

# 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 $\geq 1.0$ milliseconds	$I^2t$	22000	$A^2s$
Operating and storage temperature range	$T_J, T_{stg}$	-40 to +200	$^{\circ}C$
Mounting torque		90 to 100 10.2 to 11.3	In-lbs N-m

### VOLTAGE RATINGS

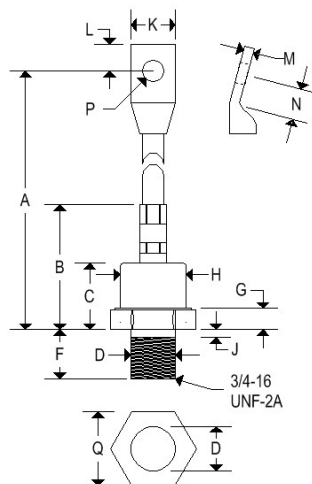
Parameter	A180 A	A180 B	A180 C	A180 D	A180 E	A180 M	A180 S	A180 N	A180 T	A180 P	A180 PA	A180 PB	A180 PC	A180 PD	A180 PE
Voltage	100V	200V	300V	400V	500V	600V	700V	800V	900V	1000V	1100V	1200V	1300V	1400V	1500V

### ELECTRICAL AND THERMAL CHARACTERISTICS

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

### 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

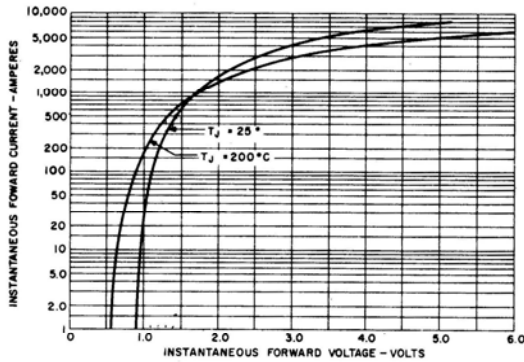
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## A180 SERIES

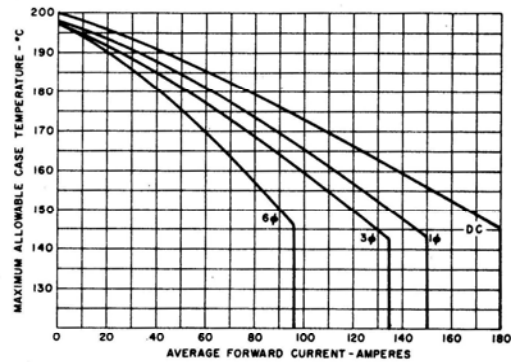
## HIGH POWER RECTIFIER

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

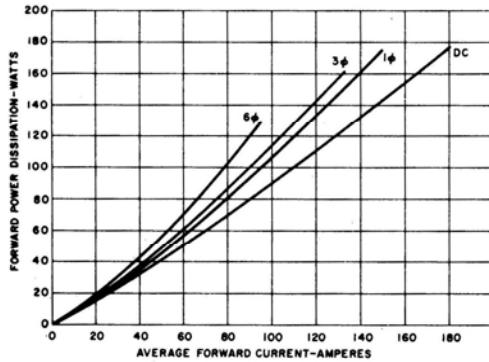
Available as "HR" (high reliability) screened per MIL-PRF-19500, JANTX level. Add "HR" suffix to base part number.



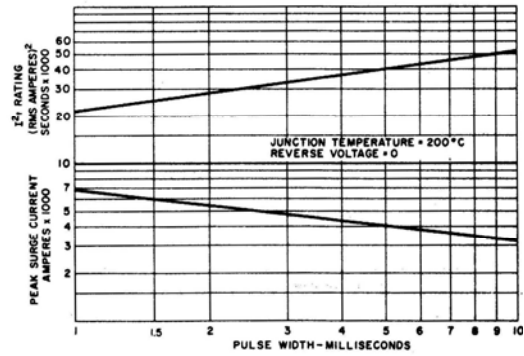
MAXIMUM FORWARD CHARACTERISTICS



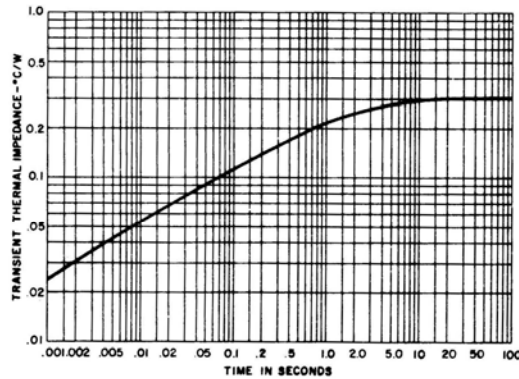
MAXIMUM CASE TEMPERATURE VS. AVERAGE FORWARD CURRENT



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