



MBR40H35CT thru MBR40H60CT

New Product

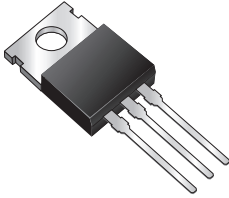
Vishay Semiconductors
formerly General Semiconductor

Dual Schottky Barrier Rectifiers

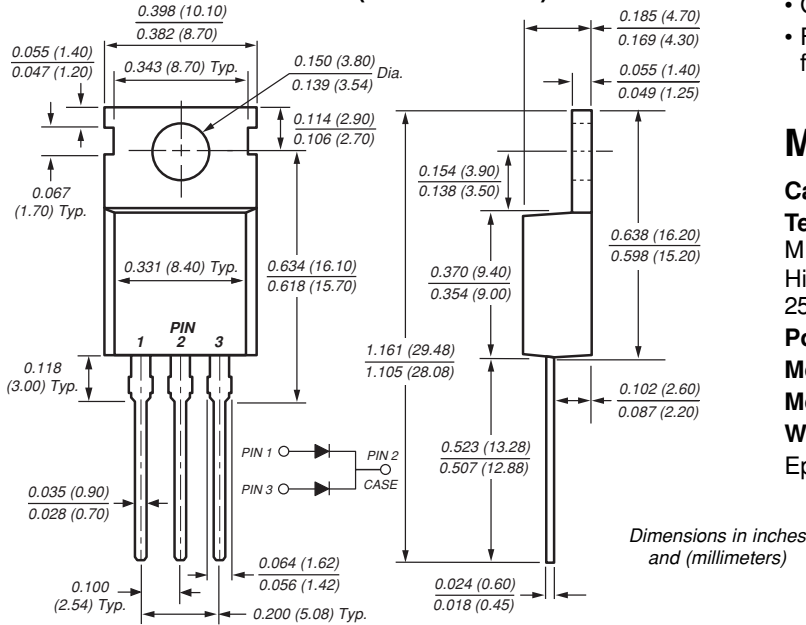
Reverse Voltage 35V to 60V

Forward Current 40A

Max. Junction Temperature 175°C



TO-220AB (MBR40HxxCT)



Features

- Dual rectifier construction, positive center tap
- Metal silicon junction, majority carrier conduction
- Low power loss, high efficiency
- Guardring for overvoltage protection
- For use in high frequency inverters, free wheeling, and polarity protection applications

Mechanical Data

Case: JEDEC TO-220AB molded plastic body

Terminals: Plated leads, solderable per MIL-STD-750, Method 2026

High temperature soldering guaranteed: 250°C/10 seconds, 0.25" (6.35mm) from case

Polarity: As marked

Mounting Position: Any

Mounting Torque: 10 in-lbs maximum

Weight: 0.08oz., 2.24g

Epoxy meets UL 94V-0 flammability rating

Maximum Ratings (T_c = 25°C unless otherwise noted)

Parameter	Symbol	MBR40H 35CT	MBR40H 45CT	MBR40H 50CT	MBR40H 60CT	Unit
Maximum repetitive peak reverse voltage	V _{RRM}	35	45	50	60	V
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>Total device</i> I _{F(AV)} <i>Per leg</i>	40 20				A
Peak forward surge current 8.3ms single half sine-wave superimposed on rated load	<i>Per leg</i> I _{FSM}	350		320		A
Peak repetitive reverse current per leg at t _p = 2μs, 1KHz	I _{RRM}	1.0				A
Peak non-repetitive reverse surge energy (8/20μs waveform)	<i>Per leg</i> E _{RSM}	20				mJ
Non-repetitive avalanche energy at 25°C, I _{AS} = 3.0A, L=5mH	<i>Per leg</i> E _{AS}	22.5				mJ
Voltage rate of change (rated V _R)	dv/dt	10,000				V/μs
Operating junction and storage temperature range	T _J , T _{STG}	-65 to +175				°C

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

Parameter	Symbol	MBR40H 35CT	MBR40H 40CT	MBR40H 50CT	MBR40H 60CT	Unit
Maximum repetitive peak reverse voltage	V _{RRM}	35	45	50	60	V
Working peak reverse voltage	V _{RWM}	35	45	50	60	V
Maximum DC blocking voltage	V _{DC}	35	45	50	60	V
Maximum instantaneous forward voltage per leg ⁽¹⁾ at I _F = 20A, T _J = 25°C at I _F = 20A, T _J = 125°C at I _F = 40A, T _J = 25°C at I _F = 40A, T _J = 125°C	V _F	0.64 0.55 0.76 0.70		0.68 0.60 0.83 0.73		V
Maximum reverse current per leg at working peak reverse voltage (Note 1) T _J = 25°C T _J = 125°C	I _R			100 15		μA mA
Typical junction capacitance at 4.0V, 1MHz	C _J	1200		920		pF

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

Parameter	Symbol	Value	Unit
Typical thermal resistance per leg	R _{θJC}	1.8	°C/W

Notes:

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

Ordering Information

Product	Case	Package Option	Package Code
MBR40H35CT - MBR40H60CT	TO-220AB	Anti-Static tube, 50/tube, 1K/carton	45



