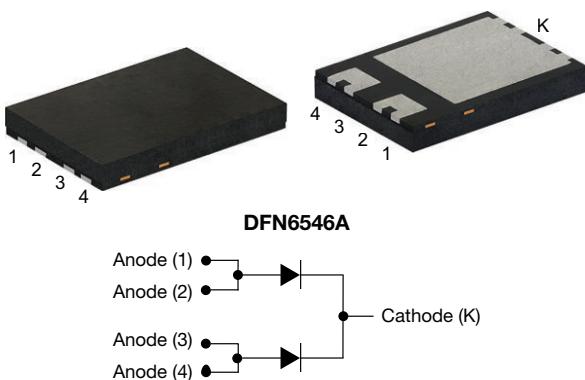


High Current Density Surface-Mount TMBS® (Trench MOS Barrier Schottky) Rectifier

Ultra Low V_F = 0.61 V at I_F = 5 A



LINKS TO ADDITIONAL RESOURCES



PRIMARY CHARACTERISTICS	
$I_F(AV)$	2 x 7.5 A
V_{RRM}	200 V
I_{FSM}	160 A
V_F at I_F = 7.5 A (T_J = 125 °C)	0.66 V
T_J max.	150 °C
Package	DFN6546A
Circuit configuration	Common cathode

FEATURES

- Low profile package - typical height of 0.88 mm
- Leadless DFN package with side-wettable flanks suitable for customer AOI (Automatic Optical Inspection)
- Low power losses, high efficiency
- Compatible to SMPC (TO-277A) package case outline
- 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/doc?99912



RoHS
COMPLIANT
HALOGEN
FREE

TYPICAL APPLICATIONS

For use in low voltage high frequency inverters, freewheeling, DC/DC converters, and polarity protection applications.

MECHANICAL DATA

Case: DFN6546A

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 and HM3 suffix meets JESD 201 class 2 whisker test

MAXIMUM RATINGS (T_A = 25 °C unless otherwise noted)			
PARAMETER	SYMBOL	V15N6202	UNIT
Device marking code		V1522	
Maximum repetitive peak reverse voltage	V_{RRM}	200	V
Maximum average forward rectified current (fig. 1)	$I_F(AV)$ (1)	15	A
per device		7.5	
per diode			
Peak forward surge current 10 ms single sine-wave on rated load per diode	I_{FSM}	160	A
Operating junction temperature range	T_J (2)	-40 to +150	°C
Storage temperature range	T_{STG}	-55 to +150	°C

Notes

(1) With infinite heatsink

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

ELECTRICAL CHARACTERISTICS ($T_J = 25^\circ\text{C}$ unless otherwise noted)							
PARAMETER	TEST CONDITIONS		SYMBOL	TYP.	MAX.	UNIT	
Instantaneous forward voltage per diode	$I_F = 5 \text{ A}$	$T_J = 25^\circ\text{C}$	$V_F^{(1)}$	0.76	-	V	
	$I_F = 7.5 \text{ A}$			0.80	0.93		
	$I_F = 5 \text{ A}$	$T_J = 125^\circ\text{C}$		0.61	-		
	$I_F = 7.5 \text{ A}$			0.66	0.79		
Reverse current per diode	$V_R = 160 \text{ V}$	$T_J = 25^\circ\text{C}$	$I_R^{(2)}$	0.0006	-	mA	
		$T_J = 125^\circ\text{C}$		0.7	-		
	$V_R = 200 \text{ V}$	$T_J = 25^\circ\text{C}$		-	0.1		
		$T_J = 125^\circ\text{C}$		1.5	7		
Typical junction capacitance per diode	4.0 V, 1 MHz		C_J	470	-	pF	

Notes

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

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

THERMAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ unless otherwise noted)					
PARAMETER	SYMBOL	TYP.	MAX.	UNIT	
Thermal resistance per device	$R_{\theta JM}^{(1)}$	2	2.5	$^\circ\text{C/W}$	

Note

(1) Thermal resistance junction to mount follows JEDEC® 51-14 transient dual interface test method (TDIM)

