Schottky Diode

MBR750

50V / 7,5A

DATASHEET

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OEM – General Semiconductor

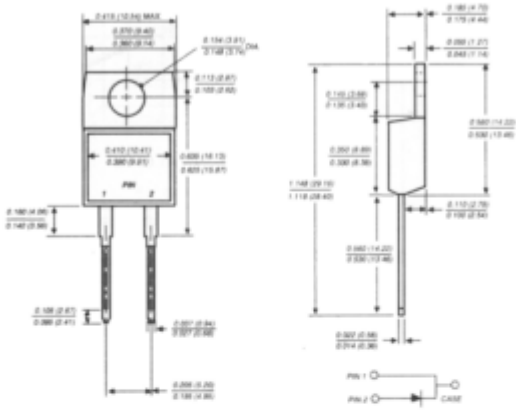
Source: General Semiconductor Databook 1998

MBR735 THRU MBR760

SCHOTTKY RECTIFIER

***Reverse Voltage** - 35 to 60 Volts **Forward Current** - 7.5 Amperes*

TO-220AC



Dimensions in inches and (millimeters)

FEATURES

- Plastic package has Underwriters Laboratory Flammability Classifications 94V-0
- Metal to silicon rectifier, 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, 0.25" (6.35mm) from case

MECHANICAL DATA

Case: JEDEC TO-220AC molded plastic body
Terminals: Lead solderable per MIL-STD-750, Method 2026
Polarity: As marked
Mounting Position: Any
Mounting Torque: 5 in. - lbs. max.
Weight: 0.08 ounces, 2.24 grams

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.

	SYMBOLS	MBR735	MBR745	MBR750	MBR760	UNITS
Maximum repetitive peak reverse voltage	V_{RRM}	35	45	50	60	Volts
Maximum 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)	$I_{(AV)}$	7.5				Amps
Peak repetitive forward current (square wave, 20 KHz) at T_C=105°C	I_{FRM}	15.0				Amps
Peak forward surge current, 8.3ms single half sine-wave superimposed on rated load (JEDEC Method)	I_{FSM}	150.0				Amps
Peak repetitive reverse surge current (NOTE 1)	I_{RRM}	1.0		0.5		Amps
Maximum instantaneous forward voltage at (NOTE 2) I_F=7.5A, T_C=25°C	V_F	-		0.75		Volts
I_F=7.5A, T_C=125°C		0.57		0.65		
I_F=15A, T_C=25°C		0.84		-		
I_F=15A, T_C=125°C		0.72		-		
Maximum instantaneous reverse current at rated DC blocking voltage (NOTE 1) T_C=25°C	I_R	0.1		0.5		mA
T_C=125°C		15.0		50		
Voltage rate of change (rated V_R)	dv/dt	10,000				V/µs
Maximum thermal resistance, (NOTE 3)	$R_{\theta JC}$	3.0				°C/W
	$R_{\theta JA}$	60.0				
Operating junction temperature range	T_J	-65 to +150				°C
Storage temperature range	T_{STG}	-65 to +175				°C

NOTES:
(1) 2.0µs, pulse width, f=1.0 KHz
(2) Pulse test: 300µs pulse width, 1% duty cycle
(3) Thermal resistance from junction to case and/or thermal resistance from junction to ambient

RATINGS AND CHARACTERISTIC CURVES MBR735 THRU MBR760

FIG. 1 - FORWARD CURRENT DERATING CURVE

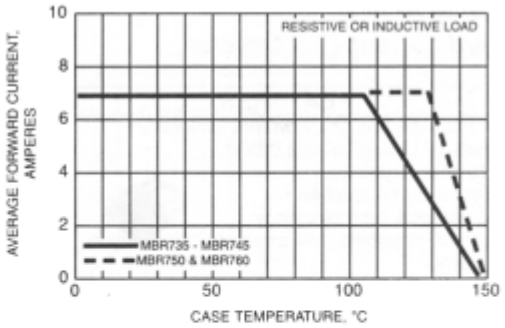


FIG. 2 - MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

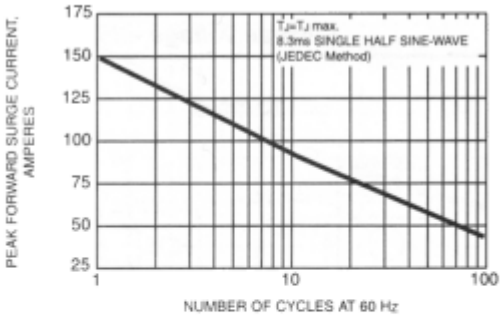


FIG. 3 - TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

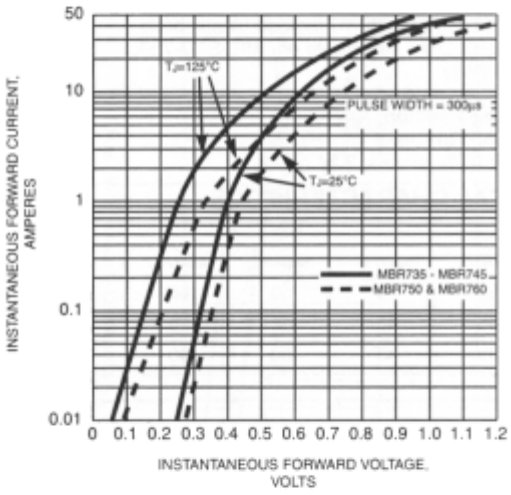


FIG. 4 - TYPICAL REVERSE CHARACTERISTICS

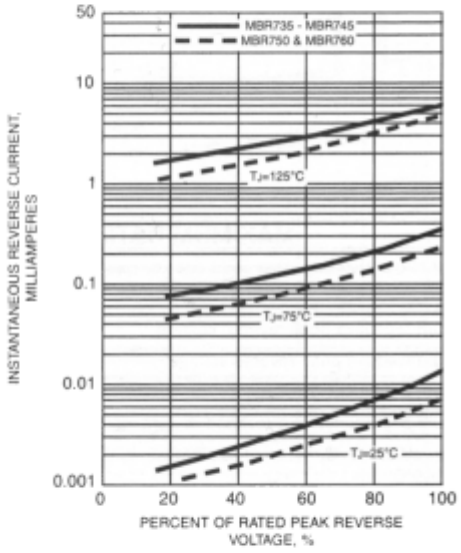


FIG. 5 - TYPICAL JUNCTION CAPACITANCE

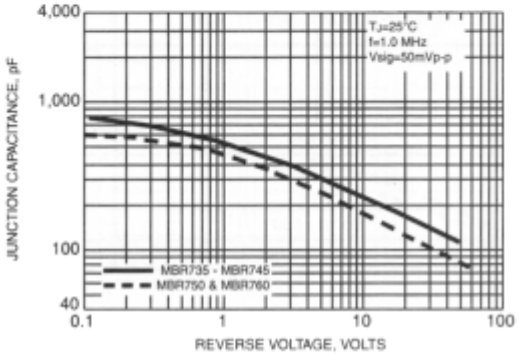


FIG. 6 - TYPICAL TRANSIENT THERMAL IMPEDANCE