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[Vishay Semiconductor/Diodes Division](#)
[M2035S-E3/4W](#)

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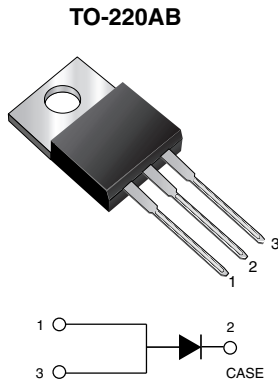


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M2035S-E3, M2045S-E3

Vishay General Semiconductor

Schottky Barrier Rectifier



PRIMARY CHARACTERISTICS	
$I_{F(AV)}$	20 A
V_{RRM}	35 V, 45 V
I_{FSM}	200 A
V_F at $I_F = 20$ A	0.55 V
T_J max.	150 °C
Package	TO-220AB
Diode variations	Single die

FEATURES

- Trench MOS Schottky technology
- Power pack
- Guardring for overvoltage protection
- Lower power losses, high efficiency
- Low forward voltage drop
- High forward surge capability
- High frequency operation
- Solder dip 275 °C max.10 s, per JESD 22-B106
- Material categorization: For definitions of compliance please see www.vishay.com/doc?99912



RoHS
COMPLIANT

TYPICAL APPLICATIONS

For use in low voltage, high frequency rectifier of switching mode power supplies, freewheeling diodes, DC/DC converters, or polarity protection application.

MECHANICAL DATA

Case: TO-220AB

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 maximum

MAXIMUM RATINGS ($T_A = 25$ °C unless otherwise noted)				
PARAMETER	SYMBOL	M2035S	M2045S	UNIT
Maximum repetitive peak reverse voltage	V_{RRM}	35	45	V
Maximum average forward rectified current (fig.1)	$I_{F(AV)}$	20		A
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	I_{FSM}	200		A
Peak repetitive reverse current per leg at $t_p = 2$ μ s, 1 kHz	I_{RRM}	2.0		A
Voltage rate of change (rated V_F)	dV/dt	10 000		V/ μ s
Operating junction and storage temperature range	T_J, T_{STG}	- 55 to + 150		°C



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ELECTRICAL CHARACTERISTICS ($T_A = 25\text{ }^\circ\text{C}$ unless otherwise noted)						
PARAMETER	SYMBOL	TEST CONDITIONS	TYP.	MAX.	UNIT	
Instantaneous forward voltage	$V_F^{(1)}$	$I_F = 10\text{ A}$	$T_J = 25\text{ }^\circ\text{C}$	0.52	-	V
		$I_F = 20\text{ A}$		0.62	0.70	
		$I_F = 10\text{ A}$	$T_J = 125\text{ }^\circ\text{C}$	0.42	-	
		$I_F = 20\text{ A}$		0.55	0.61	
Maximum reverse current at rated V_R	$I_R^{(2)}$		$T_J = 25\text{ }^\circ\text{C}$	80	200	μA
			$T_J = 125\text{ }^\circ\text{C}$	24	35	mA
Typical junction capacitance	C_J	4.0 V, 1 MHz	700		pF	

Notes

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

THERMAL CHARACTERISTICS ($T_A = 25\text{ }^\circ\text{C}$ unless otherwise noted)				
PARAMETER	SYMBOL	M2035S	M2045S	UNIT
Typical thermal resistance	$R_{\theta JC}$	2.0		$^\circ\text{C/W}$

ORDERING INFORMATION (Example)				
PREFERRED P/N	UNIT WEIGHT (g)	PREFERRED PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
M2045S-E3/4W	1.877	4W	50/tube	Tube

