

DIGITRON SEMICONDUCTORS

MR10120E

10A SCHOTTKY RECTIFIER

MAXIMUM RATINGS

Rating	Symbol	MR10120E	Unit
Peak repetitive reverse voltage	V_{RRM}	1200	V
Working peak reverse voltage	V_{RWM}		
DC blocking voltage	V_R		
Average rectified forward current (Rated V_R)	$I_{F(AV)}$	10 @ $T_C = 125^\circ\text{C}$	A
Peak repetitive forward current (Rated V_R , square wave, 20kHz)	I_{FRM}	20 @ $T_C = 125^\circ\text{C}$	A
Non-repetitive peak surge current (surge applied at rated load conditions, halfwave, single phase, 60Hz)	I_{FSM}	100	A
Operating and storage junction temperature range	T_J, T_{stg}	-65 to +125	$^\circ\text{C}$
Controlled avalanche energy	W_{AVAL}	20	mJ
Maximum thermal resistance Junction to case	$R_{\theta JC}$	2.0	$^\circ\text{C/W}$

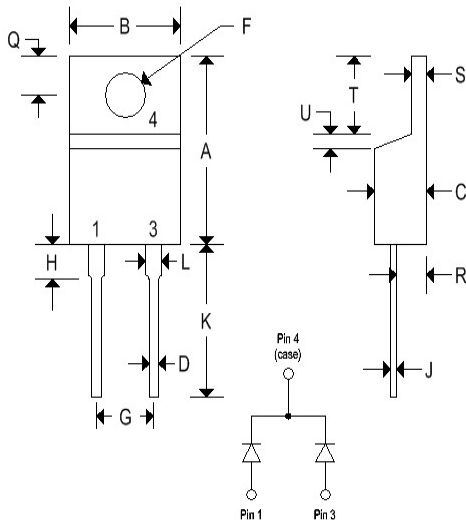
ELECTRICAL CHARACTERISTICS ($T_J = 25^\circ\text{C}$ unless otherwise noted)

Parameter	Symbol	MR10120E		Unit
		Typ	Max	
Maximum instantaneous forward voltage ⁽¹⁾ ($I_F = 6.5\text{A}, T_J = 125^\circ\text{C}$) ($I_F = 6.5\text{A}, T_J = 25^\circ\text{C}$)	V_F	0.9 1.0	1.3 1.5	V
Maximum instantaneous reverse current ⁽¹⁾ (Rated dc voltage, $T_J = 25^\circ\text{C}$) (Rated dc voltage, $T_J = 125^\circ\text{C}$)	I_R	5.0 50	50 500	μA
Maximum reverse recovery time ($I_F = 1.0\text{A}, di/dt = 50\text{A}/\mu\text{s}$)	t_{rr}	0.75	1.0	μs
Peak transient overshoot voltage	t_{fr}	135	175	ns
Maximum forward recovery time ($I_F = 6.5\text{A}, di/dt = 12\text{A}/\mu\text{s}$)	V_{RFM}	12	14	V

Note 1: Pulse test: Pulse width = 300 μs , duty cycle $\leq 2.0\%$.

MECHANICAL CHARACTERISTICS

Case	TO-220AC
Marking	Alpha-numeric
Pin out	See below



	TO-220AC			
	Inches		Millimeters	
	Min	Max	Min	Max
A	0.595	0.620	15.110	15.750
B	0.380	0.405	9.650	10.290
C	0.160	0.190	4.060	4.820
D	0.142	0.147	3.610	3.730
F	0.142	0.147	3.610	3.730
G	0.190	0.210	4.830	5.330
H	0.110	0.130	2.790	3.300
J	0.018	0.025	0.460	0.640
K	0.500	0.562	12.700	14.270
L	0.045	0.050	1.140	1.270
Q	0.100	0.120	2.540	3.040
R	0.080	0.110	2.040	2.790
S	0.045	0.055	1.140	1.390
T	0.235	0.255	5.970	6.480
U	0.030	0.050	0.760	1.270

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.

