Офис по работе с юридическими лицами:

105318, г. Москва, ул. Щербаковская д. 3, офис 1107, 1118, ДЦ «Щербаковский»

Телефон: +7 495 668-12-70 (многоканальный)

Факс: +7 495 668-12-70 (доб.304)

E-mail: info@moschip.ru

Skype отдела продаж:

moschip.ru moschip.ru\_6 moschip.ru 4 moschip.ru 9