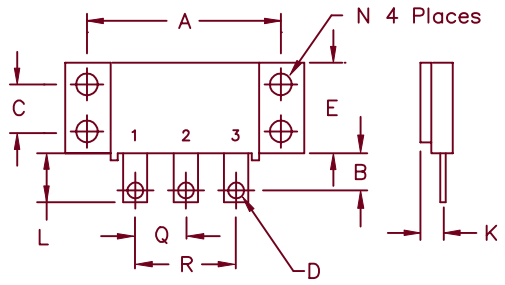
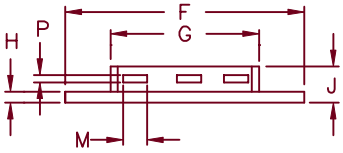
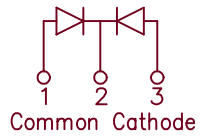
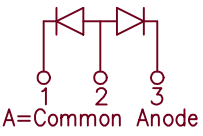
Ultrafast Recovery Modules

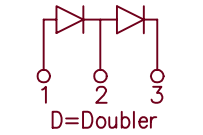
UFT140, 141 & 142











Notes:
Baseplate: Nickel plated copper; electrically isolated
Pins: Nickel plated copper

Dim.	Inches		Millimeters		
	Min.	Max.	Min.	Max.	Notes
A	1.995	2.005	50.67	50.93	
B	0.300	0.325	7.62	8.26	
C	0.495	0.505	12.57	12.83	
D	0.182	0.192	4.62	4.88	Dia.
E	0.990	1.010	25.15	25.65	
F	2.390	2.410	60.71	61.21	
G	1.500	1.525	38.10	38.70	
H	0.120	0.130	3.05	3.30	
J	---	0.400	---	10.16	
K	0.240	0.260	6.10	6.60	to Lead CL
L	0.490	0.510	12.45	12.95	
M	0.330	0.350	8.38	6.90	
N	0.175	0.195	4.45	4.95	Dia.
P	0.035	0.045	0.89	1.14	
Q	0.445	0.455	11.30	11.56	
R	0.890	0.910	22.61	23.11	

TO-249

Microsemi Catalog Number	Working Peak Reverse Voltage	Repetitive Peak Reverse Voltage
UFT14010*	100V	100V
UFT14015*	150V	150V
UFT14020*	200V	200V
UFT14130*	300V	300V
UFT14140*	400V	400V
UFT14250*	UFT14150* 500V	500V
UFT14260*	600V	600V
UFT14270*	700V	700V
UFT14280*	800V	800V

*Add Suffix A for Common Anode, D for Doubler

- Ultra Fast Recovery
- 175°C Junction Temperature
- V_{RRM} 100 to 800 Volts
- Electrically isolated base
- 2 X 70 Amp current rating

Electrical Characteristics

		UFT140	UFT141	UFT142	
Average forward current per pkg	$I_{F(AV)}$	140A	140A	140A	Square Wave
Average forward current per leg	$I_{F(AV)}$	70A	70A	70A	Square Wave
Case Temperature	T_C	115°C	97°C	92°C	$R_{\theta JC}$ = 1.0°C/W
Maximum surge current per leg	I_{FSM}	1000A	800A	700A	8.3ms, half sine, T_J = 175°C
Max peak forward voltage per leg	V_{FM}	.975V	1.25V	1.35V	I_{FM} = 70A: T_J = 25°C*
Max reverse recovery time per leg	trr	50ns	60ns	75ns	1/2A, 1A, 1/4A, T_J = 25°C
Max peak reverse current per leg	I_{RM}		3.0mA		V_{RRM}, T_J = 125°C*
Max peak reverse current per leg	I_{RM}		25µA		V_{RRM}, T_J = 25°C
Typical Junction capacitance	C_J	300pF	150pF	150pF	V_R = 10V, T_J = 25°C

*Pulse test: Pulse width 300 usec, Duty cycle 2%

Thermal and Mechanical Characteristics

Storage temp range	T_{STG}	-55°C to 175°C
Operating junction temp range	T_J	-55°C to 175°C
Max thermal resistance per leg	$R_{\theta JC}$	1.0°C/W Junction to case
Max thermal resistance per pkg	$R_{\theta JC}$	0.5°C/W Junction to case
Typical thermal resistance (greased)	$R_{\theta CS}$	0.1°C/W Case to sink
Mounting Torque		15-20 inch pounds
Weight		2.5 ounces (71 grams) typical

