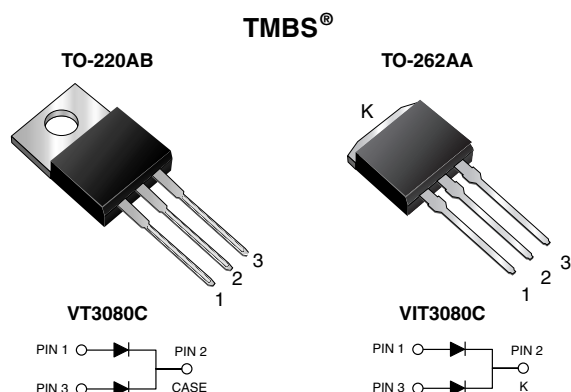




Dual Trench MOS Barrier Schottky Rectifier

Ultra Low $V_F = 0.46\text{ V}$ at $I_F = 5\text{ A}$



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 reserve battery protection.

PRIMARY CHARACTERISTICS

$I_{F(AV)}$	2 x 15 A
V_{RRM}	80 V
I_{FSM}	150 A
V_F at $I_F = 15\text{ A}$	0.65 V
T_J max.	150 °C

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

PARAMETER	SYMBOL	VT3080C	VIT3080C	UNIT
Maximum repetitive peak reverse voltage	V_{RRM}	80		V
Maximum average forward rectified current (fig. 1)	$I_{F(AV)}$	30		A
		15		
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	I_{FSM}	150		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}	- 55 to + 150		°C

VT3080C, VIT3080C

Vishay General Semiconductor



ELECTRICAL CHARACTERISTICS (T _A = 25 °C unless otherwise noted)						
PARAMETER	TEST CONDITIONS		SYMBOL	TYP.	MAX.	UNIT
Instantaneous forward voltage per diode	I _F = 5 A	T _A = 25 °C	V _F ⁽¹⁾	0.52	-	V
	I _F = 7.5 A			0.58	-	
	I _F = 15 A			0.75	0.82	
	I _F = 5 A	T _A = 125 °C		0.46	-	
	I _F = 7.5 A			0.52	-	
	I _F = 15 A			0.65	0.70	
Reverse current per diode	V _R = 80 V	T _A = 25 °C	I _R ⁽²⁾	30	700	μA
		T _A = 125 °C		20	35	mA

Notes

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

THERMAL CHARACTERISTICS (T _A = 25 °C unless otherwise noted)					
PARAMETER		SYMBOL	VT3080C	VIT3080C	UNIT
Typical thermal resistance	per diode	R _{θJC}	2.5		°C/W
	per device		2.0		

ORDERING INFORMATION (Example)					
PACKAGE	PREFERRED P/N	UNIT WEIGHT (g)	PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
TO-220AB	VT3080C-M3/4W	1.89	4W	50/tube	Tube
TO-262AA	VIT3080C-M3/4W	1.46	4W	50/tube	Tube
TO-220AB ⁽¹⁾	VT3080CHM3/4W	1.89	4W	50/tube	Tube
TO-262AA ⁽¹⁾	VIT3080CHM3/4W	1.46	4W	50/tube	Tube

