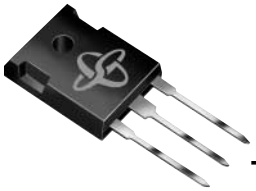
GENERAL SEMICONDUCTOR®

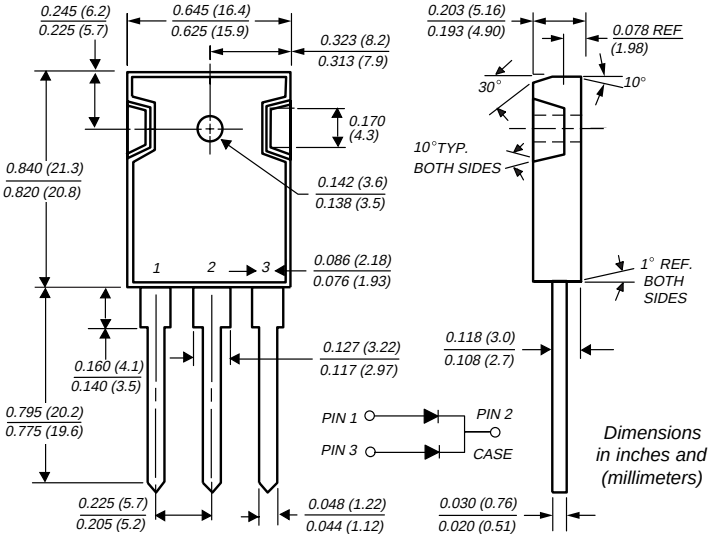
MBR4035PT thru MBR4060PT

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 94V-0
- Dual rectifier construction, positive center-tap
- Metal silicon junction, majority carrier conduction
- Low power loss, high efficiency
- High current capability, low forward voltage drop
- High surge capability
- For use in low voltage, high frequency inverters, free-wheeling, and polarity protection applications
- Guardring for overvoltage protection
- High temperature soldering guaranteed: 250°C/10 seconds, 0.17" (4.3mm) from case

Mechanical Data

Case: JEDEC TO-247AD molded plastic body
Terminals: Lead solderable per MIL-STD-750, Method 2026
Polarity: As marked
Mounting Position: Any
Mounting Torque: 10 in-lbs max.
Weight: 0.2 ounce, 5.6 grams

Maximum Ratings & Thermal Characteristics

Ratings at 25°C ambient temperature unless otherwise specified.

Parameter	Symbol	MBR4035PT	MBR4045PT	MBR4050PT	MBR4060PT	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 at T_C = 125°C	$I_{F(AV)}$	40				A
Peak repetitive forward current per leg at T_C=120°C (rated V_R, square wave, 20 KHz)	I_{FRM}	40				A
Peak forward surge current, 8.3ms single half sine-wave superimposed on rated load (JEDEC Method)	I_{FSM}	400				A
Peak repetitive reverse surge current (NOTE 1)	I_{RRM}	2.0		1.0		A
Maximum thermal resistance from junction to case per leg	$R_{\Theta JC}$	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 +150				°C
Storage temperature range	T_{STG}	–65 to +175				°C

Electrical Characteristics

Ratings at 25°C ambient temperature unless otherwise specified.

Parameter		Symbol	MBR4035PT	MBR4045PT	MBR4050PT	MBR4060PT	Unit
Maximum instantaneous forward voltage per leg at: (NOTE 2)	I_F = 20A, T_C = 25°C	V_F	0.70		0.72		V
	I_F = 20A, T_C = 125°C		0.60		0.62		
	I_F = 40A, T_C = 25°C		0.80		–		
	I_F = 40A, T_C = 125°C		0.75		–		
Maximum instantaneous reverse current at rated DC blocking voltage per leg (NOTE 2)	T_C = 25°C	I_R	1.0				mA
	T_C = 125°C		100				

Notes: (1) 2.0µs pulse width, f = 1.0 KHz
(2) Pulse test: 300µs pulse width, 1% duty cycle

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MBR4035PT thru MBR4060PT

Ratings and Characteristic Curves (T_A = 25°C unless otherwise noted)

