SCANSWITCH™

Power Rectifier For High and Very High Resolution Monitors

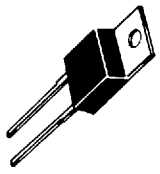
MR10120E

Motorola Preferred Device

This state-of-the-art Power Rectifier is specifically designed for use as a Damper Diode in horizontal deflection circuits for high and very high resolution monitors. In these applications, the outstanding performance of the MR10120E is fully realized when paired with either the MW16206 or MJF16206 monitor specific, 1200 volt bipolar power transistor.

- 1200 Volt Blocking Voltage
- 20 mJ Avalanche Energy (Guaranteed)
- 12 Volt (Typical) Peak Transient Overshoot Voltage
- 135 ns (Typical) Forward Recovery Time

SCANSWITCH POWER RECTIFIER 10 AMPERES 1200 VOLTS



CASE 221B-02 TO-220AC

3

MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	V_{RRM} V_{RWM} V_R	1200	Volts
Average Rectified Forward Current (Rated V_R) T_C = 125°C	$I_{F(AV)}$	10	Amps
Peak Repetitive Forward Current (Rated V_R, Square Wave, 20 kHz), T_C = 125°C	I_{FRM}	20	Amps
Non-repetitive Peak Surge Current (Surge applied at rated load conditions, halfwave, single phase, 60 Hz)	I_{FSM}	100	Amps
Operating Junction Temperature	T_J	−65 to +125	°C
Controlled Avalanche Energy	W_{AVAL}	20	mJ

THERMAL CHARACTERISTICS

Thermal Resistance — Junction to Case	$R_{\theta JC}$	2.0	°C/W

ELECTRICAL CHARACTERISTICS

Characteristic	Symbol	Typ	Max	Unit
Maximum Instantaneous Forward Voltage (1) (i_F = 6.5 Amps, T_J = 125°C) (i_F = 6.5 Amps, T_J = 25°C)	v_F	 0.9 1.0	 1.3 1.5	Volts
Maximum Instantaneous Reverse Current (1) (Rated dc Voltage, T_J = 25°C) (Rated dc Voltage, T_J = 125°C)	i_R	 5.0 50	 50 500	μA
Maximum Reverse Recovery Time (I_F = 1.0 Amps, di/dt = 50 Amps/μs)	t_{rr}	0.75	1.0	μs
Maximum Forward Recovery Time (I_F = 6.5 Amps, di/dt = 12 Amps/μs) (As Measured on a Deflection Circuit)	t_{fr}	135	175	ns
Peak Transient Overshoot Voltage	V_{RFM}	12	14	Volts

(1) Pulse Test: Pulse Width = 300 μs, Duty Cycle ≤ 2.0%

SCANSWITCH is a trademark of Motorola Inc.

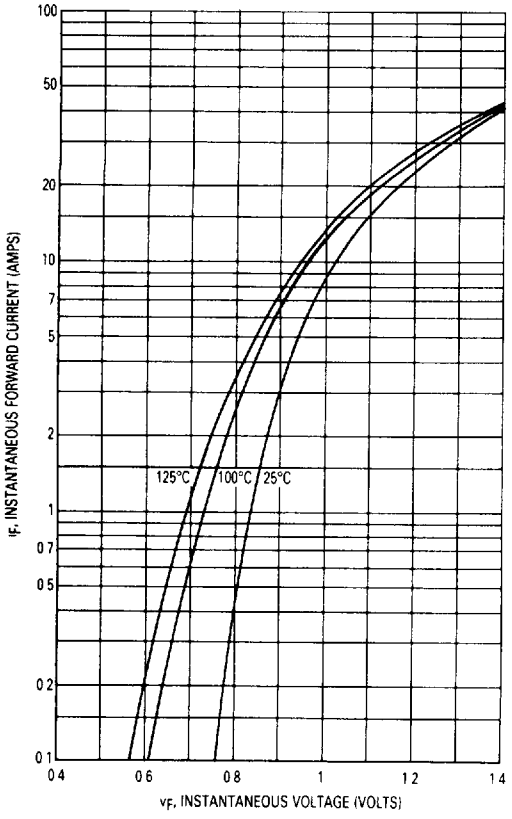


Figure 1. Typical Forward Voltage

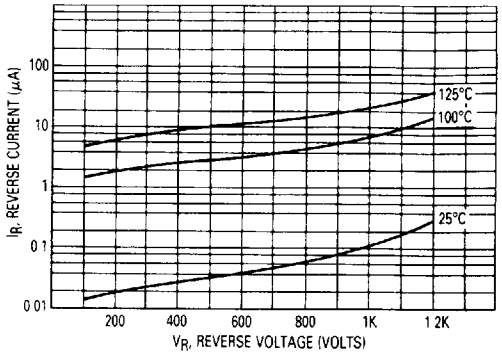


Figure 2. Typical Reverse Current

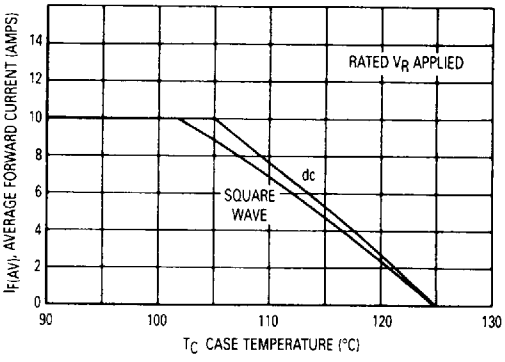


Figure 3. Current Derating (Case)

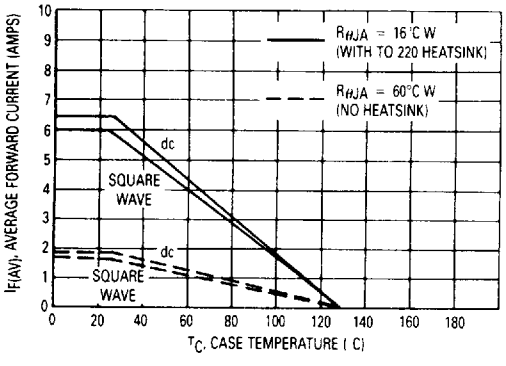


Figure 4. Current Derating Ambient

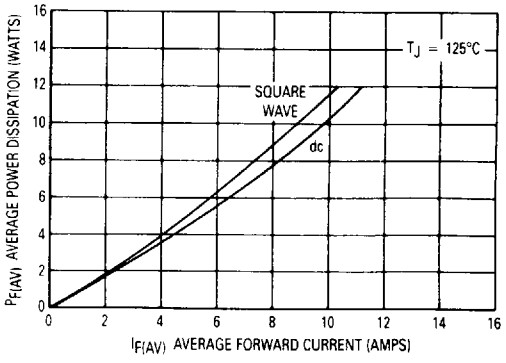


Figure 5. Forward Power Dissipation