

# DIGITRON SEMICONDUCTORS

MBR150-MBR160

1A SCHOTTKY RECTIFIER

## MAXIMUM RATINGS

Rating	Symbol	MBR150	MBR160	Unit
Peak repetitive reverse voltage	$V_{RRM}$			
Working peak reverse voltage	$V_{RWM}$	50	60	V
DC blocking voltage	$V_R$			
RMS reverse voltage	$V_{R(RMS)}$	35	42	V
Average rectified forward current <sup>(1)</sup> ( $V_{R(equiv)} \leq 0.2V_{R(dc)}$ , $R_{\theta JA} = 80^{\circ}C/W$ , PC board mounting, $T_A = 55^{\circ}C$ )	$I_o$	1 @ $T_C = 90^{\circ}C$		A
Non-repetitive peak surge current ( $T_A = 70^{\circ}C$ ) (surge applied at rated load conditions, halfwave, single phase, 60Hz)	$I_{FSM}$	25		A
Operating junction and storage temperature range	$T_J, T_{stg}$	-65 to +150		$^{\circ}C$
Maximum thermal resistance Junction to ambient	$R_{\theta JA}$	80		$^{\circ}C/W$

## ELECTRICAL CHARACTERISTICS ( $T_C = 25^{\circ}C$ unless otherwise noted)

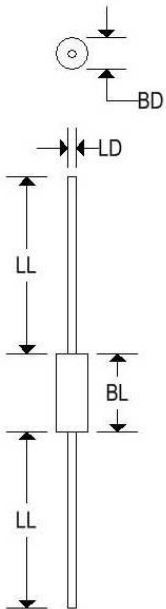
Parameter	Symbol	MBR150	MBR160	Unit
Instantaneous forward voltage <sup>(2)</sup> ( $I_F = 0.1A$ ) ( $I_F = 1.0A$ ) ( $I_F = 3.0A$ )	$V_F$	0.550 0.750 1.000		V
Instantaneous reverse current <sup>(2)</sup> (Rated dc voltage, $T_C = 25^{\circ}C$ ) (Rated dc voltage, $T_C = 100^{\circ}C$ )	$I_R$	0.5 5.0		mA

Note 1: Lead temperature reference is cathode lead 1/32" from case.

Note 2: Pulse test: Pulse width = 300 $\mu$ s, duty cycle  $\leq$  2.0%.

## MECHANICAL CHARACTERISTICS

Case	DO-41
Marking	Body painted, alpha-numeric
Polarity	Cathode band



	DO-41			
	Inches		Millimeters	
	Min	Max	Min	Max
BD	-	0.107	-	2.720
BL	-	0.205	-	5.207
LD	0.028	0.034	0.711	0.864
LL	1.000	-	25.400	-

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Available Non-RoHS (standard) or RoHS compliant (add PBF suffix).

Available as "HR" (high reliability) screened per MIL-PRF-19500, JANTX level. Add "HR" suffix to base part number.

