

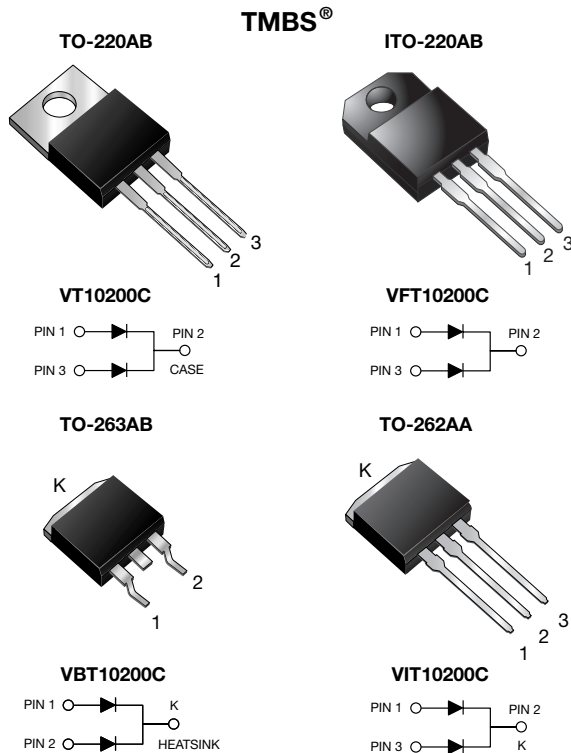


# VT10200C, VFT10200C, VBT10200C, VIT10200C

Vishay General Semiconductor

## Trench MOS Barrier Schottky Rectifier

Ultra Low  $V_F = 0.58\text{ V}$  at  $I_F = 2.5\text{ A}$



### FEATURES

- Trench MOS Schottky technology
- Low forward voltage drop, low power losses
- High efficiency operation
- Meets MSL level 1, per J-STD-020, LF maximum peak of 245 °C (for TO-263AB package)
- Solder dip 275 °C max. 10 s, per JESD 22-B106 (for TO-220AB, ITO-220AB and TO-262AA package)
- Compliant to RoHS directive 2002/95/EC and in accordance to WEEE 2002/96/EC



**RoHS**  
COMPLIANT

### TYPICAL APPLICATIONS

For use in high frequency converters, switching power supplies, freewheeling diodes, OR-ing diode, dc-to-dc converters and reverse battery protection.

### MECHANICAL DATA

**Case:** TO-220AB, ITO-220AB, TO-263AB and TO-262AA  
Molding compound meets UL 94 V-0 flammability rating  
Base P/N-E3 - RoHS compliant, commercial grade

**Terminals:** Matte tin plated leads, solderable per J-STD-002 and JESD 22-B102

E3 suffix meets JESD 201 class 1A whisker test

**Polarity:** As marked

**Mounting Torque:** 10 in-lbs maximum

### PRIMARY CHARACTERISTICS

$I_{F(AV)}$	2 x 5.0 A
$V_{RRM}$	200 V
$I_{FSM}$	80 A
$V_F$ at $I_F = 5.0\text{ A}$	0.65 V
$T_J$ max.	150 °C

### MAXIMUM RATINGS ( $T_A = 25\text{ °C}$ unless otherwise noted)

PARAMETER	SYMBOL	VT10200C	VFT10200C	VBT10200C	VIT10200C	UNIT
Maximum repetitive peak reverse voltage	$V_{RRM}$	200				V
Maximum average forward rectified current (fig. 1)	$I_{F(AV)}$	10.0				A
		5.0				
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load per diode	$I_{FSM}$	80				A
Non-repetitive avalanche energy at $T_J = 25\text{ °C}$ , $L = 60\text{ mH}$ per diode	$E_{AS}$	30				mJ
Peak repetitive reverse current at $t_p = 2\text{ }\mu\text{s}$ , 1 kHz, $T_J = 38\text{ °C} \pm 2\text{ °C}$ per diode	$I_{RRM}$	0.5				A
Voltage rate of change (rated $V_R$ )	$dV/dt$	10 000				V/ $\mu\text{s}$
Isolation voltage (ITO-220AB only) from terminal to heatsink $t = 1\text{ min}$	$V_{AC}$	1500				V
Operating junction and storage temperature range	$T_J, T_{STG}$	- 40 to + 150				°C

