MBR3035PT thru MBR3060PT

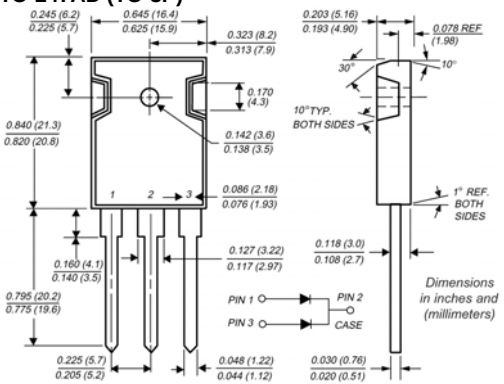
Dual Schottky Barrier Rectifiers

Reverse Voltage 35 to 60 Volts Forward Current 30.0 Amperes

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

TO-247AD (TO-3P)



Dimensions in inches and (millimeters)

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 and Electrical Characteristics

(Ratings at 25°C ambient temperature unless otherwise specified.)

Parameter	Symbol	MBR3035PT	MBR3045PT	MBR3050PT	MBR3060PT	Unit
Maximum repetitive peak reverse voltage	V_{RRM}	35	45	50	60	Volts
Working peak reverse voltage	V_{RWM}	35	45	50	60	Volts
Maximum DC blocking voltage	V_{DC}	35	45	50	60	Volts
Maximum average forward rectified current (See Fig. 1) Total device	$I_{F(AV)}$	30				Amps
Maximum average forward rectified current (See Fig. 1) Per leg	$I_{F(AV)}$	15				Amps
Peak repetitive forward current per leg (rated V_R, sq. wave, 20KHz) at T_C=105°C	I_{FRM}	30				Amps
Peak forward surge current 8.3ms single half sine-wave superimposed on rated load (JEDEC Method) per leg	I_{FSM}	200				Amps
Peak repetitive reverse surge current per leg at t_p = 2.0us, 1KHz (Note 1)	I_{RRM}	2.0		1.0		Amps
Voltage rate of change at (rated V_R)	dv/dt	10,000				V/us
Maximum instantaneous forward voltage per leg (Note 2)						
at I_F=15A, T_C=25°C	V_F	-		0.75		Volt
at I_F=15A, T_C=125°C	V_F	0.60		0.65		Volt
at I_F=30A, T_C=25°C	V_F	0.76		-		Volt
at I_F=30A, T_C=125°C	V_F	0.72		-		Volt
Maximum instantaneous reverse current at rated DC blocking voltage per leg (Note 2) T_C=25°C	I_R	1.0		5.0		mA
Maximum instantaneous reverse current at rated DC blocking voltage per leg (Note 2) T_C=125°C	I_R	60		100		mA
Thermal resistance from junction to case per leg	$R_{\theta JC}$	1.4				°C/W
Operating junction temperature range	T_J	-55 to +150				°C
Storage temperature range	T_{STG}	-55 to +150				°C

Notes: 1. 2.0us pulse width, f = 1.0 KHZ

2. Pulse test: 300us pulse width, 1% duty cycle

RATINGS AND CHARACTERISTIC CURVES

(T_A = 25°C unless otherwise noted)

Fig. 1 – Forward Current Derating Curve

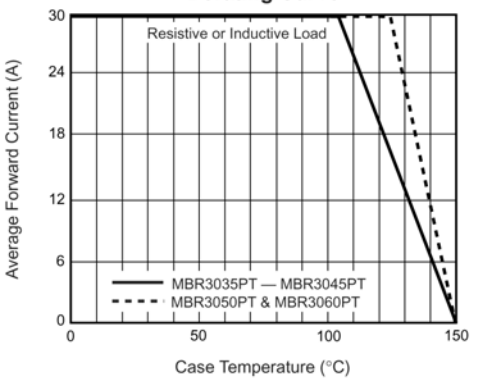


Fig. 2 – Maximum Non-Repetitive Peak Forward Surge Current Per Leg

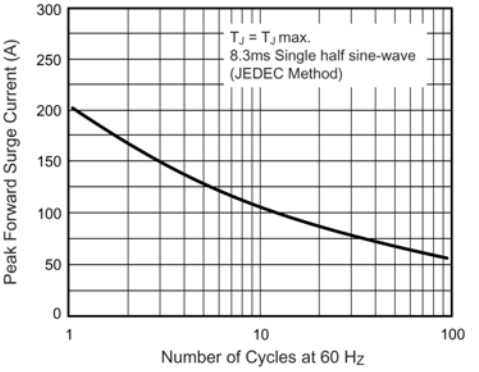


Fig. 3 – Typical Instantaneous Forward Characteristics Per Leg

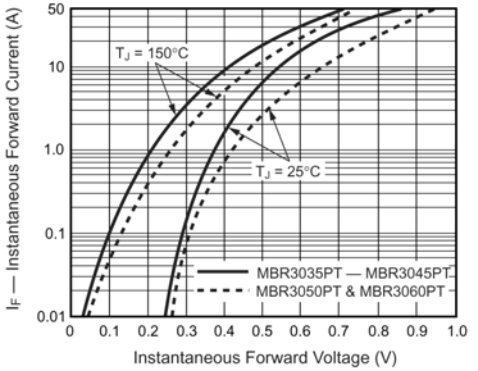


Fig. 4 – Typical Reverse Characteristics Per Leg

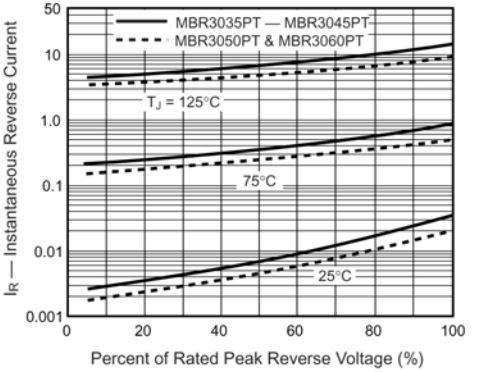


Fig. 5 – Typical Junction Capacitance Per Leg

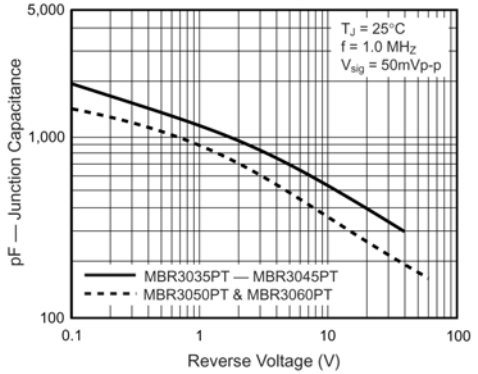


Fig. 6 – Typical Transient Thermal Impedance Per Leg