Note

(1) AEC-Q101 qualified



RATINGS AND CHARACTERISTICS CURVES

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

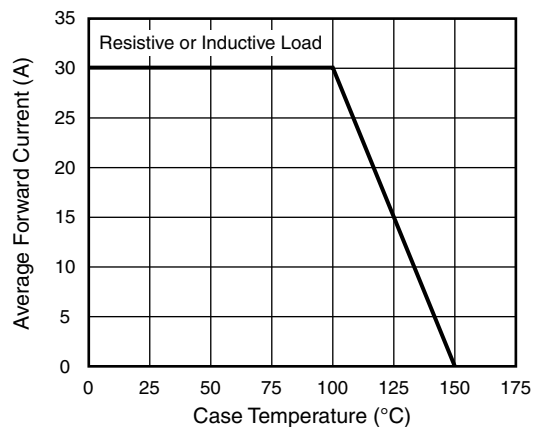


Fig. 1 - Maximum Forward Current Derating Curve

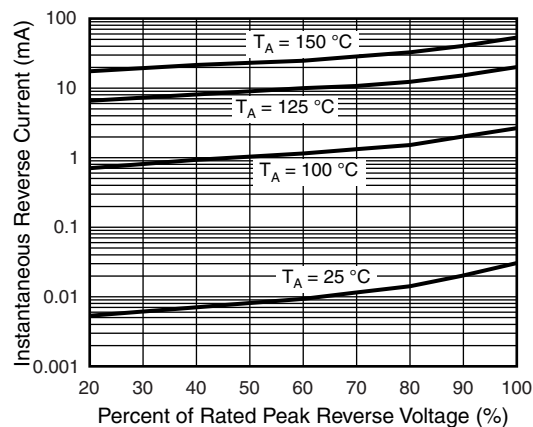


Fig. 4 - Typical Reverse Characteristics

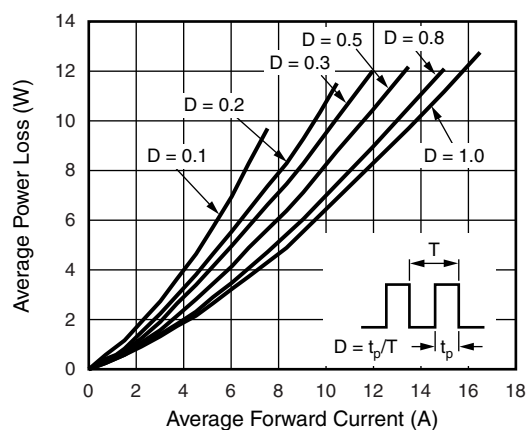


Fig. 2 - Forward Power Dissipation Characteristics

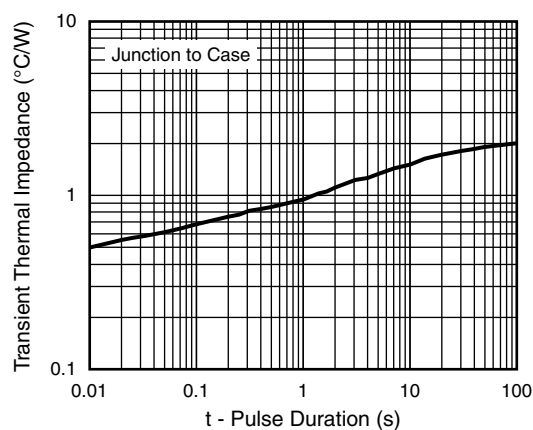


Fig. 5 - Typical Transient Thermal Impedance

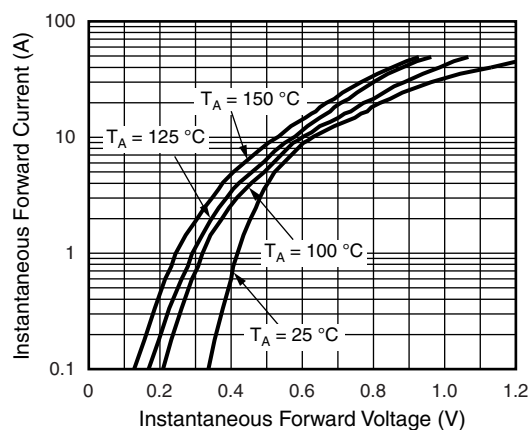


Fig. 3 - Typical Instantaneous Forward Characteristics

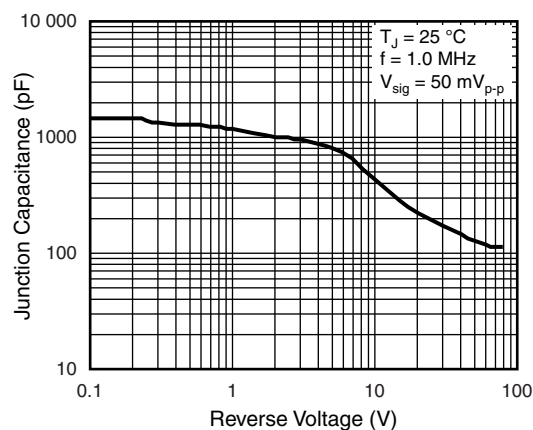


Fig. 6 - Typical Junction Capacitance

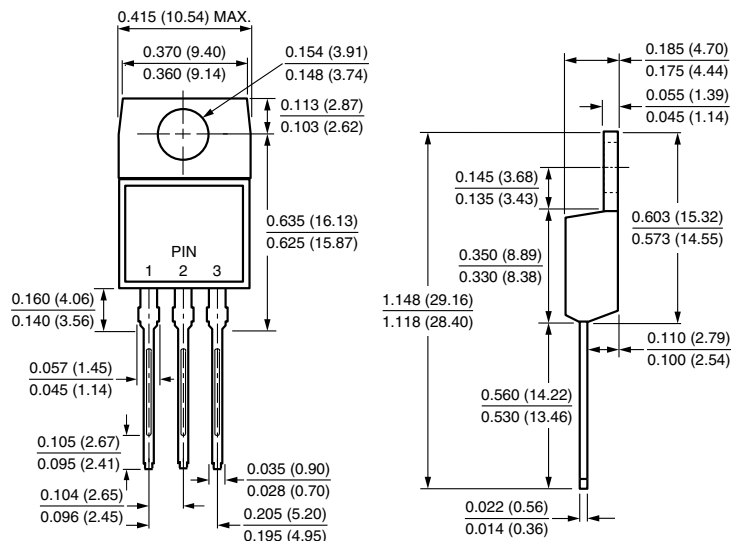
VT3080C, VIT3080C

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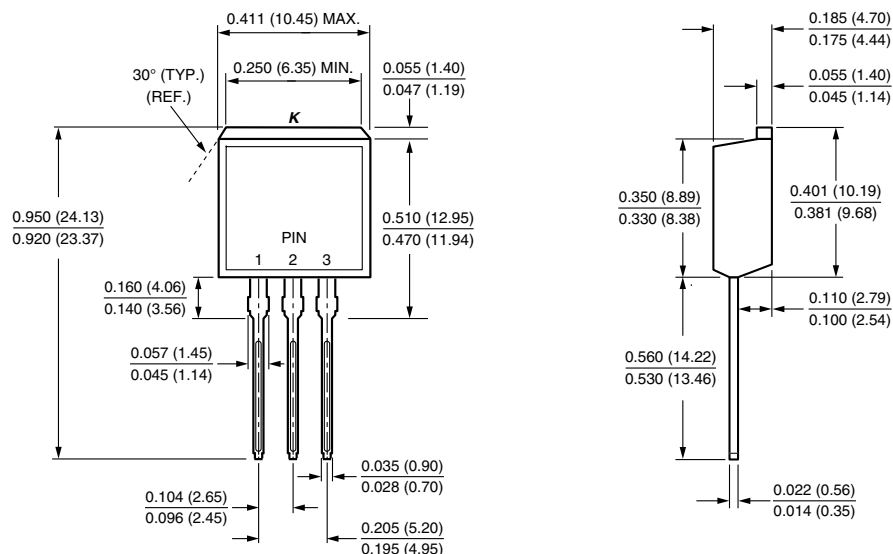


PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

TO-220AB



TO-262AA





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