

ANTREX Electronics

Electronic Components Sourcing Information

Product Reference Information

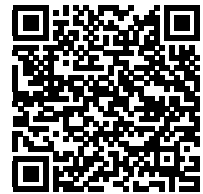
Part Number: V10D202C-M3/I
Manufacturer: Vishay General Semiconductor - Diodes Division
Package: Tape & Reel (TR), Cut Tape (CT)
Availability: Please confirm with sales

Product Page:

<https://antrexco.com/product/details/vishay-general-semiconductor-diodes-division/v10d202c-m3-i.html>

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Contact Information

Email: info@antrexco.com

WhatsApp: +86-186-8066-5326

Website: <https://antrexco.com>

Quality & Trust

New & Original Components

Supplier verification and packaging condition review

CoC / RoHS / REACH documents available on request

Secure sourcing support for OEM / EMS projects

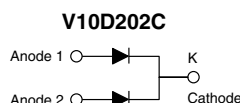
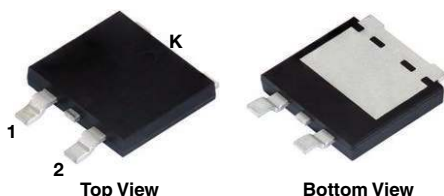
Note:

This PDF includes an ANTREX product reference cover page.

The original manufacturer datasheet follows from the next page.

Dual High-Voltage TMBS® (Trench MOS Barrier Schottky) Rectifier

eSMP® Series SMPD (TO-263AC)



LINKS TO ADDITIONAL RESOURCES



FEATURES

- Trench MOS Schottky technology generation 2
- Very low profile - typical height of 1.7 mm
- Ideal for automated placement
- Low forward voltage drop, low power losses
- High efficiency operation
- Meets MSL level 1, per J-STD-020, LF maximum peak of 260 °C
- AEC-Q101 qualified available:
 - Automotive ordering code: base P/NHM3
- Material categorization: for definitions of compliance please see www.vishay.com/doc299912



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: SMPD (TO-263AC)

Molding compound meets UL 94 V-0 flammability rating

Base P/N-M3 - halogen-free, RoHS-compliant

Base P/NHM3_X - halogen-free, RoHS-compliant, and

AEC-Q101 qualified

("_X" denotes revision code e.g. A, B,...) qualified

(X denotes revision code e.g. A, B, ...)

Terminals: matte tin plated leads, solderable per

J-STD-002 and JESD 22-B102

M3 and HM3 suffix meets JESD 201 class 2 whisker test

Polarity: As marked

PRIMARY CHARACTERISTICS	
$I_{F(AV)}$	2 x 5 A
V_{RRM}	200 V
I_{FSM}	100 A
V_F at $I_F = 5.0$ A ($T_A = 125$ °C)	0.67 V
T_J max.	175 °C
Package	SMPD (TO-263AC)
Circuit configuration	Common cathode

MAXIMUM RATINGS ($T_A = 25$ °C unless otherwise noted)			
PARAMETER	SYMBOL	V10D202C	UNIT
Maximum repetitive peak reverse voltage	V_{RRM}	200	V
Maximum average forward rectified current (fig. 1)	$I_{F(AV)}$	10	A
		5	
Maximum DC reverse voltage	V_{DC}	160	V
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/ μ s
Operating junction and storage temperature range	T_J, T_{STG}	-40 to +175	°C

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⁾	0.75	-	V
	I _F = 5 A			0.82	0.9	
	I _F = 2.5 A	T _A = 125 °C		0.6	-	
	I _F = 5 A			0.67	0.74	
Reverse current at rated V _R per diode	V _R = 160 V	T _A = 25 °C	I _R ⁽²⁾	0.4	-	μA
		T _A = 125 °C		0.5	-	mA
	V _R = 200 V	T _A = 25 °C		-	50	μA
		T _A = 125 °C		1.3	5	mA

Notes

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

(2) Pulse test: Pulse width $\leq 5\text{ ms}$

THERMAL CHARACTERISTICS ($T_A = 25\text{ }^{\circ}\text{C}$ unless otherwise noted)			
PARAMETER		SYMBOL	UNIT
Typical thermal resistance	per diode	$R_{\theta JC}$	$^{\circ}\text{C/W}$
	per device		
	per device	$R_{\theta JA}^{(1)(2)}$	
			V10D202C
			3.5
			2.5
			58

Notes

(1) The heat generated must be less than the thermal conductivity from junction-to-ambient: $dP_D/dT_J < 1/R_{\theta JA}$ - junction-to -mount

(2) Free air, without heatsink

ORDERING INFORMATION (Example)				
PREFERRED P/N	UNIT WEIGHT (g)	PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
V10D202C-M3/I	0.55	I	2000/reel	13" diameter plastic tape and reel
V10D202CHM3_B/I ⁽¹⁾	0.55	I	2000/reel	13" diameter plastic tape and reel