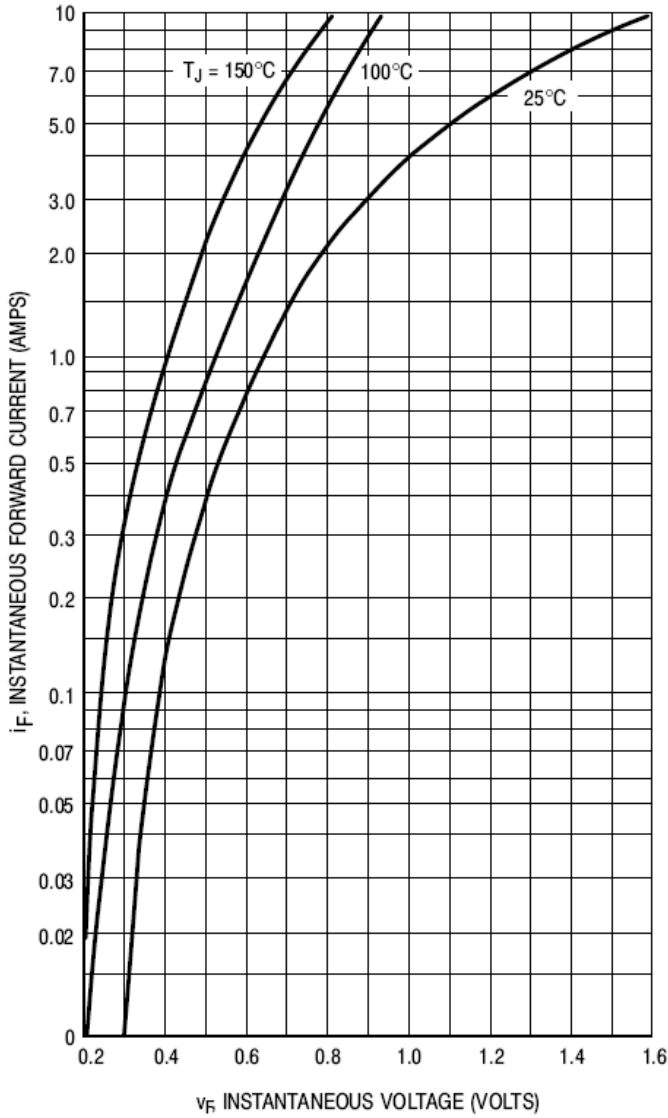


Figure 1. Typical Forward Voltage

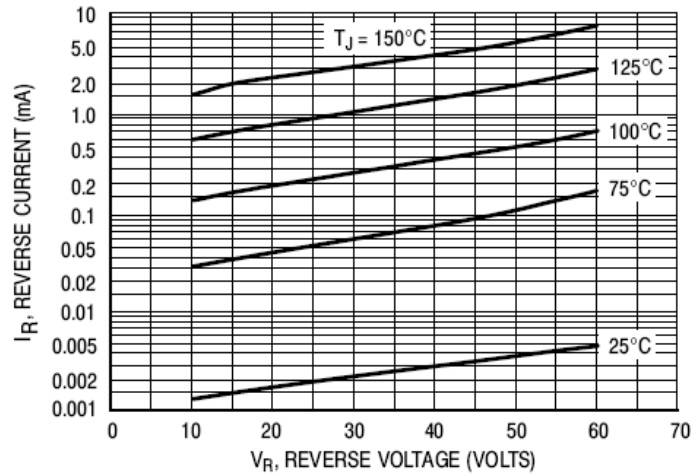


Figure 2. Typical Reverse Current\*

\*The curves shown are typical for the highest voltage device in the voltage grouping. Typical reverse current for lower voltage selections can be estimated from these same curves if  $V_R$  is sufficiently below rated  $V_R$ .

