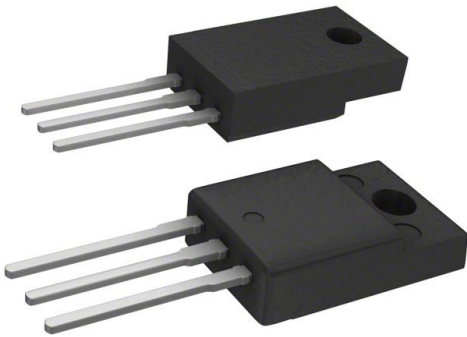


# VF20200G-E3/4W Datasheet

[www.digi-electronics.com](http://www.digi-electronics.com)



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DiGi Electronics Part Number	VF20200G-E3/4W-DG
Manufacturer	<a href="#">Vishay General Semiconductor - Diodes Division</a>
Manufacturer Product Number	VF20200G-E3/4W
Description	DIODE ARR SCHOTT 200V ITO220AB
Detailed Description	Diode Array 1 Pair Common Cathode 200 V 10A Through Hole TO-220-3 Full Pack, Isolated Tab

This model VF20200G-E3/4W is available at DiGi Electronics.

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## Purchase and inquiry

Manufacturer Product Number:

VF20200G-E3/4W

Series:

TMBS®

Diode Configuration:

1 Pair Common Cathode

Voltage - DC Reverse (Vr) (Max):

200 V

Voltage - Forward (Vf) (Max) @ If:

1.7 V @ 10 A

Current - Reverse Leakage @ Vr:

150 µA @ 200 V

Mounting Type:

Through Hole

Supplier Device Package:

ITO-220AB

Manufacturer:

Vishay General Semiconductor - Diodes Division

Product Status:

Active

Technology:

Schottky

Current - Average Rectified (Io) (per Diode):

10A

Speed:

Fast Recovery =< 500ns, > 200mA (Io)

Operating Temperature - Junction:

-40°C ~ 150°C

Package / Case:

TO-220-3 Full Pack, Isolated Tab

Base Product Number:

VF20200

## Environmental & Export classification

RoHS Status:

ROHS3 Compliant

REACH Status:

REACH Unaffected

HTSUS:

8541.10.0080

Moisture Sensitivity Level (MSL):

1 (Unlimited)

ECCN:

EAR99



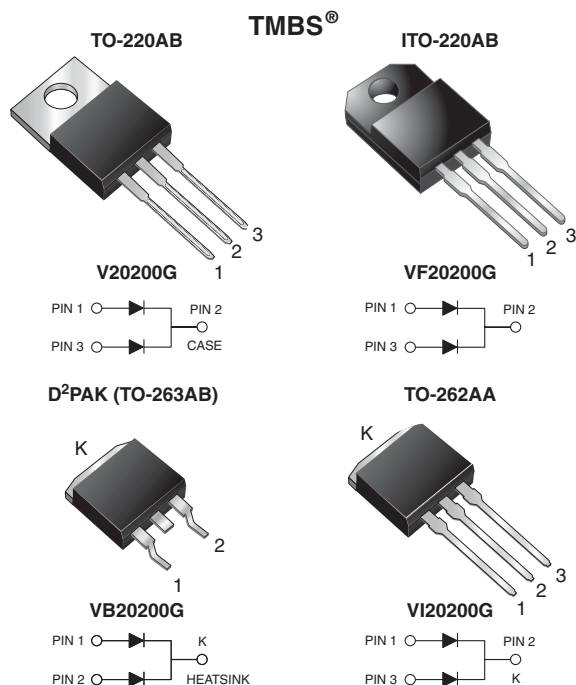
# V20200G-E3, VF20200G-E3, VB20200G-E3, VI20200G-E3

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Vishay General Semiconductor

## Dual High Voltage Trench MOS Barrier Schottky Rectifier

Ultra Low  $V_F = 0.62$  V at  $I_F = 5$  A



### DESIGN SUPPORT TOOLS

[click logo to get started](#)

**3D**  
Models  
Available

PRIMARY CHARACTERISTICS	
$I_{F(AV)}$	2 x 10 A
$V_{RRM}$	200 V
$I_{FSM}$	110 A
$V_F$ at $I_F = 10$ A	0.71 V
$T_J$ max.	150 °C
Package	TO-220AB, ITO-220AB, D <sup>2</sup> PAK (TO-263AB), TO-262AA
Circuit configuration	Common cathode

