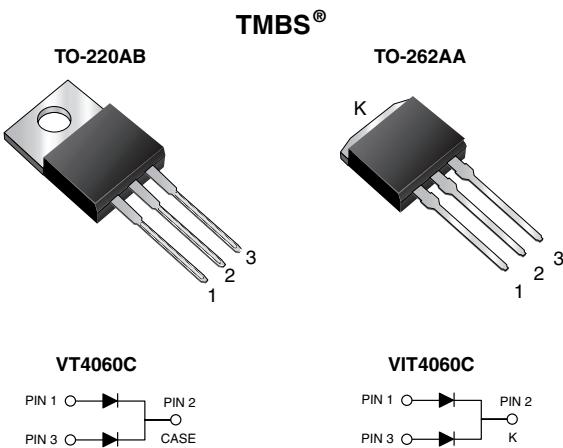


## Dual Trench MOS Barrier Schottky Rectifier

Ultra Low  $V_F$  = 0.32 V at  $I_F$  = 5.0 A



### FEATURES

- Trench MOS Schottky technology
- Low forward voltage drop, low power losses
- High efficiency operation
- Solder dip 275 °C max. 10 s, per JESD 22-B106
- AEC-Q101 qualified
  - Automotive ordering code: base P/NHM3
- Material categorization: for definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)



### 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 and TO-262AA

Molding compound meets UL 94 V-0 flammability rating

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

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

### PRIMARY CHARACTERISTICS

$I_{F(AV)}$	2 x 15 A
$V_{RRM}$	60 V
$I_{FSM}$	200 A
$V_F$ at $I_F$ = 15 A	0.45 V
$T_J$ max.	150 °C
Package	TO-220AB, TO-262AA
Diode variation	Dual common cathode

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

PARAMETER	SYMBOL	VT30L60C	VIT30L60C	UNIT
Maximum repetitive peak reverse voltage	$V_{RRM}$	60		V
Maximum average forward rectified current (fig. 1)	$I_{F(AV)}$	30		A
per device		15		
per diode				
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	$I_{FSM}$	200		A
Voltage rate of change (rated $V_R$ )	$dV/dt$	10 000		V/μs
Operating junction and storage temperature range	$T_J, T_{STG}$	-40 to +150		°C

ELECTRICAL CHARACTERISTICS ( $T_A = 25^\circ\text{C}$ unless otherwise noted)							
PARAMETER	TEST CONDITIONS		SYMBOL	TYP.	MAX.	UNIT	
Instantaneous forward voltage per diode	$I_F = 5.0 \text{ A}$	$T_A = 25^\circ\text{C}$	$V_F^{(1)}$	0.43	-	V	
	$I_F = 7.5 \text{ A}$			0.46	-		
	$I_F = 15 \text{ A}$			0.51	0.60		
	$I_F = 5.0 \text{ A}$	$T_A = 125^\circ\text{C}$		0.32	-		
	$I_F = 7.5 \text{ A}$			0.36	-		
	$I_F = 15 \text{ A}$			0.45	0.57		
	Reverse current per diode	$V_R = 60 \text{ V}$	$I_R^{(2)}$	$T_A = 25^\circ\text{C}$	-	4.0	mA
				$T_A = 125^\circ\text{C}$	27	110	