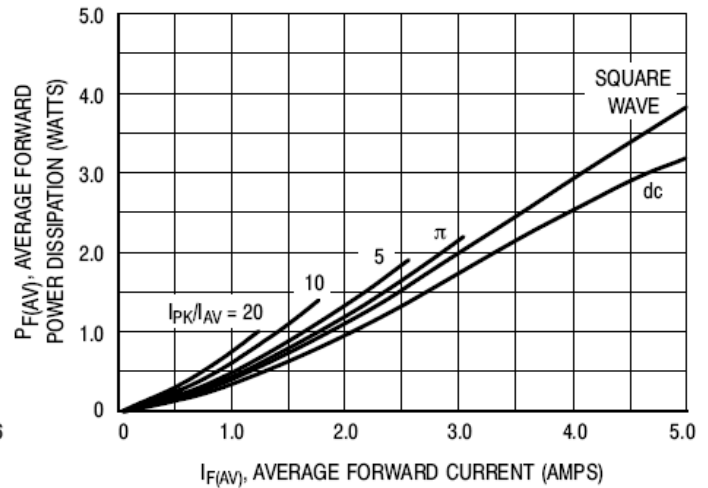


Figure 3. Forward Power Dissipation

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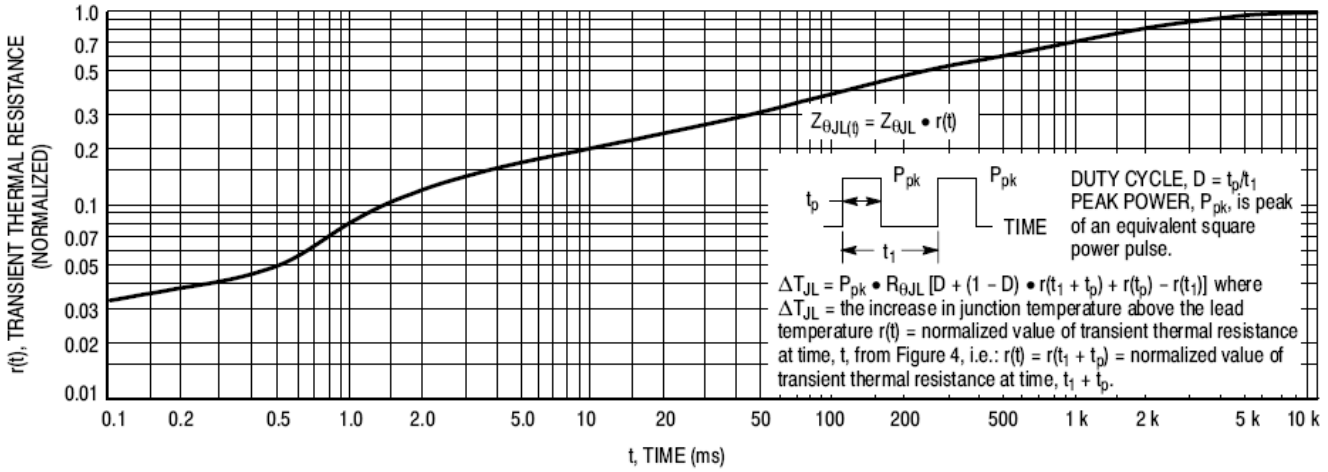


Figure 4. Thermal Response

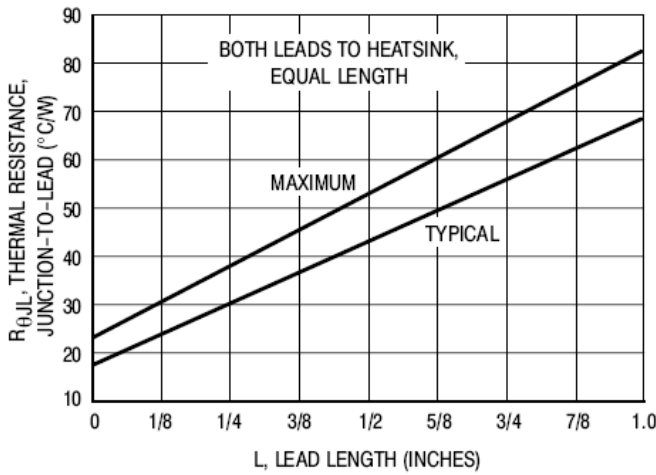


Figure 5. Steady-State Thermal Resistance

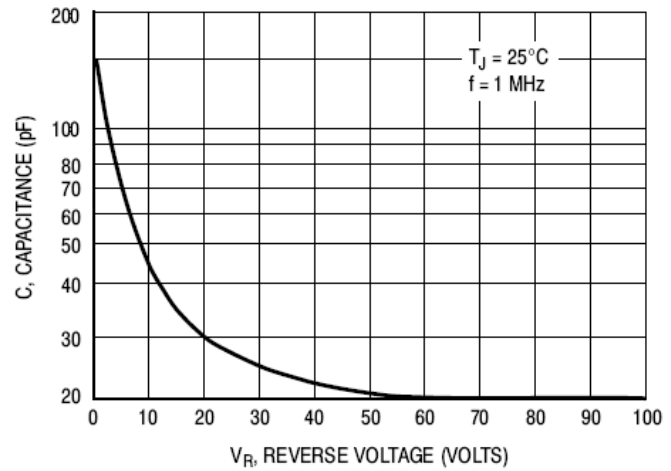


Figure 6. Typical Capacitance

**NOTE 1. — MOUNTING DATA:**

Data shown for thermal resistance junction-to-ambient ( $R_{\theta JA}$ ) for the mounting shown is to be used as a typical guideline values for preliminary engineering or in case the tie point temperature cannot be measured.

**Typical Values for  $R_{\theta JA}$  in Still Air**

Mounting Method	Lead Length, L (in)				$R_{\theta JA}$
	1/8	1/4	1/2	3/4	
1	52	65	72	85	$^{\circ}C/W$
2	67	80	87	100	$^{\circ}C/W$
3	—	—	50	—	$^{\circ}C/W$

**NOTE 2. — THERMAL CIRCUIT MODEL:**

(For heat conduction through the leads)