MAXIMUM RATINGS ( $T_A = 25$ °C unless otherwise noted)						
PARAMETER	SYMBOL	V20200G	VF20200G	VB20200G	VI20200G	UNIT
Max. repetitive peak reverse voltage	$V_{RRM}$		200			V
Max. average forward rectified current (fig. 1)	$I_{F(AV)}$	per device		20		A
		per diode		10		
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load per diode	$I_{FSM}$			110		A
Non-repetitive avalanche energy at $T_J = 25$ °C, $L = 60$ mH per diode	$E_{AS}$			60		mJ
Peak repetitive reverse current at $t_p = 2$ $\mu$ s, 1 kHz, $T_J = 38$ °C $\pm$ 2 °C per diode	$I_{RRM}$			0.5		A
Voltage rate of change (rated $V_R$ )	dV/dt			10 000		V/ $\mu$ s
Isolation voltage (ITO-220AB only) from terminal to heatsink $t = 1$ min	$V_{AC}$			1500		V
Operating junction and storage temperature range	$T_J, T_{STG}$			-40 to +150		°C

### FEATURES

- Trench MOS Schottky technology
- Low forward voltage drop, low power losses
- High efficiency operation
- Low thermal resistance
- Meets MSL level 1, per J-STD-020, LF maximum peak of 245 °C (for TO-263AB package)
- Solder bath temperature 275 °C maximum, 10 s, per JESD 22-B106 (for TO-220AB, ITO-220AB and TO-262AA package)
- Material categorization: for definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)



**RoHS**  
COMPLIANT

### TYPICAL APPLICATIONS

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

### MECHANICAL DATA

**Case:** TO-220AB, ITO-220AB, D<sup>2</sup>PAK (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 max.



# V20200G-E3, VF20200G-E3, VB20200G-E3, VI20200G-E3

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<b>ELECTRICAL CHARACTERISTICS</b> ( $T_A = 25\text{ }^\circ\text{C}$ unless otherwise noted)						
PARAMETER	TEST CONDITIONS		SYMBOL	TYP.	MAX.	UNIT
Breakdown voltage	$I_R = 1.0\text{ mA}$	$T_J = 25\text{ }^\circ\text{C}$	$V_{BR}$	200 (min.)	-	V
Instantaneous forward voltage per diode <sup>(1)</sup>	$I_F = 5\text{ A}$	$T_J = 25\text{ }^\circ\text{C}$	$V_F$	0.86	-	V
				$I_F = 10\text{ A}$	1.23	
	$I_F = 5\text{ A}$	$T_J = 125\text{ }^\circ\text{C}$		0.62	-	
				$I_F = 10\text{ A}$	0.71	
Reverse current per diode <sup>(2)</sup>	$V_R = 180\text{ V}$	$T_J = 25\text{ }^\circ\text{C}$	$I_R$	1.9	-	$\mu\text{A}$
		$T_J = 125\text{ }^\circ\text{C}$		1.6	-	mA
	$V_R = 200\text{ V}$	$T_J = 25\text{ }^\circ\text{C}$		-	150	$\mu\text{A}$
		$T_J = 125\text{ }^\circ\text{C}$		2.5	15	mA

**Notes**(1) Pulse test: 300  $\mu\text{s}$  pulse width, 1 % duty cycle(2) Pulse test: Pulse width  $\leq 40\text{ ms}$ 

<b>THERMAL CHARACTERISTICS</b> ( $T_A = 25\text{ }^\circ\text{C}$ unless otherwise noted)						
PARAMETER	SYMBOL	V20200G	VF20200G	VB20200G	VI20200G	UNIT
Typical thermal resistance per diode	$R_{\theta JC}$	3.2	5.5	3.2	3.2	$^\circ\text{C/W}$

<b>ORDERING INFORMATION (EXAMPLE)</b>						
PACKAGE	PREFERRED P/N	UNIT WEIGHT (g)	PACKAGE CODE	BASE QUANTITY	DELIVERY MODE	
TO-220AB	V20200G-E3/4W	1.88	4W	50/tube	Tube	
ITO-220AB	VF20200G-E3/4W	1.75	4W	50/tube	Tube	
TO-263AB	VB20200G-E3/4W	1.39	4W	50/tube	Tube	
TO-263AB	VB20200G-E3/8W	1.39	8W	800/reel	Tape and reel	
TO-262AA	VI20200G-E3/4W	1.45	4W	50/tube	Tube	