Note

(1) AEC-Q101 qualified

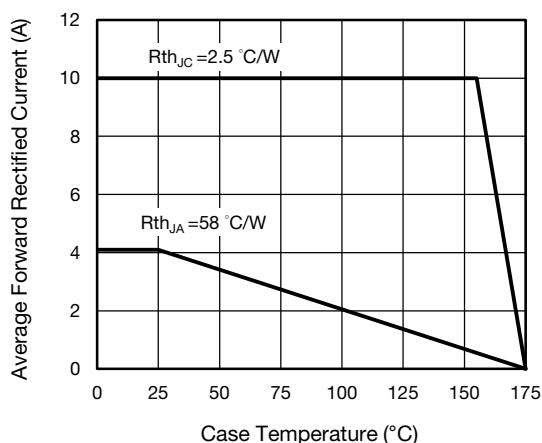
RATINGS AND CHARACTERISTICS CURVES ($T_A = 25\text{ }^{\circ}\text{C}$ unless otherwise noted)


Fig. 1 - Forward Current Derating Curve

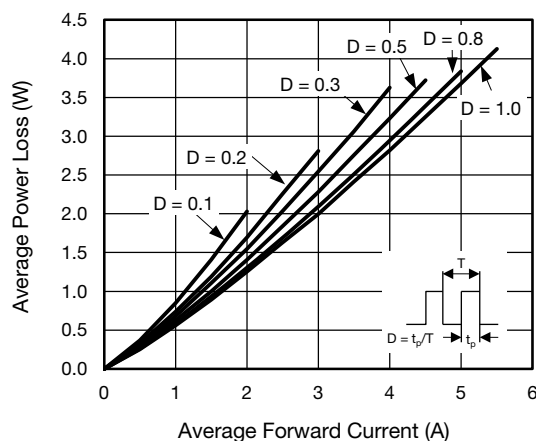


Fig. 2 - Forward Power Loss Characteristics

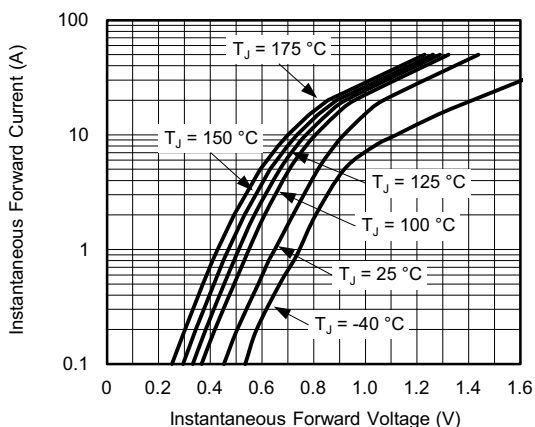


Fig. 3 - Typical Instantaneous Forward Characteristics

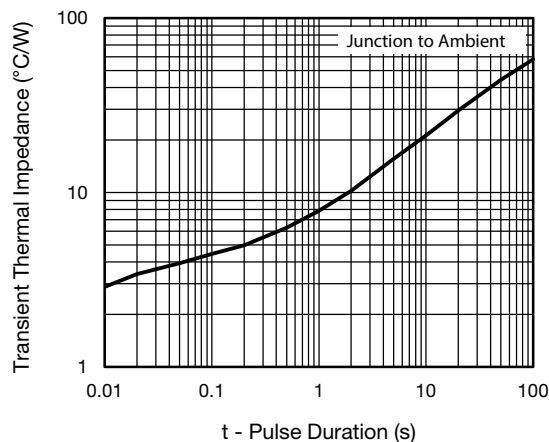


Fig. 6 - Typical Transient Thermal Impedance