# VT10200C, VFT10200C, VBT10200C, VIT10200C

Vishay General Semiconductor



ELECTRICAL CHARACTERISTICS (T <sub>A</sub> = 25 °C unless otherwise noted)						
PARAMETER	TEST CONDITIONS		SYMBOL	TYP.	MAX.	UNIT
Breakdown voltage	I <sub>R</sub> = 1.0 mA	T <sub>A</sub> = 25 °C	V <sub>BR</sub>	200 (minimum)	-	V
Instantaneous forward voltage per diode	I <sub>F</sub> = 2.5 A	T <sub>A</sub> = 25 °C	V <sub>F</sub> <sup>(1)</sup>	0.81	-	V
	I <sub>F</sub> = 5.0 A			1.10	1.60	
	I <sub>F</sub> = 2.5 A	T <sub>A</sub> = 125 °C		0.58	-	
	I <sub>F</sub> = 5.0 A			0.65	0.73	
Reverse current per diode	V <sub>R</sub> = 180 V	T <sub>A</sub> = 25 °C	I <sub>R</sub> <sup>(2)</sup>	1.7	-	μA
		T <sub>A</sub> = 125 °C		1.8	-	mA
	V <sub>R</sub> = 200 V	T <sub>A</sub> = 25 °C		-	150	μA
		T <sub>A</sub> = 125 °C		2.5	10	mA

**Notes**

- (1) Pulse test: 300 μs 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	VT10200C	VFT10200C	VBT10200C	VIT10200C	UNIT	
Typical thermal resistance	per diode	R <sub>θJC</sub>	3.5	7.0	3.5	3.5	°C/W
	per device		2.5	5.5	2.5	2.5	

ORDERING INFORMATION (Example)						
PACKAGE	PREFERRED P/N	UNIT WEIGHT (g)	PACKAGE CODE	BASE QUANTITY	DELIVERY MODE	
TO-220AB	VT10200C-E3/4W	1.88	4W	50/tube	Tube	
ITO-220AB	VFT10200C-E3/4W	1.72	4W	50/tube	Tube	
TO-263AB	VBT10200C-E3/4W	1.37	4W	50/tube	Tube	
TO-263AB	VBT10200C-E3/8W	1.37	8W	800/reel	Tape and reel	
TO-262AA	VIT10200C-E3/4W	1.44	4W	50/tube	Tube	

