· Low forward voltage drop, low power losses · High efficiency operation

- Meets MSL level 1, per J-STD-020, LF maximum peak of 245 °C
- · Material categorization: for definitions of compliance please see www.vishay.com/doc?99912

Molding compound meets UL 94 V-0 flammability rating Base P/N-M3 - halogen-free, RoHS-compliant, and

commercial grade

J-STD-002 and JESD 22-B102

E3 and M3 suffix meet JESD 201 class 2 whisker test

MAXIMUM RATINGS (T _A = 25 °C unless otherwise noted)					
PARAMETER		SYMBOL	VB30M120C	UNIT	
Maximum repetitive peak reverse voltage		V _{RRM}	120	V	
Maximum average forward rectified current (fig. 1)	per device		30		
	per diode	IF(AV)	15	Α	
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load per diode		I _{FSM}	150		
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	

Dual High Voltage Trench MOS Barrier Schottky Rectifier

Ultra Low $V_F = 0.52$ V at $I_F = 5$ A

FEATURES

- Trench MOS Schottky technology

TYPICAL APPLICATIONS

For use in solar cell junction box as a bypass diode for protection, using DC forward current without reverse bias.

MECHANICAL DATA

Case: D²PAK (TO-263AB)

Base P/N-E3 - RoHS-compliant, commercial grade

Terminals: matte tin plated leads, solderable per

Polarity: as marked

MAXIMUM RATINGS ($I_A = 25 ^{\circ}C$ unless otherwise noted)				
PARAMETER				
Maximum repetitive peak reverse voltage		V _{RRM}		
Maximum average forward rectified current (fig. 1)	per device			
	per diode	IF(AV)		
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load per diode				

VB30M120C

RoHS COMPLIANT

HALOGEN

FREE

Vishay General Semiconductor

www.vishay.com



HEATSINK

click logo to get started

2 x 15 A

120 V

150 A

0.68 V

150 °C

D²PAK (TO-263AB)

Common cathode



Models Available

DESIGN SUPPORT TOOLS

I_{F(AV)}

V_{RRM}

I_{FSM}

 V_F at $I_F = 15 A$

T_J max.

Package Circuit configuration

PRIMARY CHARACTERISTICS





Vishay General Semiconductor

ELECTRICAL CHARACTERISTICS ($T_A = 25 \text{ °C}$ unless otherwise noted)						
PARAMETER	TEST CONDITIONS		SYMBOL	TYP.	MAX.	UNIT
Instantaneous forward voltage per diode	I _F = 5 A	T _A = 25 °C	VF ⁽¹⁾	0.60	-	V
	l _F = 7.5 A			0.67	-	
	l _F = 15 A			0.87	0.98	
	I _F = 5 A	T _A = 125 °C		0.52	-	
	l _F = 7.5 A			0.57	-	
	I _F = 15 A			0.68	0.76	
Reverse current per diode	V _R = 90 V	T _A = 25 °C	I _R (2)	3.5	-	μA
		T _A = 125 °C		2	-	mA
	$V_{\rm R} = 120 {\rm V}$	T _A = 25 °C		-	800	μA
		T _A = 125 °C		5	27	mA

Notes

 $^{(1)}\,$ Pulse test: 300 μs pulse width, 1 % duty cycle

⁽²⁾ Pulse test: Pulse width \leq 20 ms

THERMAL CHARACTERISTICS ($T_A = 25 \text{ °C}$ unless otherwise noted)			
PARAMETER	SYMBOL	VB30M120C	UNIT
Typical thermal resistance per diode	$R_{ ext{ heta}JC}$	2.2	°C/W

ORDERING INFORMATION (Example)					
PACKAGE	PREFERRED P/N	UNIT WEIGHT (g)	PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
TO-263AB	VB30M120C-E3/4W	1.37	4W	50/tube	Tube
TO-263AB	VB30M120C-E3/8W	1.37	8W	800/reel	Tape and reel
TO-263AB	VB30M120C-M3/I	1.37	I	800/reel	Tape and reel

RATINGS AND CHARACTERISTICS CURVES (T_A = 25 °C unless otherwise noted)

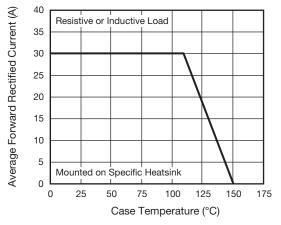


Fig. 1 - Maximum Forward Current Derating Curve

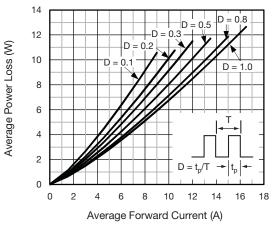
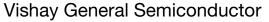
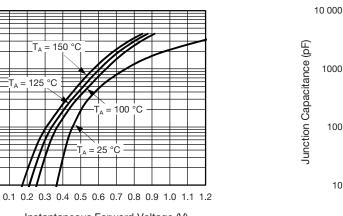


Fig. 2 - Forward Power Loss Characteristics Per Diode

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VB30M120C





Instantaneous Forward Voltage (V) Fig. 3 - Typical Instantaneous Forward Characteristics Per Diode

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SHA

100

10

1

0.1

0

Instantaneous Forward Current (A)

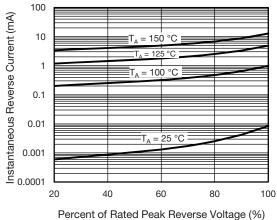


Fig. 4 - Typical Reverse Characteristics Per Diode

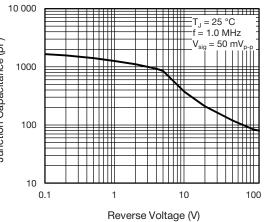
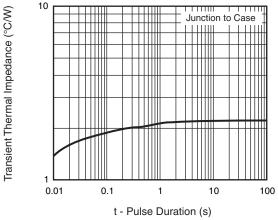
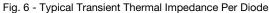
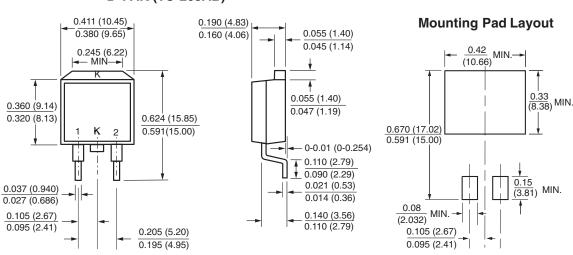


Fig. 5 - Typical Junction Capacitance Per Diode





PACKAGE OUTLINE DIMENSIONS in inches (millimeters)



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D²PAK (TO-263AB)



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