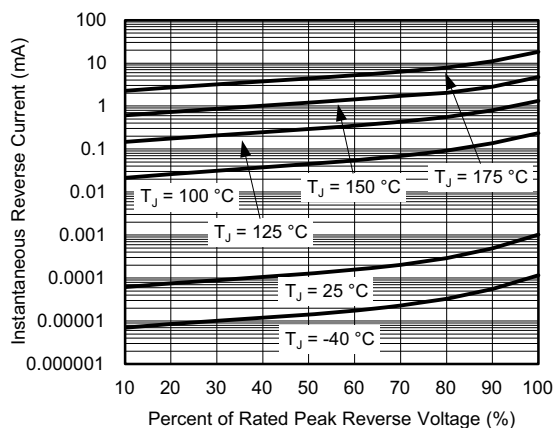


Fig. 4 - Typical Reverse Characteristics

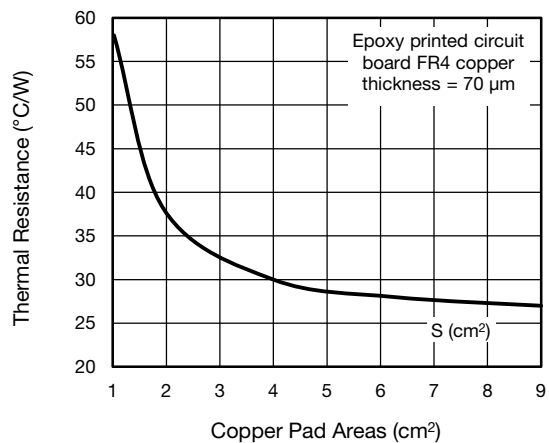


Fig. 7 - Thermal Resistance Junction-to-Ambient vs. Copper Pad Areas

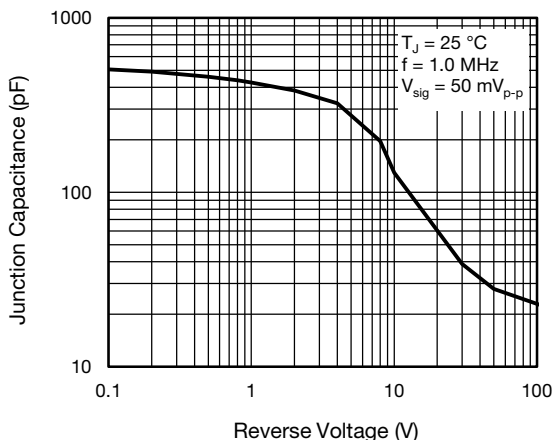
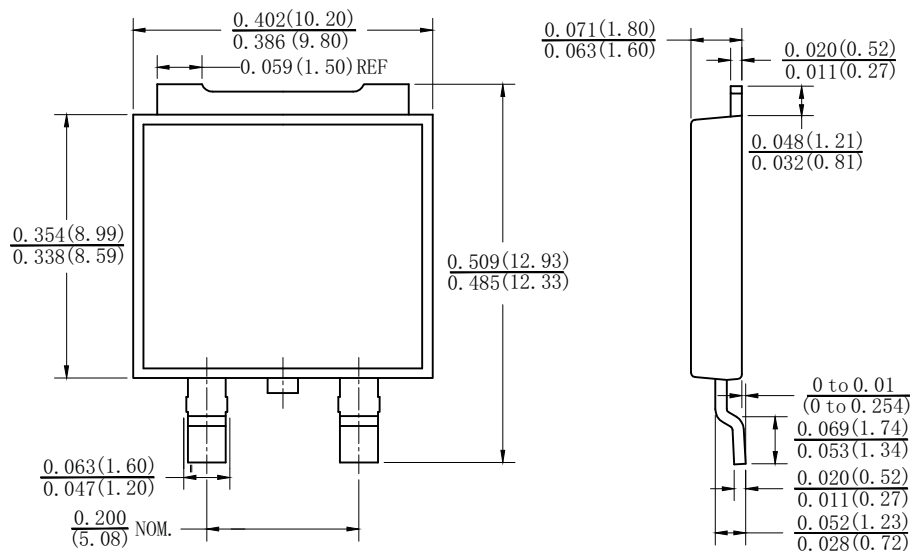
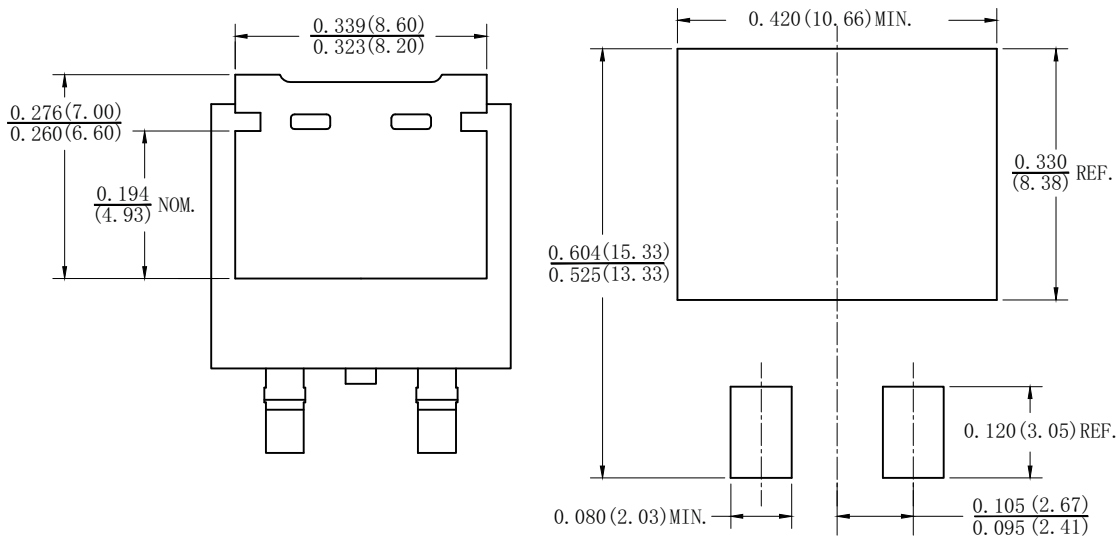


Fig. 5 - Typical Junction Capacitance

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

SMPD (TO-263AC)

Mounting Pad Layout




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