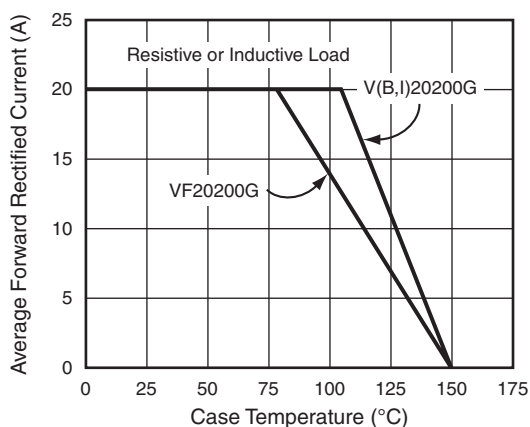
**RATINGS AND CHARACTERISTICS CURVES** ( $T_A = 25\text{ }^\circ\text{C}$  unless otherwise noted)

Fig. 1 - Maximum Forward Current Derating Curve

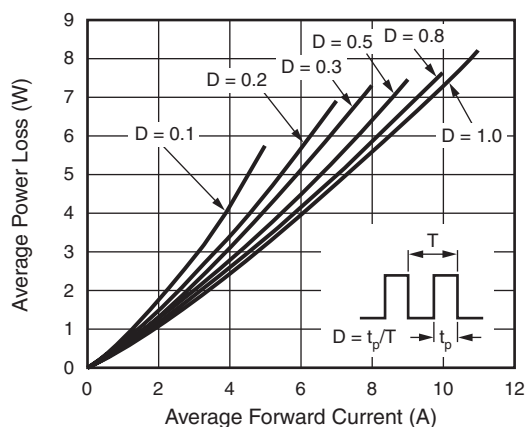


Fig. 2 - Forward Power Loss Characteristics Per Diode



# V20200G-E3, VF20200G-E3, VB20200G-E3, VI20200G-E3

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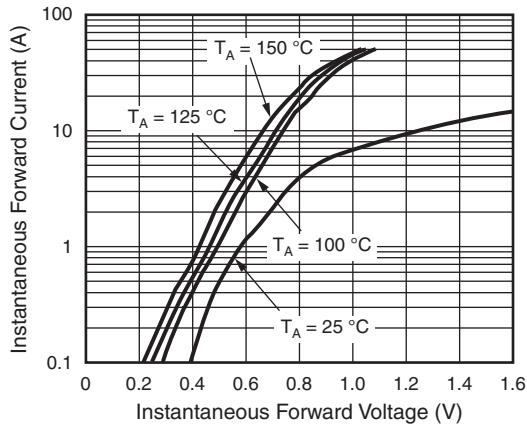


