VT1060C, VIT1060C

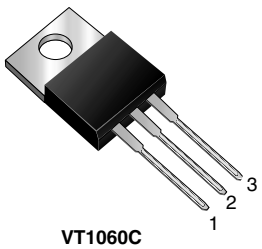
Vishay General Semiconductor

Dual High-Voltage Trench MOS Barrier Schottky Rectifier

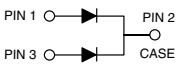
Ultra Low V_F = 0.39 V at I_F = 2.5 A

TMBS®

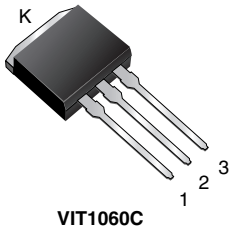
TO-220AB



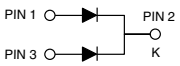
VT1060C



TO-262AA



VIT1060C



PRIMARY CHARACTERISTICS	
$I_{F(AV)}$	2 x 5.0 A
V_{RRM}	60 V
I_{FSM}	100 A
V_F at I_F = 5.0 A	0.50 V
T_J max.	150 °C

FEATURES

- Trench MOS Schottky technology
- Low forward voltage drop, low power losses
- High efficiency operation
- Solder bath temperature 275 °C max. 10 s, per JESD 22-B106
- AEC-Q101 qualified
- Compliant to RoHS Directive 2002/95/EC and in accordance to WEEE 2002/96/EC
- **Halogen-free according to IEC 61249-2-21 definition**

RoHS COMPLIANT
HALOGEN FREE

TYPICAL APPLICATIONS

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

MECHANICAL DATA

Case: TO-220AB and TO-262AA
Molding compound meets UL 94 V-0 flammability rating
Base P/N-M3 - halogen-free, RoHS compliant, and commercial grade
Base P/NHM3 - halogen-free, RoHS compliant, and AEC-Q101 qualified

Terminals: Matte tin plated leads, solderable per J-STD-002 and JESD 22-B102
M3 suffix meets JESD 201 class 1A whisker test, HM3 suffix meets JESD 201 class 2 whisker test

Polarity: As marked

Mounting Torque: 10 in-lbs maximum

MAXIMUM RATINGS (T_A = 25 °C unless otherwise noted)

PARAMETER		SYMBOL	VT1060C	VIT1060C	UNIT
Maximum repetitive peak reverse voltage		V_{RRM}	60		V
Maximum average forward rectified current (fig. 1)	per device	$I_{F(AV)}$	10		A
	per diode		5		
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load		I_{FSM}	100		A
Voltage rate of change (rated V_R)		dV/dt	10 000		V/µs
Operating junction and storage temperature range		T_J, T_{STG}	- 55 to + 150		°C

For technical questions within your region, please contact one of the following:
DiodesAmericas@vishay.com, DiodesAsia@vishay.com, DiodesEurope@vishay.com

This datasheet is subject to change without notice.
THE PRODUCT DESCRIBED HEREIN AND THIS DATASHEET ARE SUBJECT TO SPECIFIC DISCLAIMERS, SET FORTH AT www.vishay.com/doc?91000

ELECTRICAL CHARACTERISTICS (T_A = 25 °C unless otherwise noted)						
PARAMETER	**TEST CONDITIONS**		**SYMBOL**	**TYP.**	**MAX.**	**UNIT**
Instantaneous forward voltage per diode	I_F = 2.5 A	T_A = 25 °C	V_F (1)	0.49	-	V
	I_F = 5.0 A			0.58	0.70	
	I_F = 2.5 A	T_A = 125 °C		0.39	-	
	I_F = 5.0 A			0.50	0.60	
Reverse current per diode	V_R = 60 V	T_A = 25 °C	I_R (2)	-	700	µA
		T_A = 125 °C		6.6	25	mA

Notes

(1) Pulse test: 300 µs pulse width, 1 % duty cycle

(2) Pulse test: Pulse width ≤ 40 ms

THERMAL CHARACTERISTICS (T_A = 25 °C unless otherwise noted)					
PARAMETER		**SYMBOL**	**VT1060C**	**VIT1060C**	**UNIT**
Typical thermal resistance	per diode	$R_{\theta JC}$	3.5		°C/W
	per device		2.5		

ORDERING INFORMATION (Example)					
PACKAGE	**PREFERRED P/N**	**UNIT WEIGHT (g)**	**PACKAGE CODE**	**BASE QUANTITY**	**DELIVERY MODE**
TO-220AB	VT1060C-M3/4W	1.87	4W	50/tube	Tube
TO-262AA	VIT1060C-M3/4W	1.45	4W	50/tube	Tube
TO-220AB	VT1060CHM3/4W (1)	1.87	4W	50/tube	Tube
TO-262AA	VIT1060CHM3/4W (1)	1.45	4W	50/tube	Tube

