



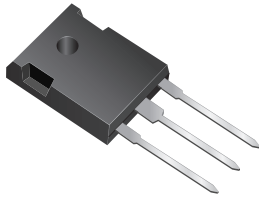
MBR40H35PT thru MBR40H60PT

New Product

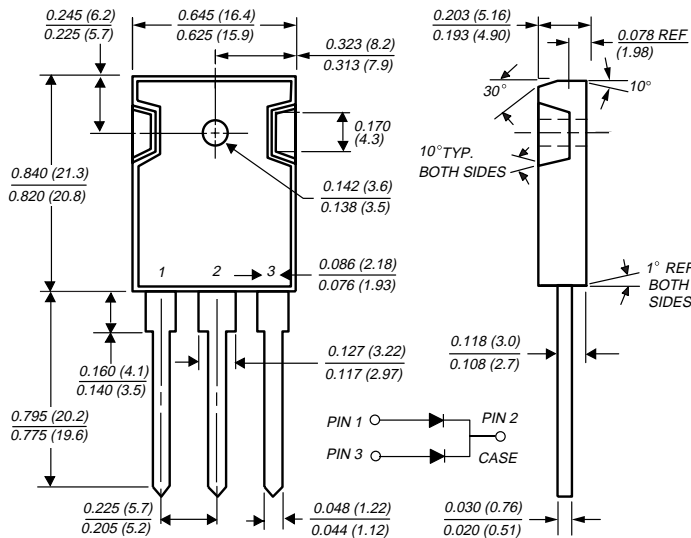
Vishay Semiconductors
formerly General Semiconductor

Dual Schottky Barrier Rectifier

Reverse Voltage 35 to 60 V
Forward Current 40 A



TO-247AD (TO-3P)



Features

- Plastic package has Underwriters Laboratory Flammability Classifications 94 V-0
- Dual rectifier construction, positive center-tap
- Metal silicon junction, majority carrier conduction
- High surge capability
- Low forward voltage drop, low power loss and high efficiency
- For use in low voltage, high frequency inverters, free-wheeling, and polarity protection applications
- Guardring for overvoltage protection
- Rated for reverse surge and ESD
- 175 °C maximum operation junction temperature

Mechanical Data

Case: JEDEC TO-247AD molded plastic body

Terminals: Lead solderable per MIL-STD-750, Method 2026

High temperature soldering guaranteed:
250°C/10 seconds, 0.17" (4.3 mm) from case

Polarity: As marked

Mounting Position: Any **Mounting Torque:** 10 in-lbs max.

Weight: 0.2 oz., 5.6 g

Maximum Ratings & Thermal Characteristics Ratings at 25°C ambient temperature unless otherwise specified.

Parameter	Symbol	MBR40H35PT	MBR40H45PT	MBR40H50PT	MBR40H60PT	Unit
Maximum repetitive peak reverse voltage	V _{RRM}	35	45	50	60	V
Maximum working peak reverse voltage	V _{RWM}	35	45	50	60	V
Maximum DC blocking voltage	V _{DC}	35	45	50	60	V
Maximum average forward rectified current (See Fig. 1)	I _{F(AV)}	40				A
Peak repetitive forward current per leg at T _C = 155 °C (rated V _R , square wave, 20 KHz)	I _{FRM}	40				A
Non-repetitive avalanche energy per leg at 25 °C, I _{AS} = 4 A, L = 10 mH	E _{AS}	80				mJ
Peak forward surge current, 8.3 ms single half sine-wave superimposed on rated load (JEDEC Method)	I _{FSM}	400				A
Peak repetitive reverse surge current ⁽¹⁾	I _{RRM}	2.0		1.0		A
Peak non-repetitive reverse energy (8/20 μs waveform)	E _{RSM}	30		25		mJ
Electrostatic discharge capacitor voltage Human body model: C = 100 pF, R = 1.5 kΩ	V _C	25				kV
Thermal resistance from junction to case per leg	R _{θJC}	1.2				°C/W
Voltage rate of change at (rated V _R)	dv/dt	10,000				V/μs
Operating junction temperature range	T _J	-65 to +175				°C
Storage temperature range	T _{STG}	-65 to +175				°C

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Electrical Characteristics (T_C = 25°C unless otherwise noted)

Parameter	Symbol	MBR40H35PT, MBR40H45PT		MBR40H50PT, MBR40H60PT		Unit	
		Typ	Max	Typ	Max		
Maximum instantaneous forward voltage per leg ⁽²⁾	V _F	–	0.63	–	0.69	V	
		at I _F = 20 A T _J = 25 °C	0.49	0.55	0.56		0.60
		at I _F = 20 A T _J = 125 °C	–	0.73	–		0.83
		at I _F = 40 A T _J = 25 °C	0.62	0.66	0.68		0.72
at I _F = 40 A T _J = 125 °C	–	–	–	–	–		
Maximum instantaneous reverse current at rated DC blocking voltage per leg ⁽²⁾	I _R	–	150	–	150	μA mA	
		9.0	25	6.0	25		

