

DIGITRON SEMICONDUCTORS

A180 SERIES HIGH POWER RECTIFIER

MAXIMUM RATINGS

Rating	Symbol	A180	Unit
RMS forward current	$I_{F(RMS)}$	236	A
Average forward current	$I_{F(AV)}$	150	A
One cycle surge current	I_{FSM}	3400	A
I^2t for fusing, times ≥ 1.0 milliseconds	I^2t	22000	A ² s
Operating and storage temperature range	T_J, T_{stg}	-40 to +200	°C
Mounting torque		90 to 100 10.2 to 11.3	In-lbs N-m

VOLTAGE RATINGS

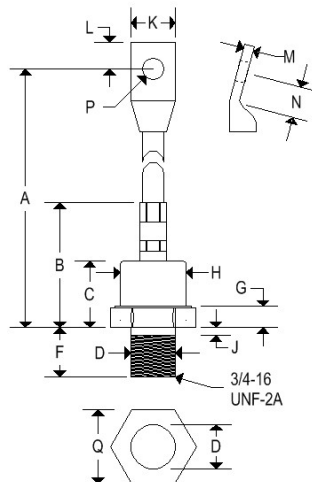
Parameter	A180 A	A180 B	A180 C	A180 D	A180 E	A180 M	A180 S	A180 N	A180 T	A180 P	A180 PA	A180 PB	A180 PC	A180 PD	A180 PE
Voltage	100V	200V	300V	400V	500V	600V	700V	800V	900V	1000V	1100V	1200V	1300V	1400V	1500V

ELECTRICAL AND THERMAL CHARACTERISTICS

Characteristic	Symbol	Test Condition	A180	Unit
Current – conducting state maximums				
Forward voltage drop	V_{FM}	$T_C = 143^\circ\text{C}$, $I_{F(AV)} = 150\text{A}, 471\text{A peak}$	1.3	V
Voltage – blocking state maximums				
Repetitive peak reverse voltage (rated limit)	V_{RRM}		1600	V
Non-repetitive peak reverse voltage (rated limit)	V_{RSM}	$V \leq 5.0\text{msec}$	1800	V
Reverse leakage current, mA peak	I_{RRM}	T_J at max., $V_{RRM} = \text{Rated}$	20	mA
Thermal characteristics				
Maximum resistance, junction to case	$R_{\theta JC}$		0.3	°C/W

MECHANICAL CHARACTERISTICS

Case	DO-9(R)
Marking	Alpha-numeric
Normal polarity	Cathode is stud
Reverse polarity	Anode is stud (add "R" suffix)



	DO-9(R)			
	Inches		Millimeters	
	Min	Max	Min	Max
A	5.300	5.900	134.60	149.90
B	-	2.100	-	53.340
C	-	1.120	-	28.450
D	-	0.749	-	19.020
F	0.793	0.828	20.140	21.030
G	0.310	0.360	7.870	9.140
H	-	1.100	-	27.940
J	-	0.125	-	3.180
K	-	0.755	-	19.180
L	0.423	0.453	10.740	11.510
M	-	0.170	-	4.320
N	0.470	0.530	11.940	13.460
P	0.338	0.350	8.580	8.890
Q	1.218	1.250	30.940	31.750

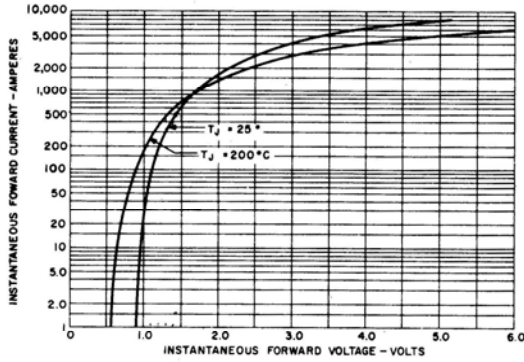
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A180 SERIES

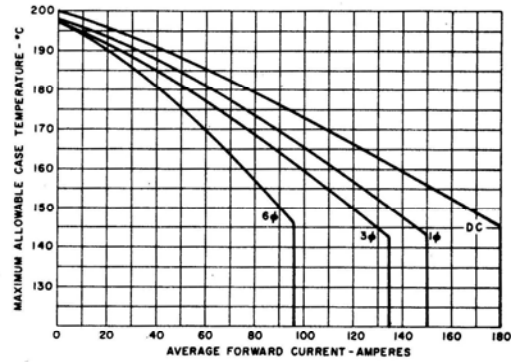
HIGH POWER RECTIFIER

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

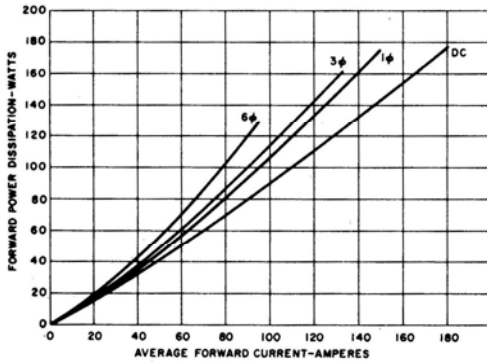
Available as "HR" (high reliability) screened per MIL-PRF-19500, JANTX level. Add "HR" suffix to base part number.



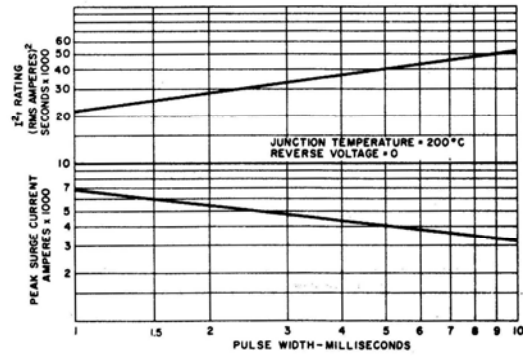
MAXIMUM FORWARD CHARACTERISTICS



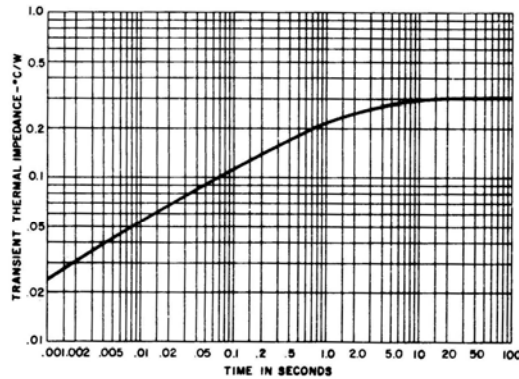
MAXIMUM CASE TEMPERATURE VS. AVERAGE FORWARD CURRENT



AVERAGE FORWARD POWER DISSIPATION VS. AVERAGE FORWARD CURRENT



SUB-CYCLE SURGE FORWARD CURRENT AND I^2t RATING VS. PULSE TIME FOLLOWING RATED LOAD CONDITIONS



TRANSIENT THERMAL IMPEDANCE – JUNCTION-TO-CASE