Note

(1) AEC-Q101 qualified

RATINGS AND CHARACTERISTICS CURVES

(T_A = 25 °C unless otherwise noted)

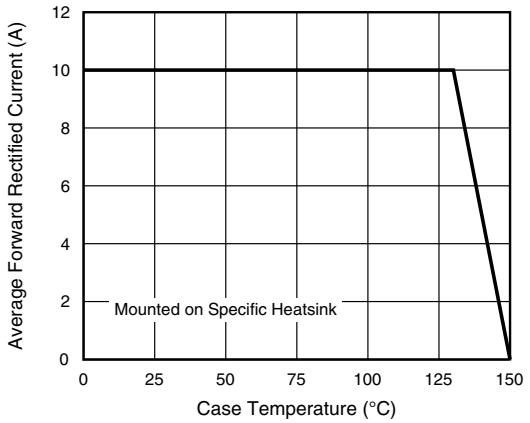


Fig. 1 - Maximum Forward Current Derating Curve

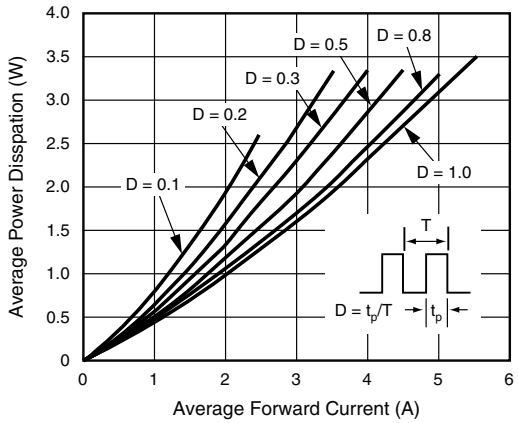


Fig. 2 - Forward Power Dissipation Characteristics

For technical questions within your region, please contact one of the following:
DiodesAmericas@vishay.com, DiodesAsia@vishay.com, DiodesEurope@vishay.com

Document Number: 89232
Revision: 23-Mar-11

This datasheet is subject to change without notice.
THE PRODUCT DESCRIBED HEREIN AND THIS DATASHEET ARE SUBJECT TO SPECIFIC DISCLAIMERS, SET FORTH AT www.vishay.com/doc?91000