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UFT140

Figure 1
Typical Forward Characteristics – Per Leg

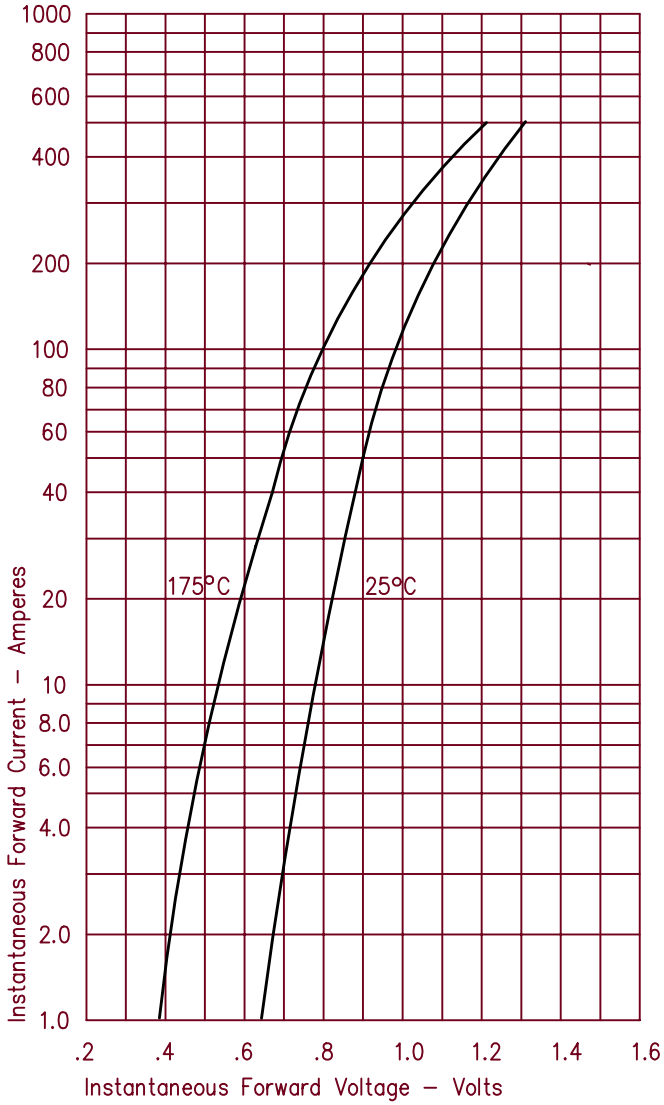


Figure 2
Typical Reverse Characteristics – Per Leg

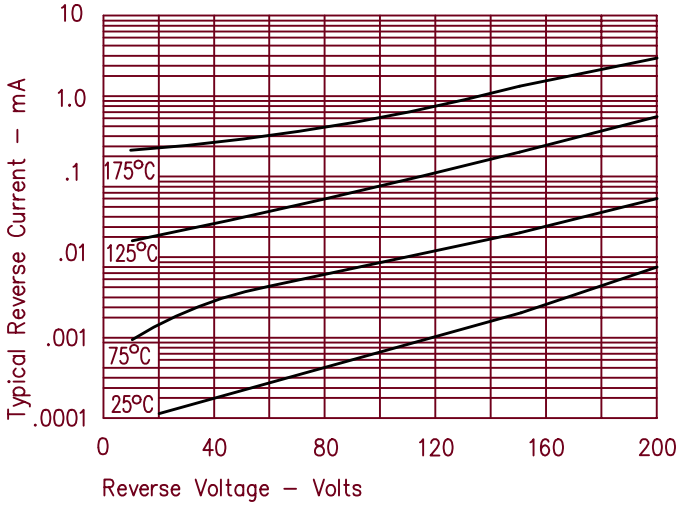


