

**MOTOROLA**  
**SEMICONDUCTOR**  
 TECHNICAL DATA

**1N1199B**  
 thru  
**1N1206B**

1N1204B is a  
 Motorola Preferred Device

**MEDIUM-CURRENT SILICON RECTIFIERS**

Compact, highly efficient silicon rectifiers for medium-current applications requiring

- High Current Surge —  
 250 Amperes @  $T_J = 200^\circ\text{C}$
- Peak Performance at Elevated Temperature —  
 12 Amperes @  $T_C = 150^\circ\text{C}$

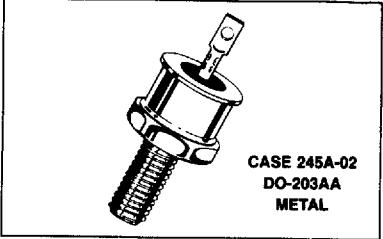
**MEDIUM-CURRENT SILICON RECTIFIERS**

50-600 VOLTS  
 12 AMPERES

DIFFUSED JUNCTION

**\*MAXIMUM RATINGS**

Characteristic	Symbol	1N 1199B	1N 1200B	1N 1202B	1N 1204B	1N 1206B	Unit
Peak Repetitive Reverse Voltage	VRRM						Volts
Working Peak Reverse Voltage	VRWM	50	100	200	400	600	Volts
DC Blocking Voltage	VR						Volts
Non-Repetitive Peak Reverse Voltage (Halfwave, single phase, 60 Hz peak)	VRSM	100	200	350	600	800	Volts
Average Rectified Forward Current (Single phase resistive load 60 Hz, $T_C = 150^\circ\text{C}$ )	$I_O$	← 12 →					Amp
Non-Repetitive Peak Surge Current (Surge applied at rated load conditions, half wave single phase, 60 Hz)	$I_{FSM}$	← 250 (for 1 cycle) →					Amp
Operating and Storage Junction Temperature Range	$T_J, T_{stg}$	← 65 to +200 →					$^\circ\text{C}$



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**\*THERMAL CHARACTERISTICS**

Characteristic	Symbol	Max	Unit
Thermal Resistance Junction to Case	$R_{\theta JC}$	2.0	$^\circ\text{C}/\text{W}$

**\*ELECTRICAL CHARACTERISTICS**

Characteristic and Conditions	Symbol	Max	Unit
Maximum Instantaneous Forward Voltage ( $I_F = 40 \text{ A}, T_C = 25^\circ\text{C}$ )	$V_F$	1.2	Volts
Maximum Reverse Current (Rated dc voltage $T_C = 150^\circ\text{C}$ )	$I_R$	1.0	mA
Maximum Average Reverse Current at Rated Conditions	$I_{RO}$	0.9	mA
DC Forward Voltage ( $I_F = 12 \text{ A}, T_C = 25^\circ\text{C}$ )	$V_F$	1.1	Volts
Reverse Recovery Time ( $I_{FM} = 40 \text{ A}$ $di/dt = 25 \text{ A}/\mu\text{s}$ to $I_{FM} = 0$ $t_p \geq 4.0 \mu\text{s}$ 60 pulses/second $25^\circ\text{C}$ )	$t_{rr}$	5.0	$\mu\text{s}$

\*Indicates JEDEC registered data

**MECHANICAL CHARACTERISTICS**

**CASE:** Welded, hermetically sealed construction  
**FINISH:** All external surfaces are corrosion-resistant and the terminal lead is readily solderable  
**POLARITY:** Cathode to case (reverse polarity units are available and denoted by an "R" suffix, i.e., 1N1202RB)  
**MOUNTING POSITION:** Any  
**MOUNTING TORQUE:** 15 in-lb max  
**MAXIMUM TERMINAL TEMPERATURE FOR SOLDERING PURPOSES:** 275 $^\circ\text{C}$  for 10 seconds at 3 kg tension  
**WEIGHT:** 6 grams (approx.)