FIG. 1 - FORWARD CURRENT DERATING CURVE

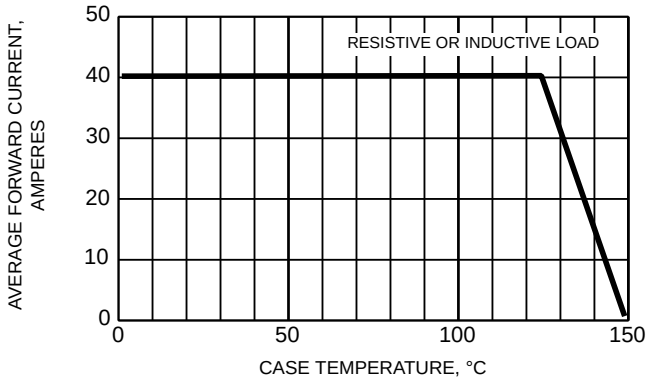

FIG. 2 - MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT PER LEG

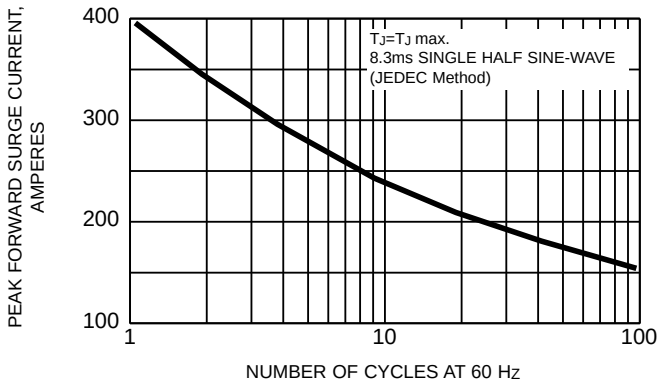

FIG. 3 - TYPICAL REVERSE CHARACTERISTICS PER LEG

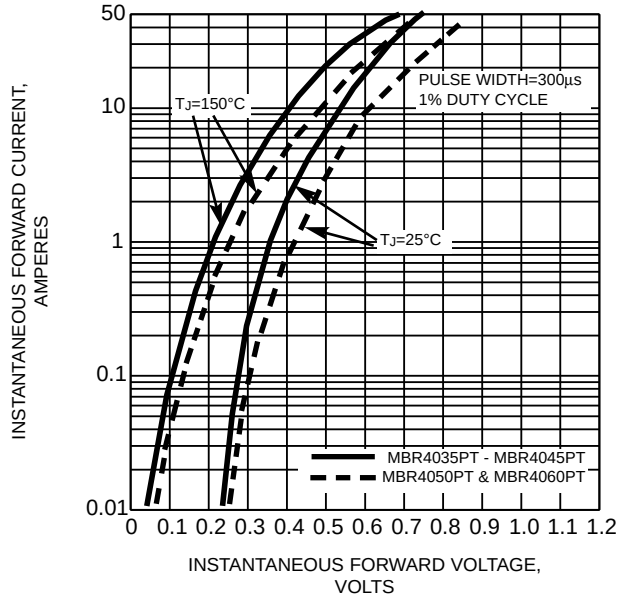

FIG. 4 - TYPICAL REVERSE CHARACTERISTICS PER LEG

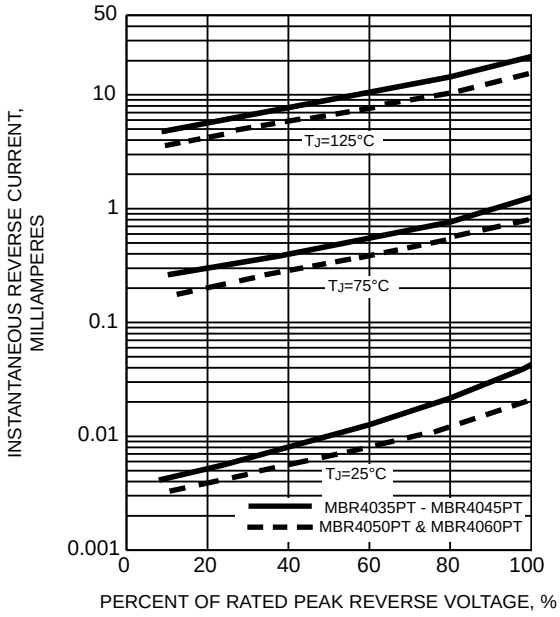

FIG. 5 - TYPICAL JUNCTION CAPACITANCE PER LEG

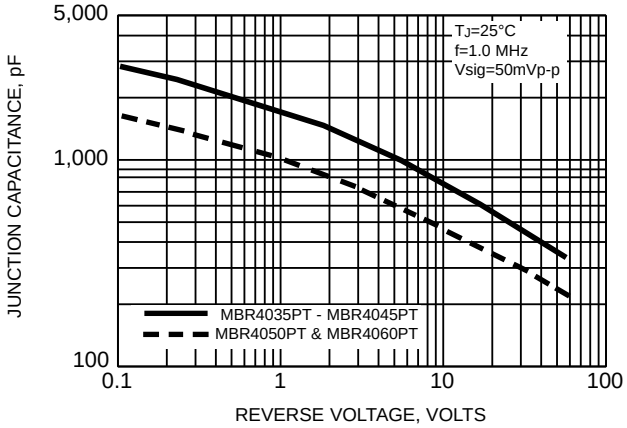

FIG . 6 - TYPICAL TRANSIENT THERMAL IMPEDANCE PER LEG