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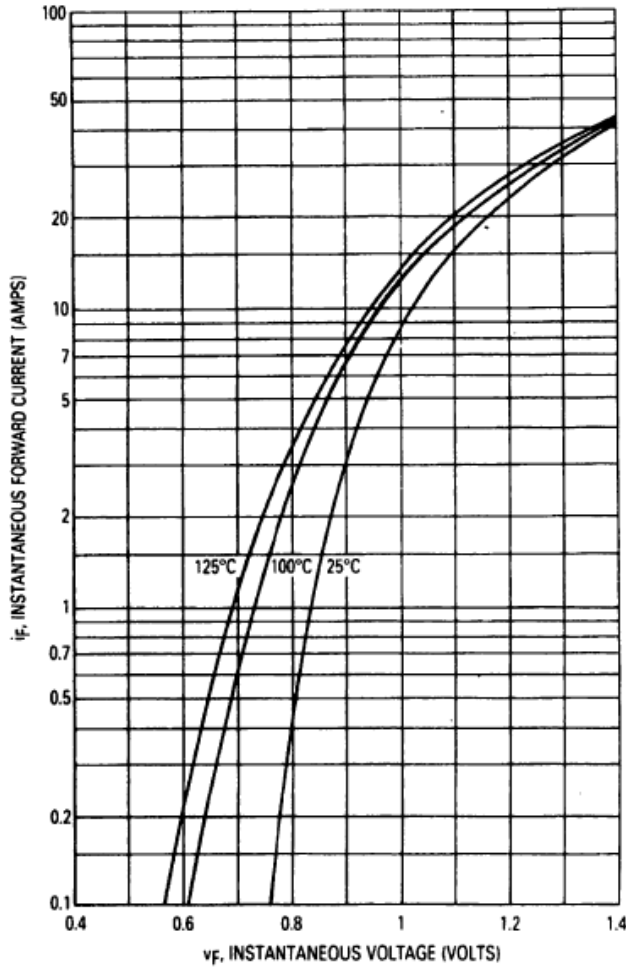


Figure 1. Typical Forward Voltage

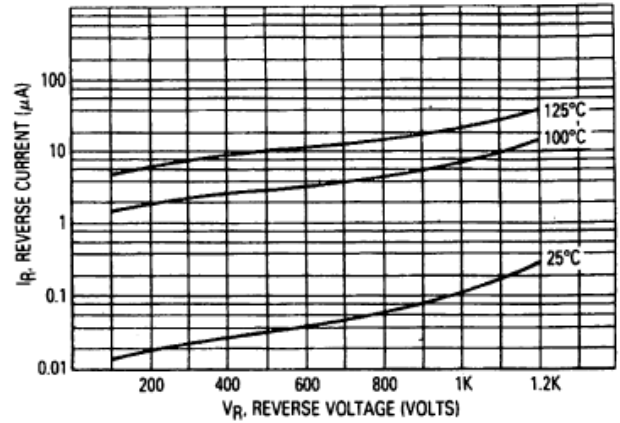


Figure 2. Typical Reverse Current

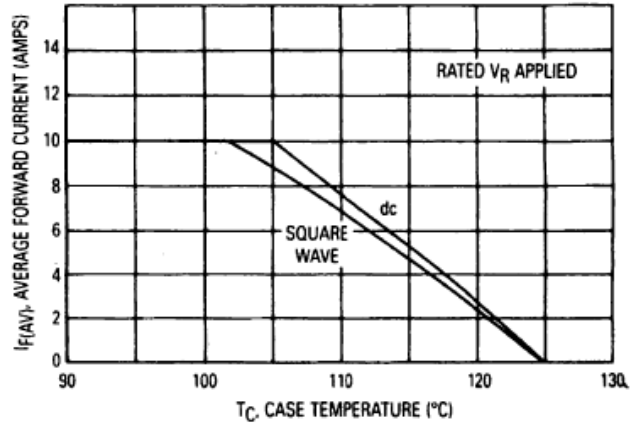


Figure 3. Current Derating (Case)

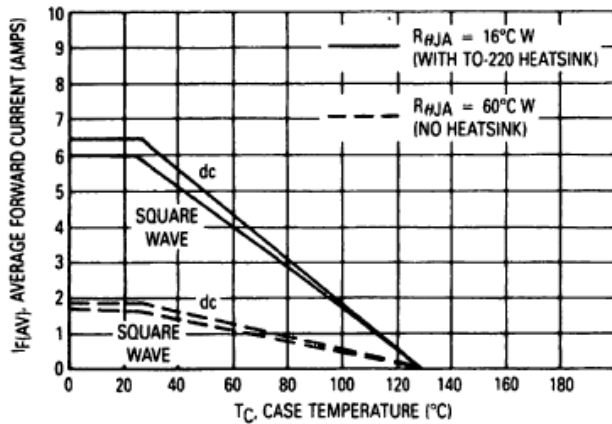


Figure 4. Current Derating Ambient

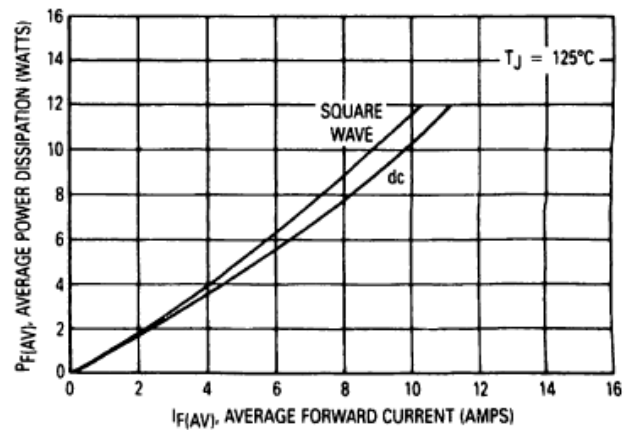


Figure 5. Forward Power Dissipation