**RATINGS AND CHARACTERISTICS CURVES**

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

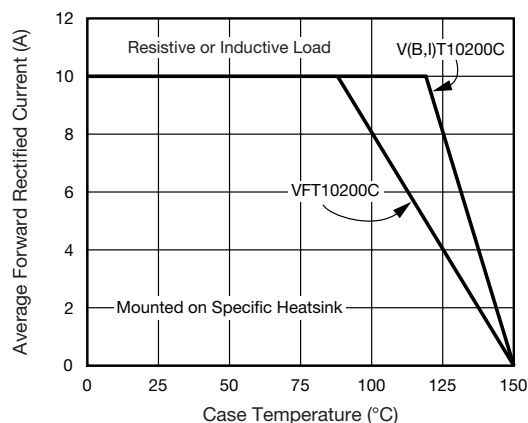


Fig. 1 - Maximum Forward Current Derating Curve

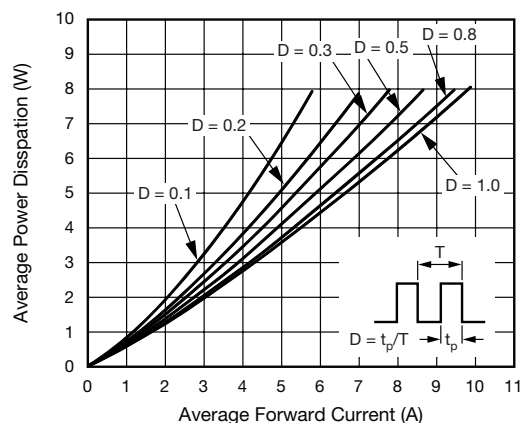


Fig. 2 - Forward Power Loss Characteristics Per Device



# VT10200C, VFT10200C, VBT10200C, VIT10200C

Vishay General Semiconductor

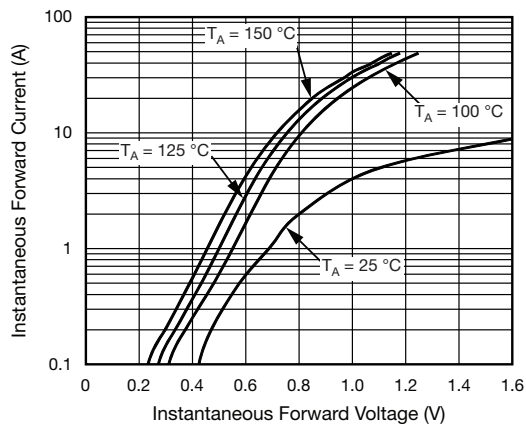


Fig. 3 - Typical Instantaneous Forward Characteristics Per Diode

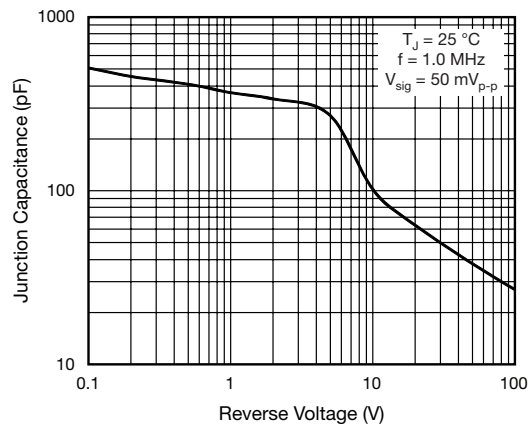


Fig. 5 - Typical Junction Capacitance Per Diode

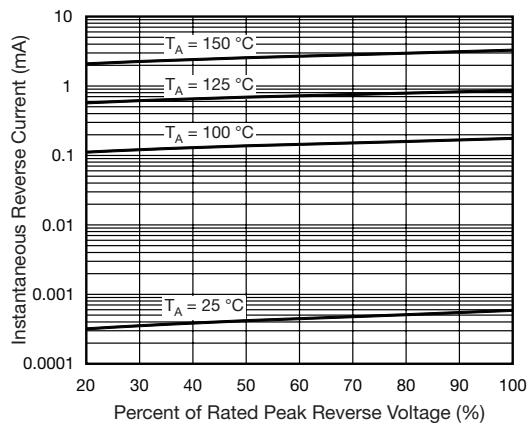


Fig. 4 - Typical Reverse Characteristics Per Diode

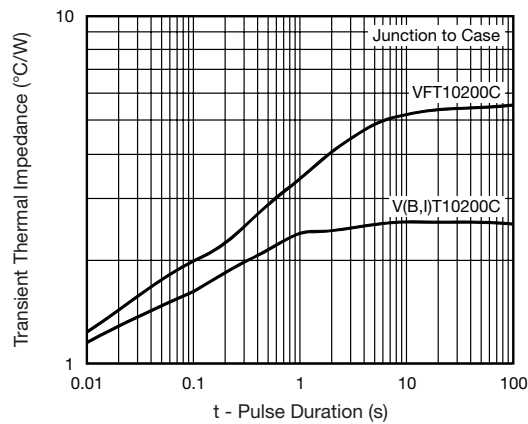


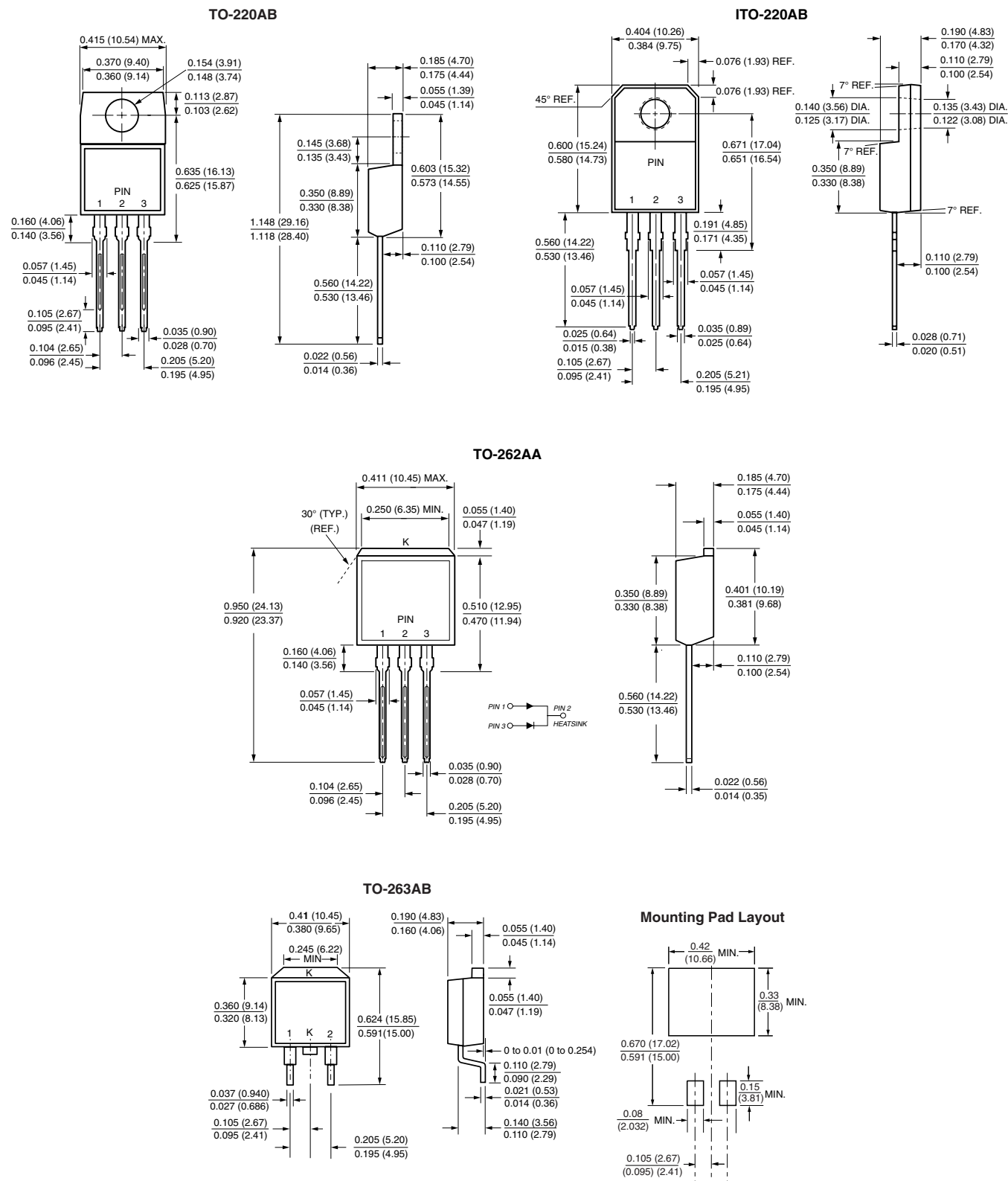
Fig. 6 - Typical Transient Thermal Impedance Per Device

# VT10200C, VFT10200C, VBT10200C, VIT10200C

Vishay General Semiconductor



## PACKAGE OUTLINE DIMENSIONS in inches (millimeters)





## 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. 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.**

**Vishay Intertechnology, Inc. hereby certifies that all its products that are identified as Halogen-Free follow Halogen-Free requirements as per JEDEC JS709A standards. Please note that some Vishay documentation may still make reference to the IEC 61249-2-21 definition. We confirm that all the products identified as being compliant to IEC 61249-2-21 conform to JEDEC JS709A standards.**

## 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](mailto:info@moschip.ru)

Skype отдела продаж:

moschip.ru

moschip.ru\_4

moschip.ru\_6

moschip.ru\_9