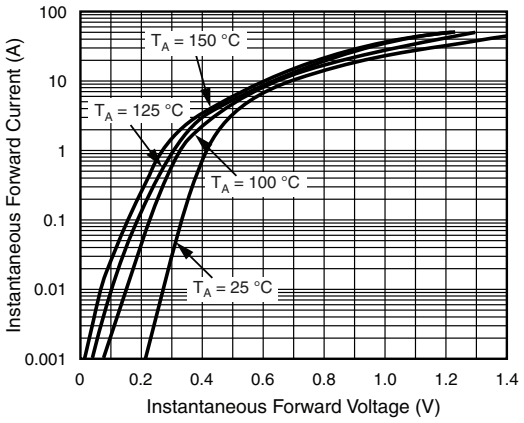


Fig. 3 - Typical Instantaneous Forward Characteristics

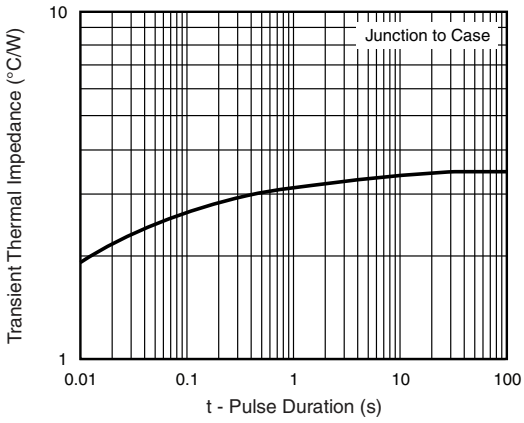


Fig. 5 - Typical Transient Thermal Impedance

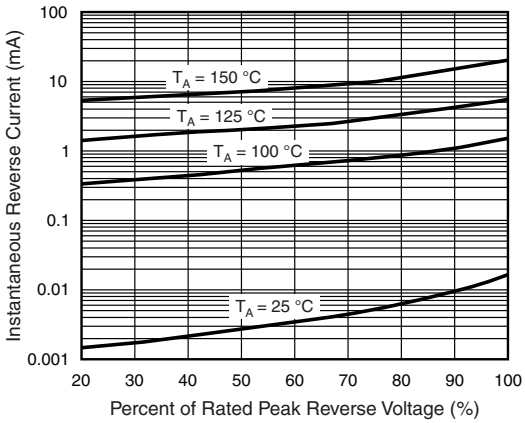


Fig. 4 - Typical Reverse Characteristics

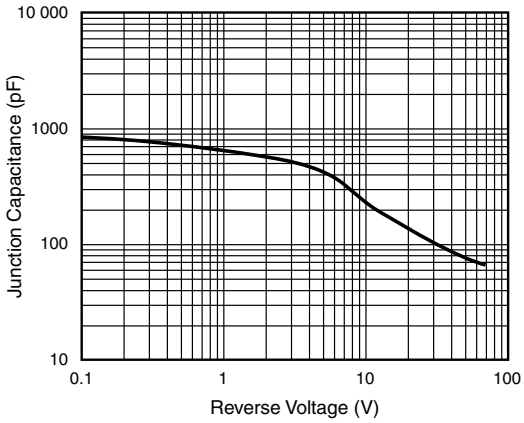
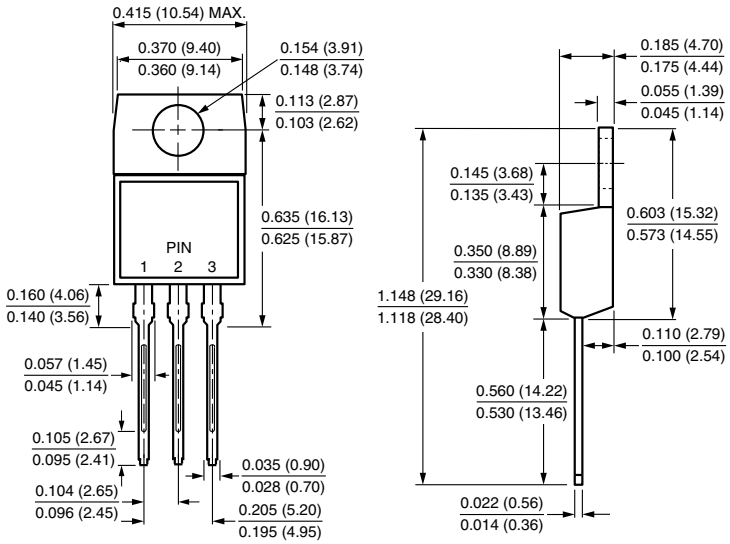


Fig. 6 - Typical Junction Capacitance

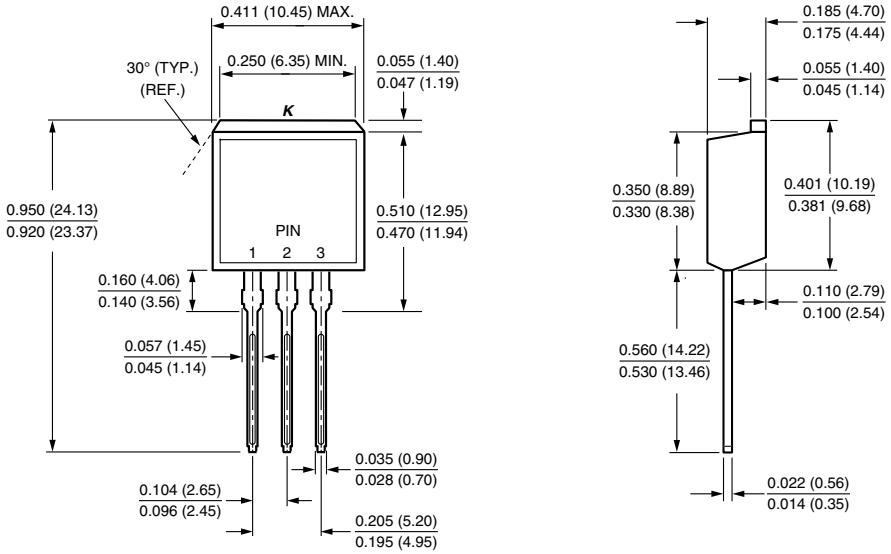
This datasheet is subject to change without notice.
THE PRODUCT DESCRIBED HEREIN AND THIS DATASHEET ARE SUBJECT TO SPECIFIC DISCLAIMERS, SET FORTH AT www.vishay.com/doc?91000

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

TO-220AB



TO-262AA



For technical questions within your region, please contact one of the following:
DiodesAmericas@vishay.com, DiodesAsia@vishay.com, DiodesEurope@vishay.com

Document Number: 89232
Revision: 23-Mar-11

This datasheet is subject to change without notice.
THE PRODUCT DESCRIBED HEREIN AND THIS DATASHEET ARE SUBJECT TO SPECIFIC DISCLAIMERS, SET FORTH AT www.vishay.com/doc?91000

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.