Fig. 3 - Typical Instantaneous Forward Characteristics Per Diode

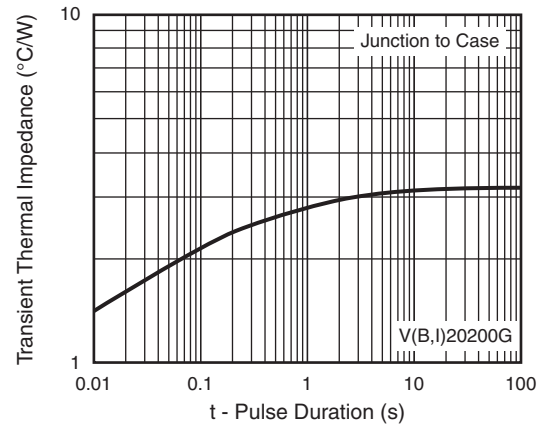


Fig. 6 - Typical Transient Thermal Impedance Per Diode

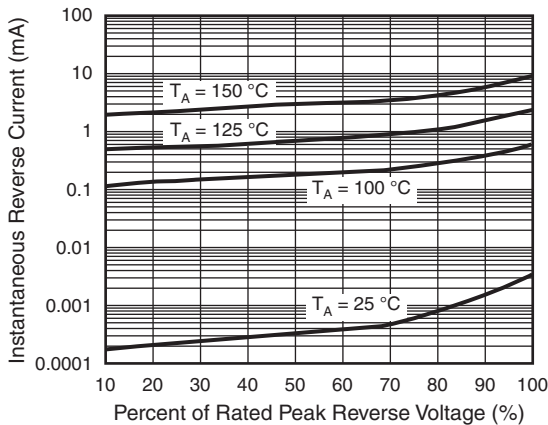


Fig. 4 - Typical Reverse Characteristics Per Diode

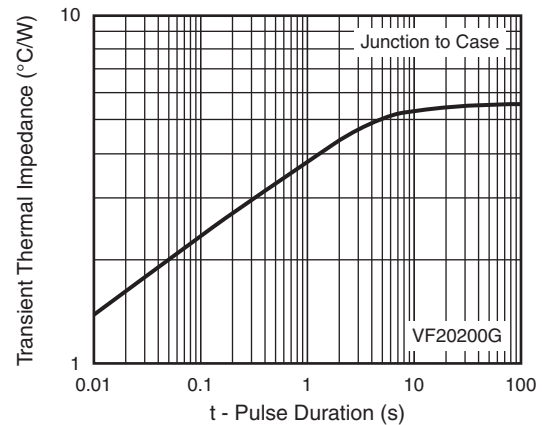


Fig. 7 - Typical Transient Thermal Impedance Per Diode

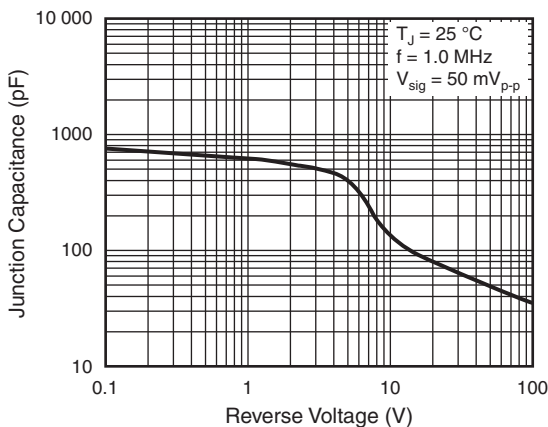


Fig. 5 - Typical Junction Capacitance Per Diode



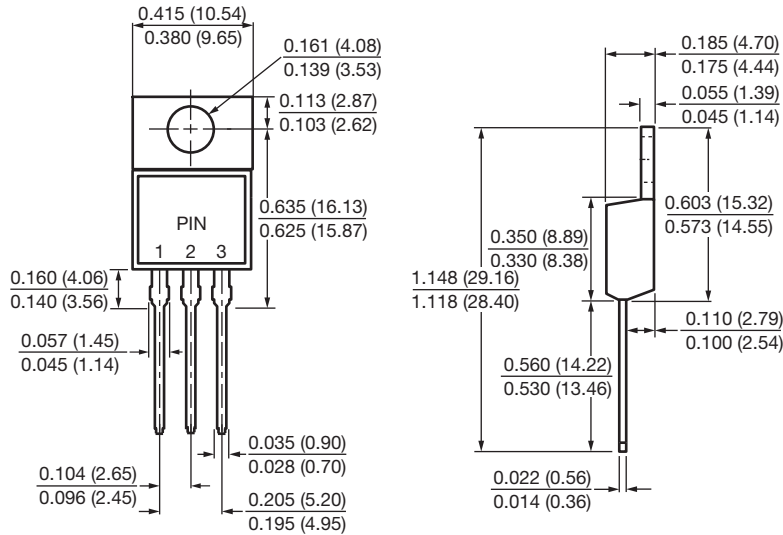
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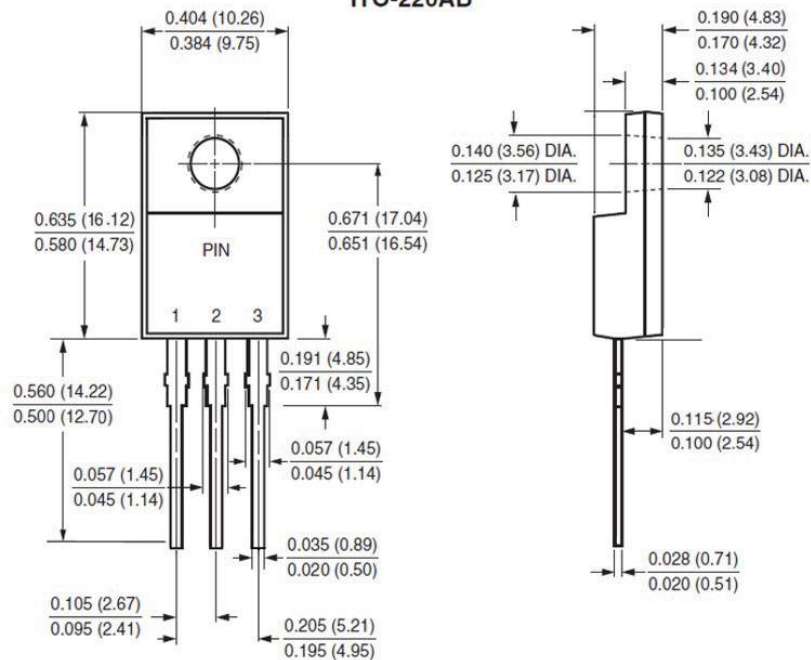
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## PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