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

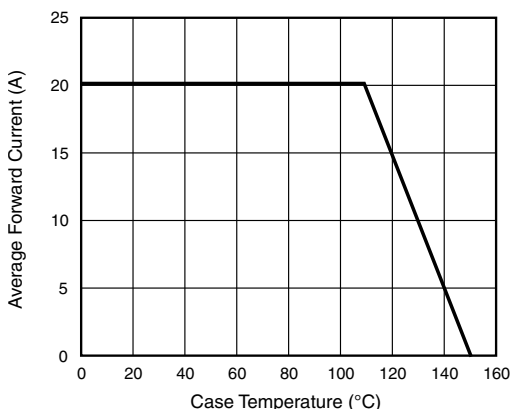


Fig. 1 - Forward Current Derating Curve

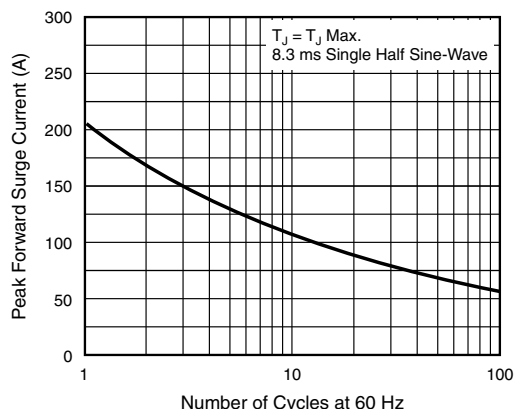


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current



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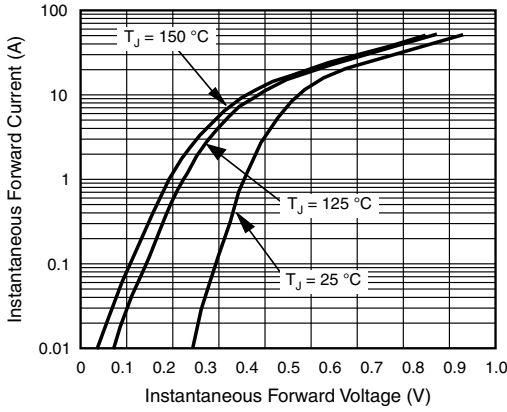


Fig. 3 - Typical Instantaneous Forward Characteristics

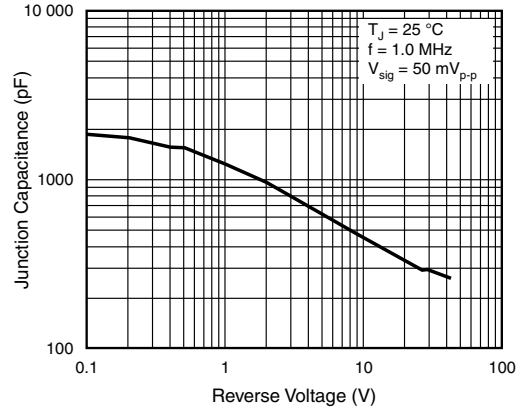


Fig. 5 - Typical Junction Capacitance

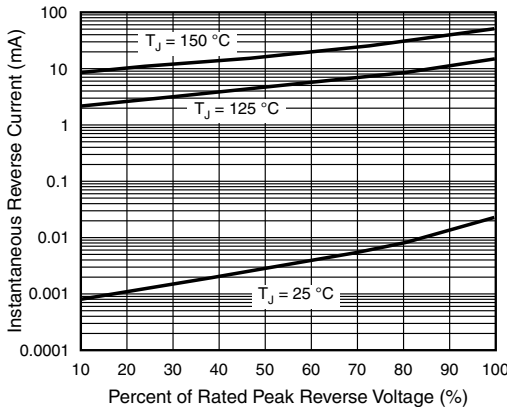
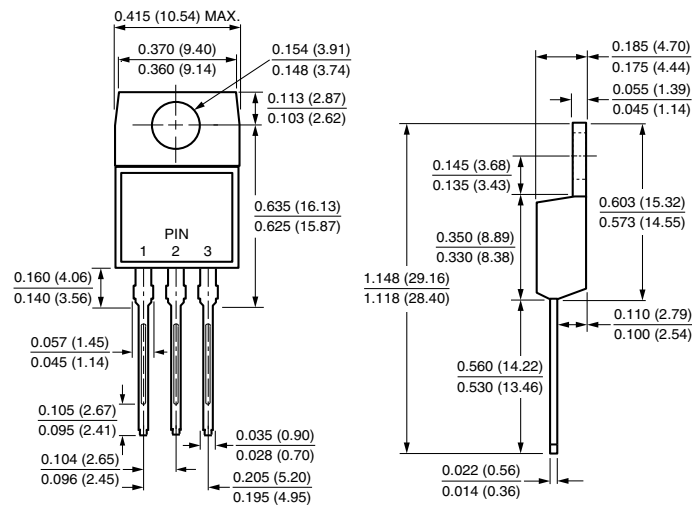


Fig. 4 - Typical Reverse Characteristics

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

TO-220AB





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