Figure 3
Typical Junction Capacitance – Per Leg

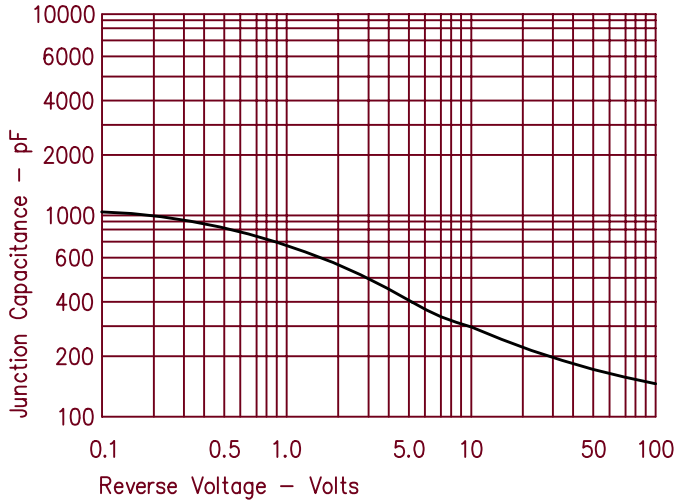


Figure 4
Forward Current Derating – Per Leg

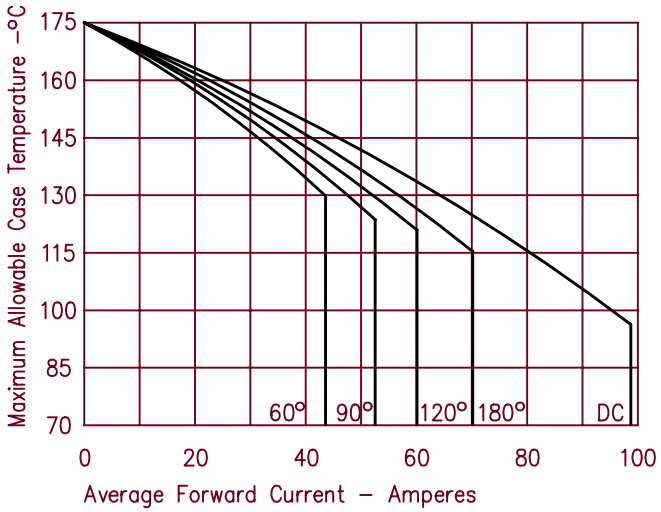
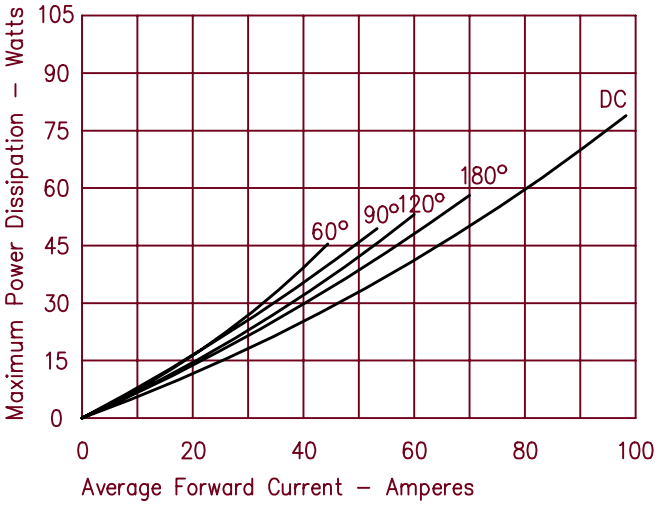