Notes: (1) 2.0 μs pulse width, f = 1.0 KHz

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



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

Fig. 1 – Forward Current Derating Curve

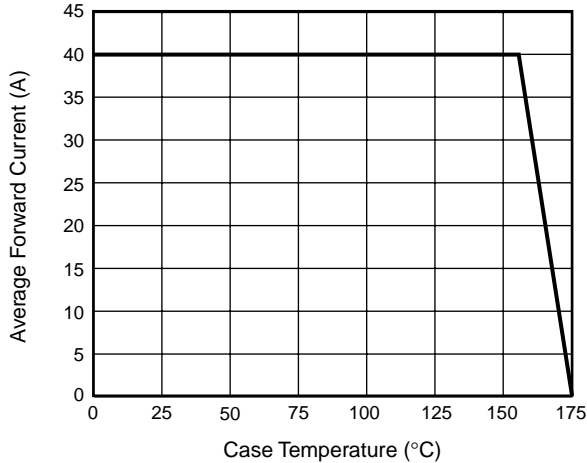


Fig. 2 – Maximum Non-Repetitive Peak Forward Surge Current Per Leg

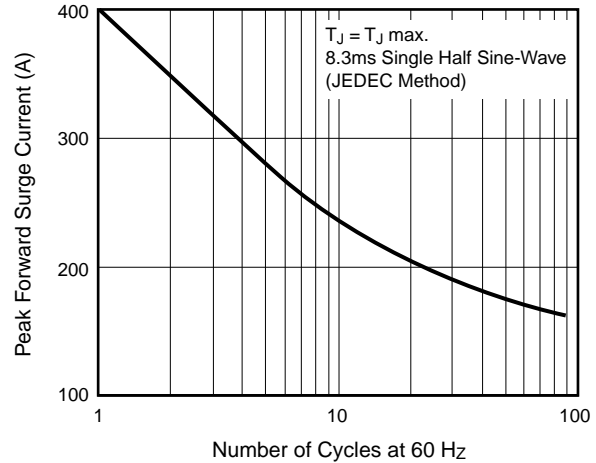


Fig. 3 – Typical Instantaneous Forward Characteristics Per Leg

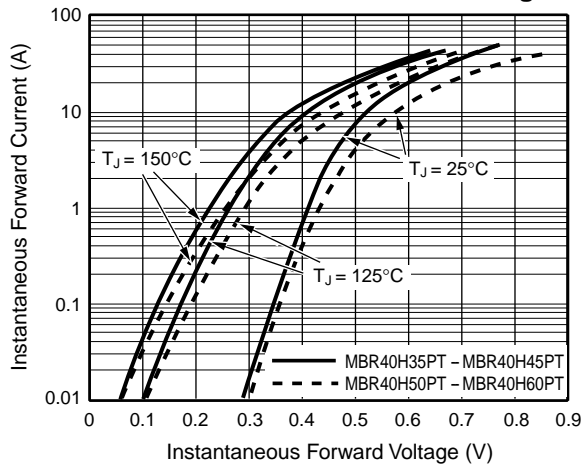


Fig. 4 – Typical Reverse Characteristics Per Leg

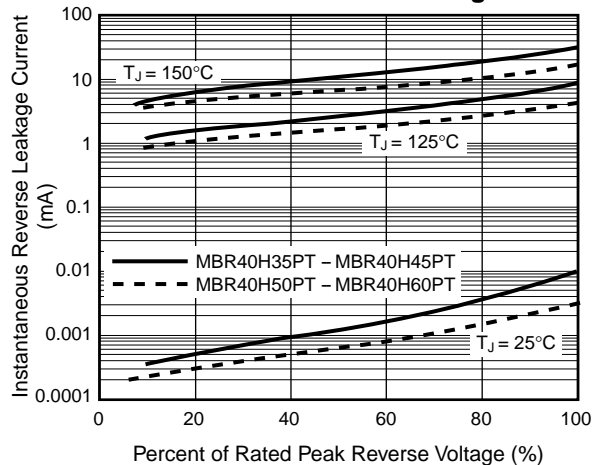


Fig. 5 – Typical Junction Capacitance Per Leg

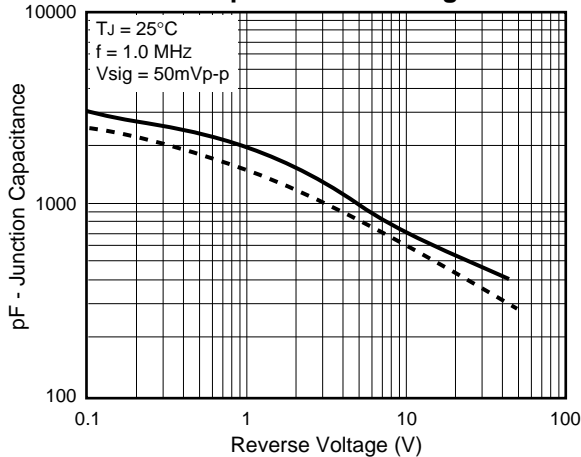


Fig. 6 – Typical Transient Thermal Impedance Per Leg