### TO-220AB



### ITO-220AB



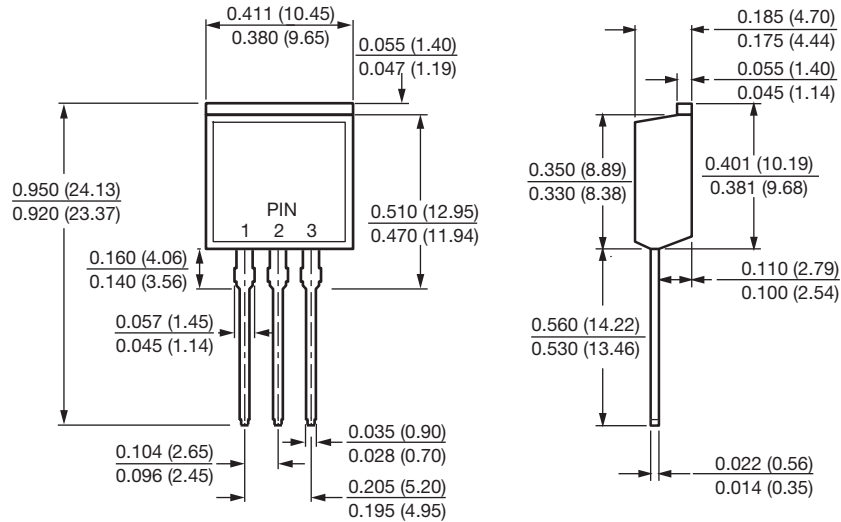


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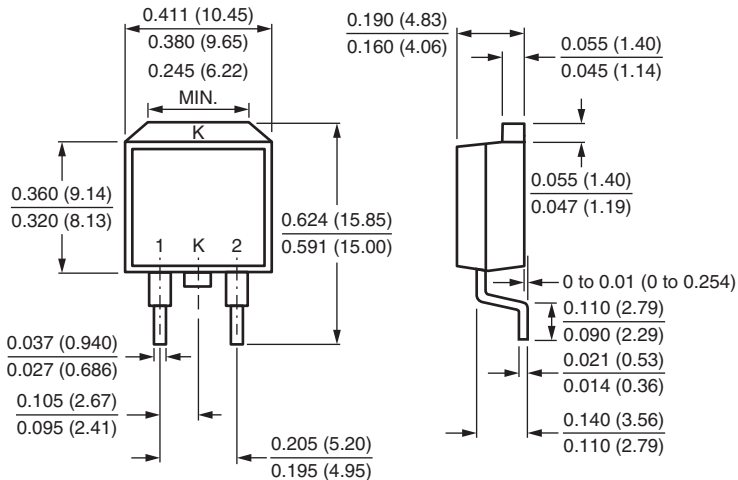
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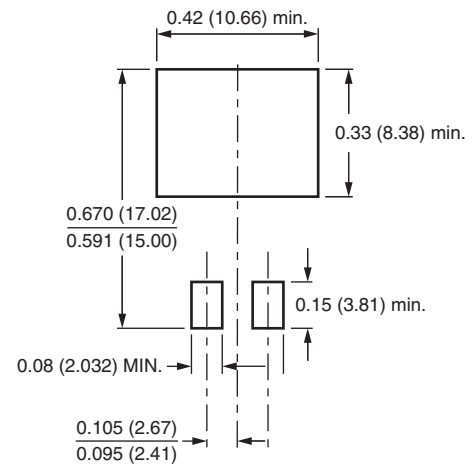
## TO-262AA



## D<sup>2</sup>PAK (TO-263AB)



## Mounting Pad Layout





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