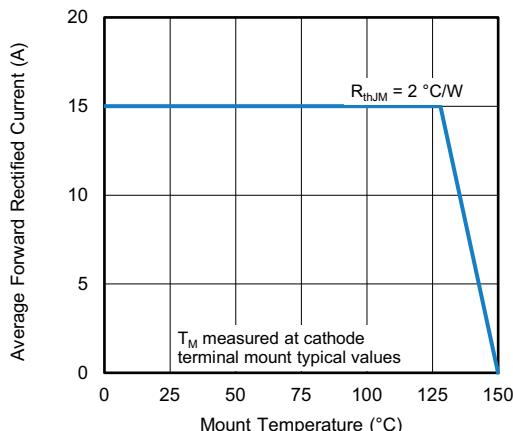
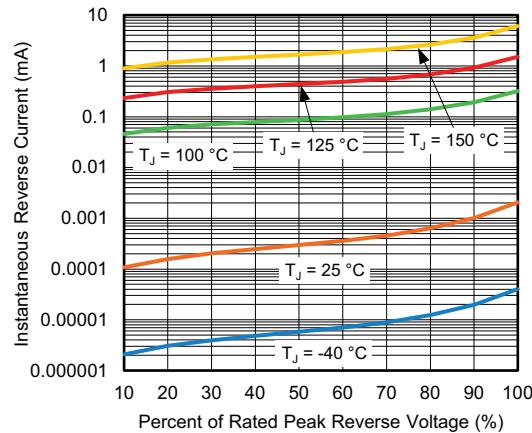
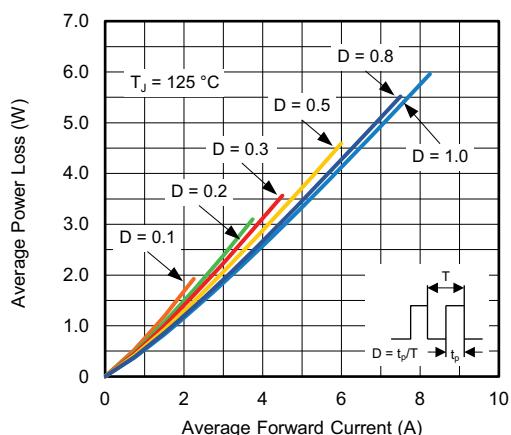
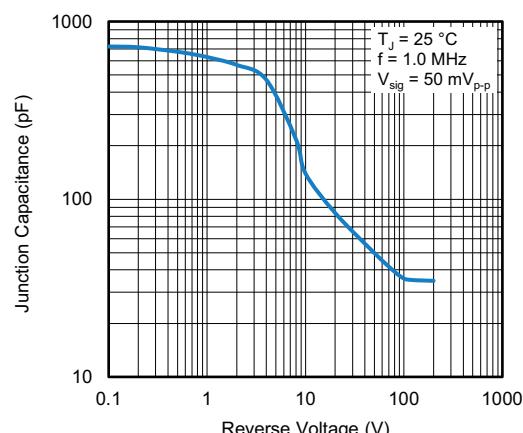
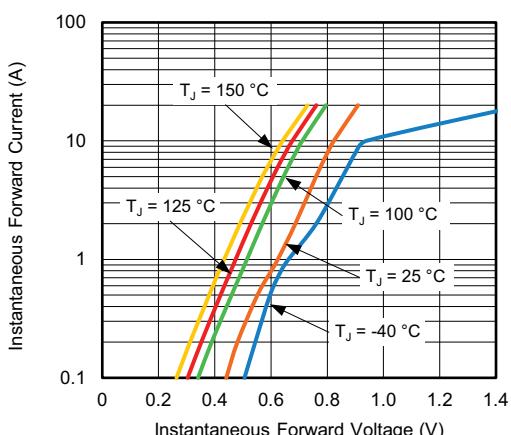
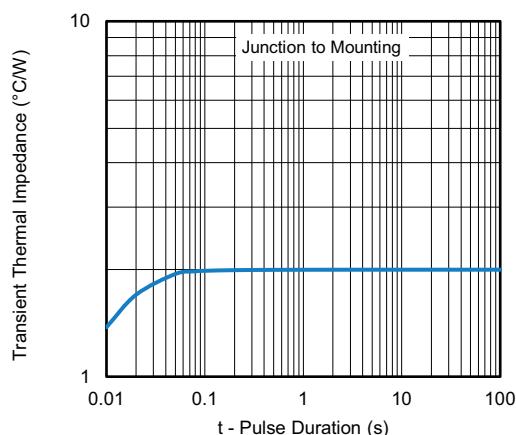
ORDERING INFORMATION TABLE