Figure 5
Maximum Forward Power Dissipation – Per Leg



UFT141

Figure 1
Typical Forward Characteristics – Per Leg

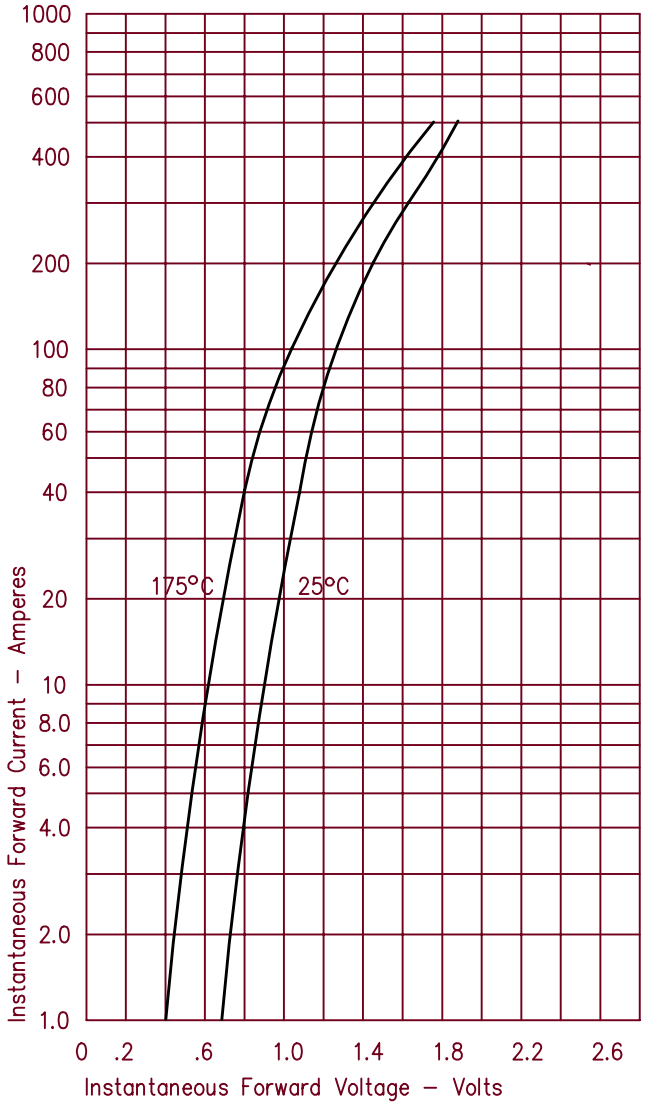


Figure 2
Typical Reverse Characteristics – Per Leg

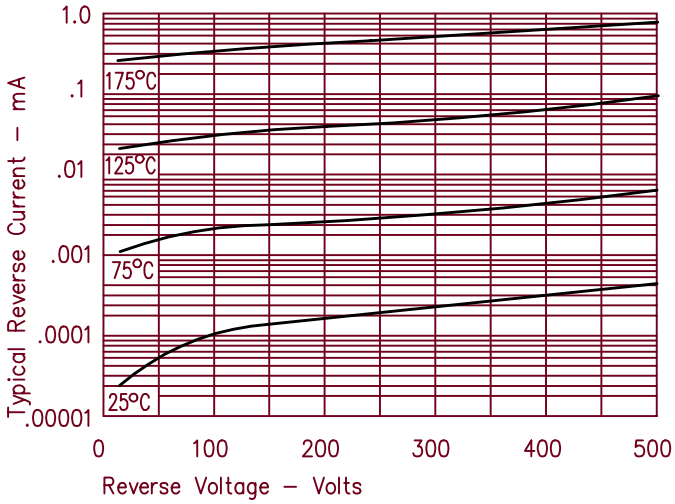


Figure 3
Typical Junction Capacitance – Per Leg

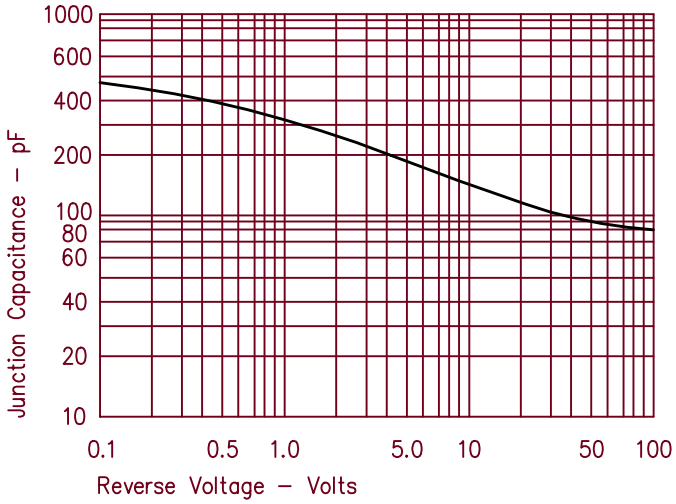


Figure 4
Forward Current Derating – Per Leg

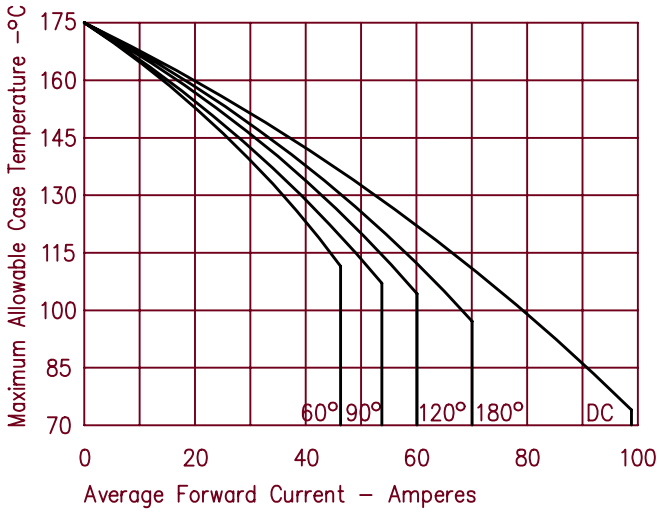
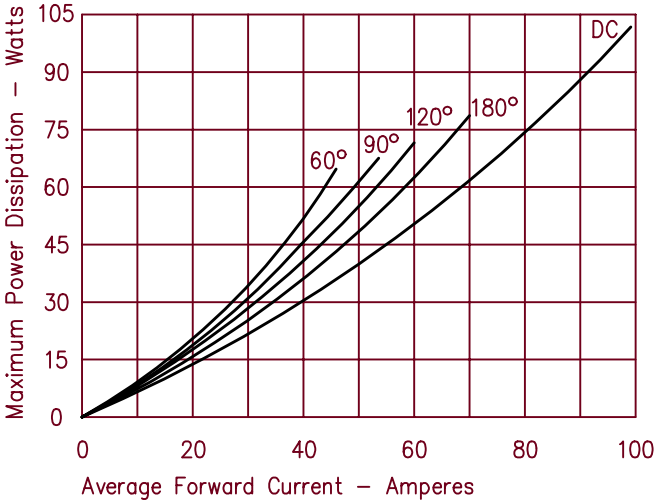