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

Fig. 1 – Forward Current Derating Curve

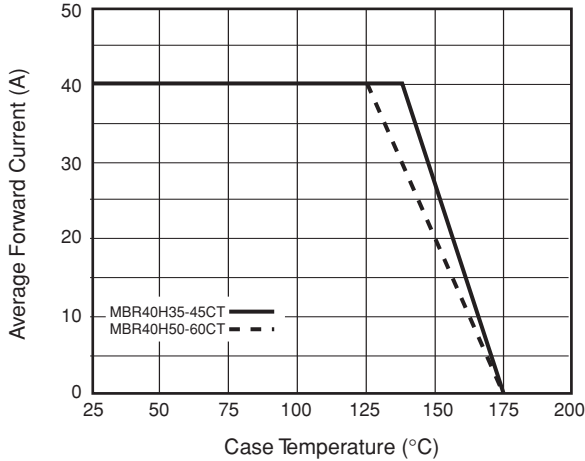


Fig. 2 – Maximum Non-Repetitive Peak Forward Surge Current Per Leg

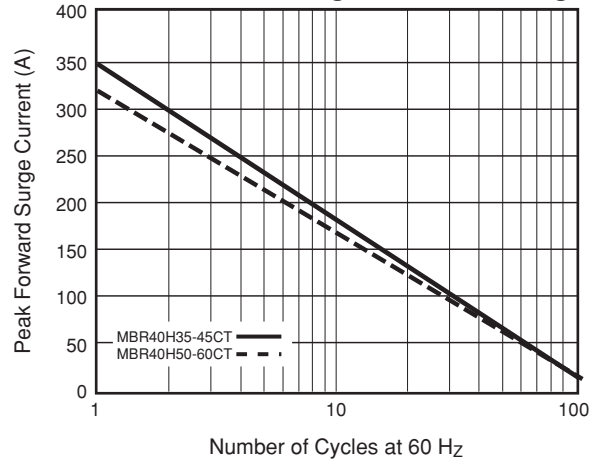


Fig. 3 – Typical Instantaneous Forward Characteristics Per Leg

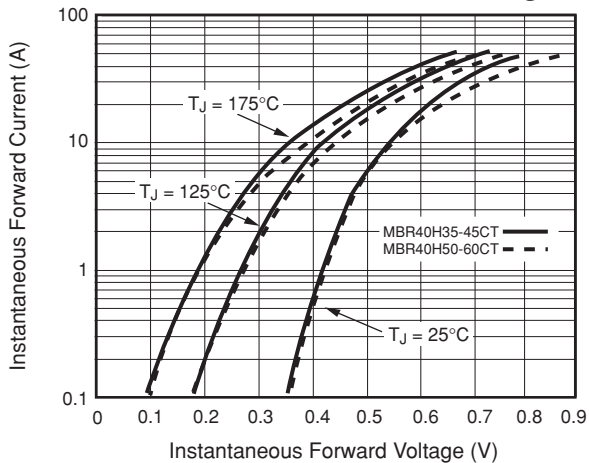


Fig. 4 – Typical Reverse Leakage Characteristics Per Leg

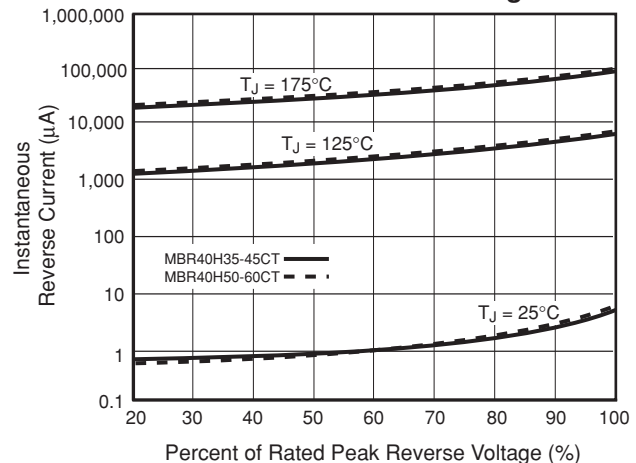


Fig. 5 – Typical Junction Capacitance Per Leg

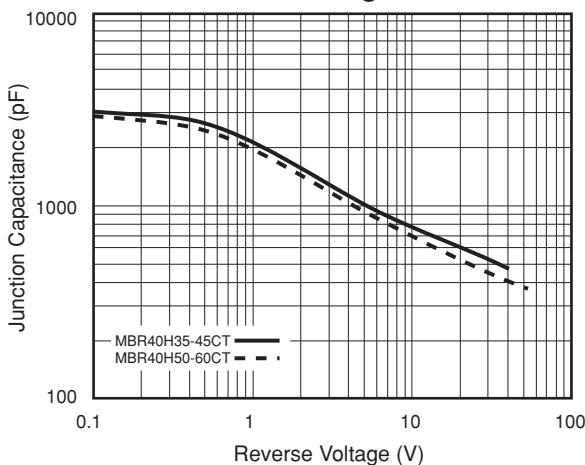
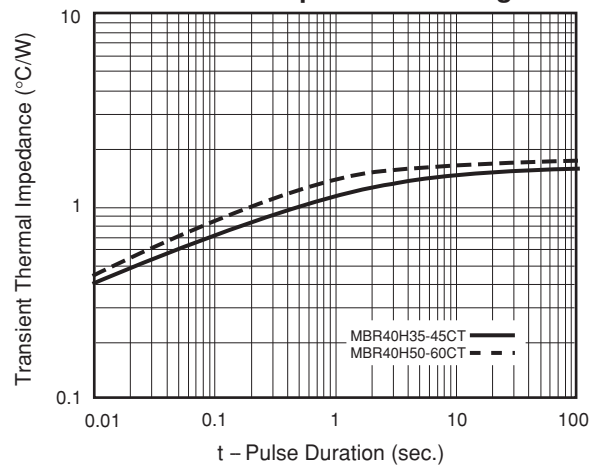


Fig. 6 – Typical Transient Thermal Impedance Per Leg





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