**Notes**

(1) Pulse test: 300  $\mu\text{s}$  pulse width, 1 % duty cycle

(2) Pulse test: Pulse width  $\leq 40 \text{ ms}$

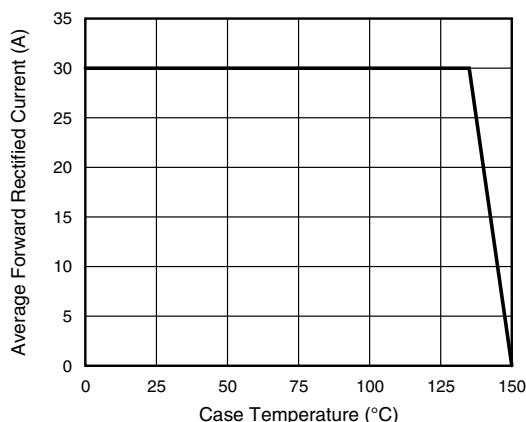
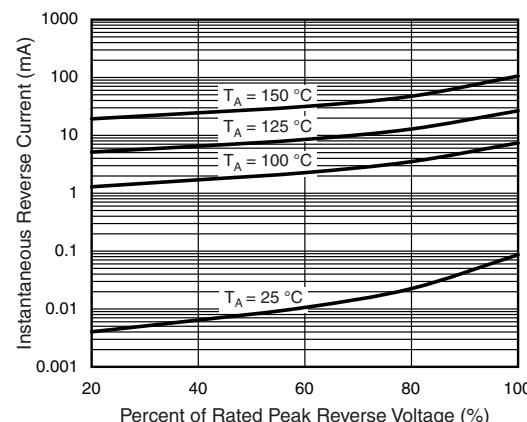
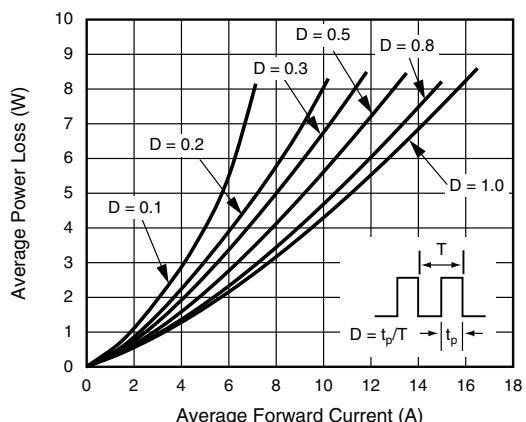
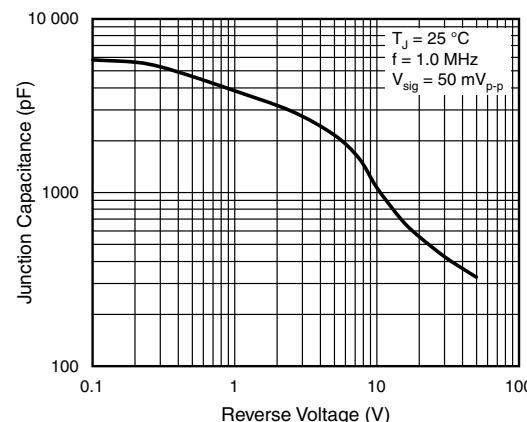
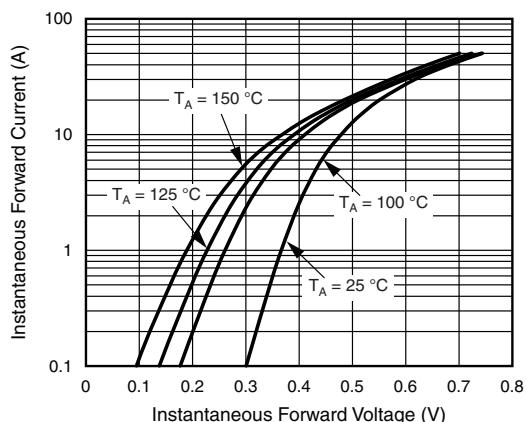
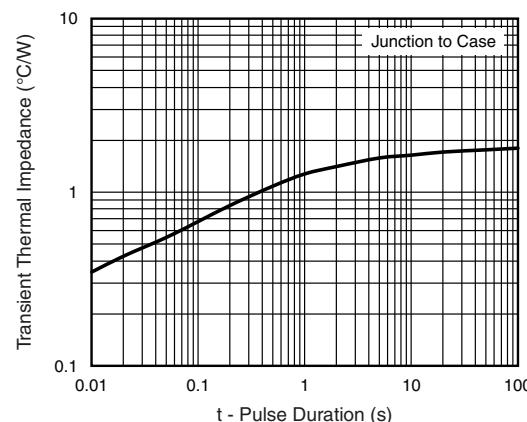
THERMAL CHARACTERISTICS ( $T_A = 25^\circ\text{C}$ unless otherwise noted)					
PARAMETER	SYMBOL	VT30L60C	VIT30L60C	UNIT	
Typical thermal resistance	$R_{\theta\text{JC}}$	per diode		1.8	$^\circ\text{C}/\text{W}$
		per device		0.8	