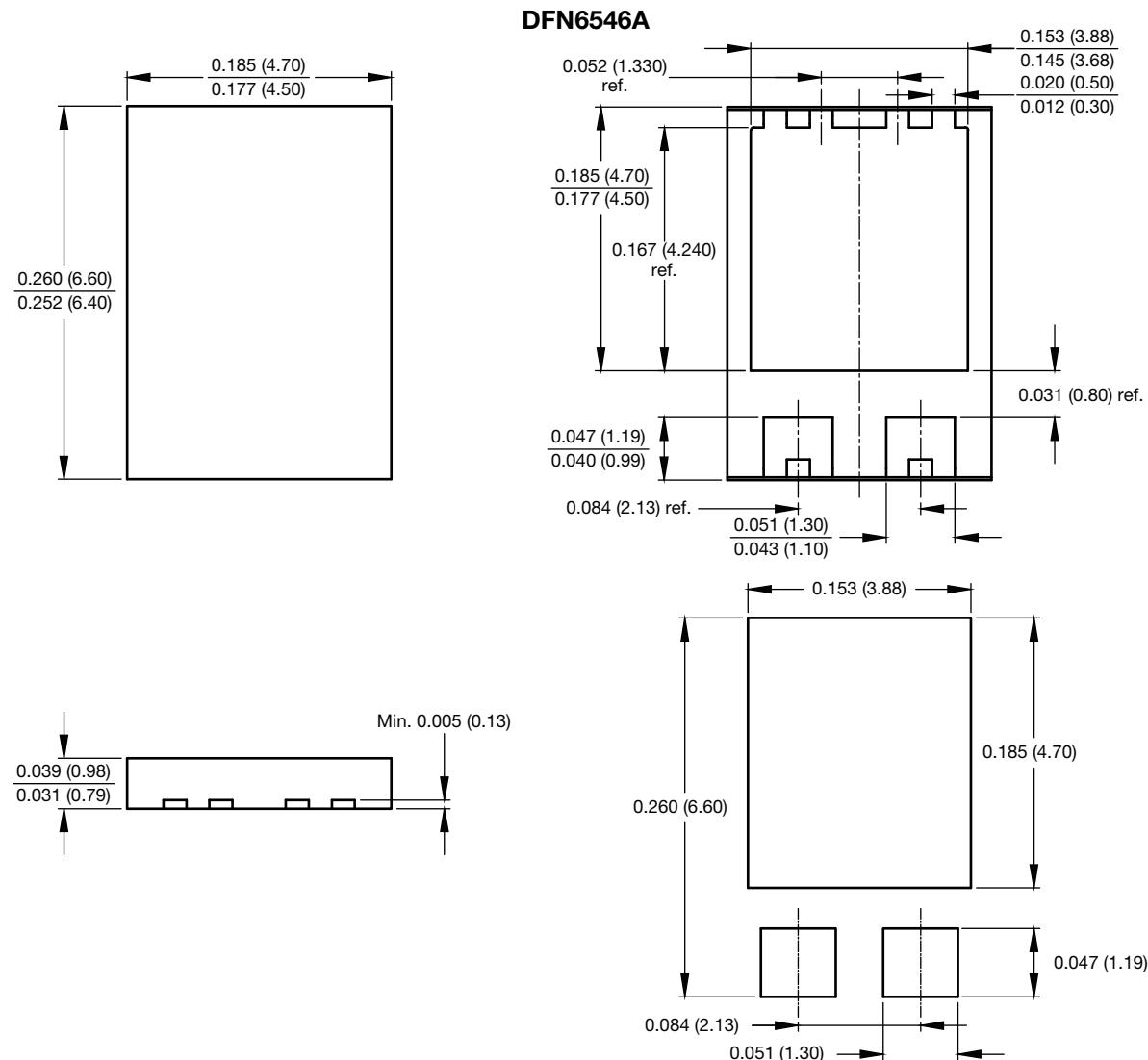
Device code	V	15	N6	20	2	C	H	M3
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	- Vishay TMBS product							
2	- Current rating (15 = 15 A)							
3	- Package type (N6 = DFN6546A package)							
4	- Voltage rating (20 = 200 V)							
5	- TMBS generation option (2 = Gen 2)							
6	- Circuit configuration (C = common cathode)							
7	- Quality grade (H = AEC-Q101 qualified, otherwise = industry grade)							
7	- Material / environmental category (M3 = halogen-free, RoHS-compliant, and termination lead (Pb)-free)							

ORDERING INFORMATION (Example)				
PREFERRED P/N	UNIT WEIGHT (g)	PREFERRED PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
V15N6202C-M3/I	0.086	I	6000	13" diameter plastic tape and reel
V15N6202CHM3/I ⁽¹⁾	0.086	I	6000	13" diameter plastic tape and reel

Note

(1) AEC-Q101 qualified

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

Fig. 1 - Forward Current Derating Curve

Fig. 4 - Typical Reverse Leakage Characteristics Per Diode

Fig. 2 - Forward Power Loss Characteristics Per Diode

Fig. 5 - Typical Junction Capacitance Per Diode

Fig. 3 - Typical Instantaneous Forward Characteristics Per Diode

Fig. 6 - Typical Transient Thermal Impedance

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)


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