**ORDERING INFORMATION** (Example)

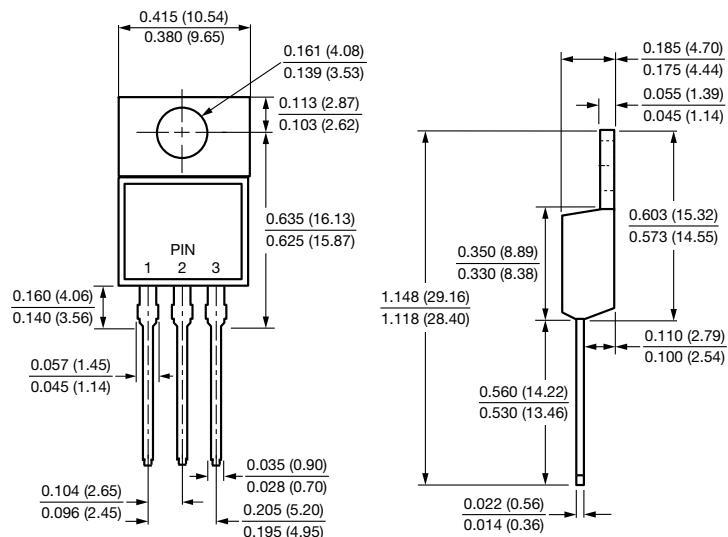
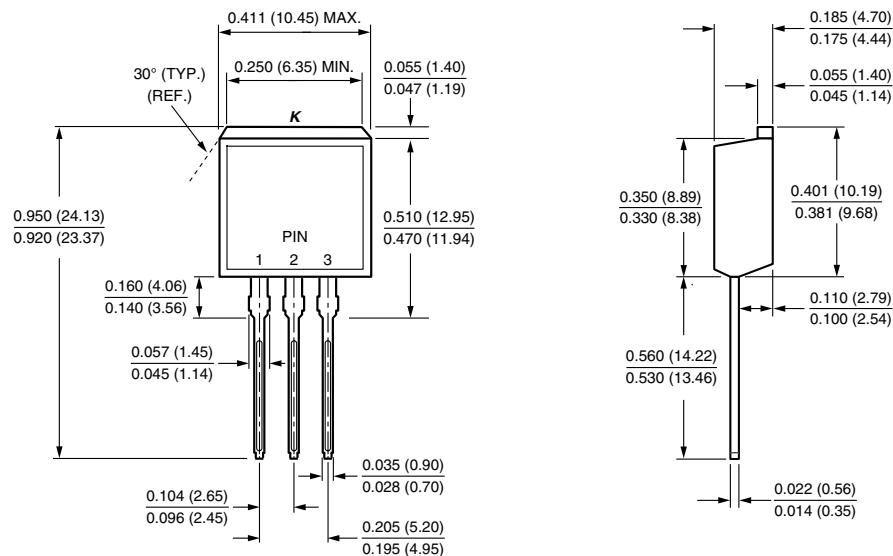
PACKAGE	PREFERRED P/N	UNIT WEIGHT (g)	PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
TO-220AB	VT30L60C-M3/4W	1.89	4W	50/tube	Tube
TO-262AA	VIT30L60C-M3/4W	1.46	4W	50/tube	Tube
TO-220AB	VT30L60CHM3/4W <sup>(1)</sup>	1.89	4W	50/tube	Tube
TO-262AA	VIT30L60CHM3/4W <sup>(1)</sup>	1.46	4W	50/tube	Tube

**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 Per Diode**

**Fig. 2 - Forward Power Dissipation Characteristics Per Diode**

**Fig. 5 - Typical Transient Thermal Impedance Per Diode**

**Fig. 3 - Typical Instantaneous Forward Characteristics Per Diode**

**Fig. 6 - Typical Junction Capacitance Per Diode**

**PACKAGE OUTLINE DIMENSIONS** in inches (millimeters)

**TO-220AB**

**TO-262AA**


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