Figure 5
Maximum Forward Power Dissipation – Per Leg



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UFT142

Figure 1
Typical Forward Characteristics – Per Leg

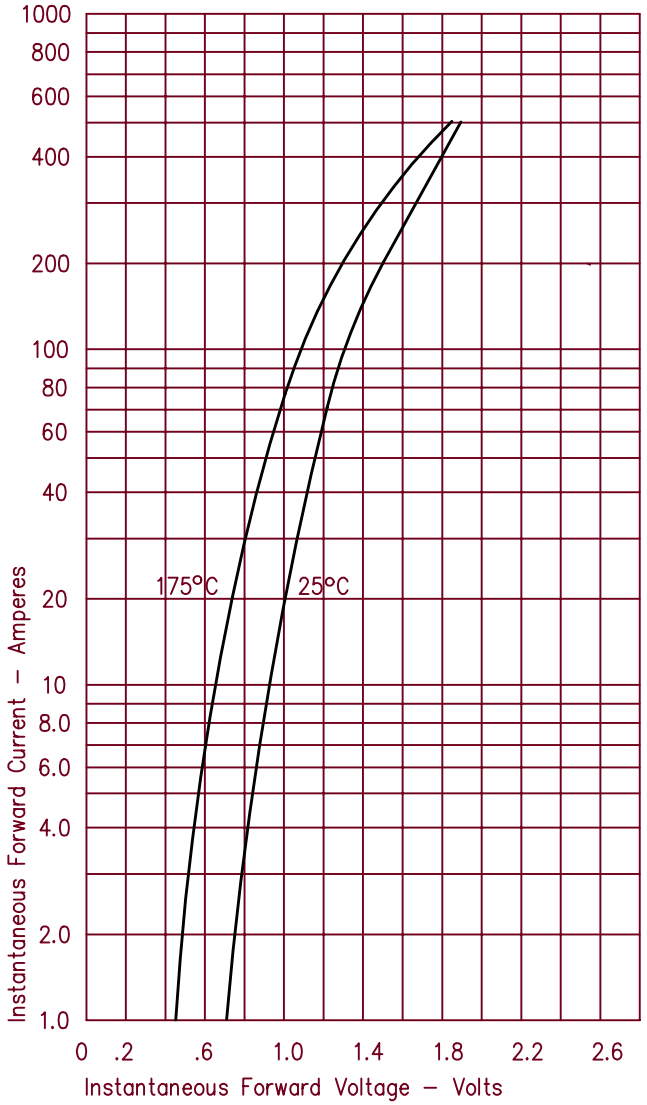


Figure 2
Typical Reverse Characteristics – Per Leg

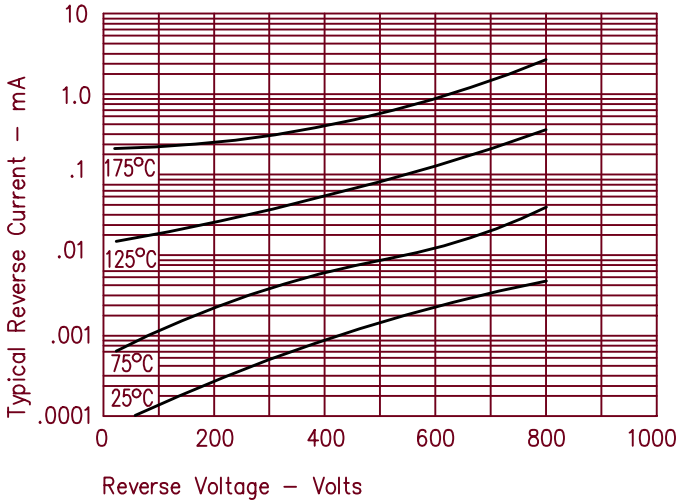


Figure 3
Typical Junction Capacitance – Per Leg

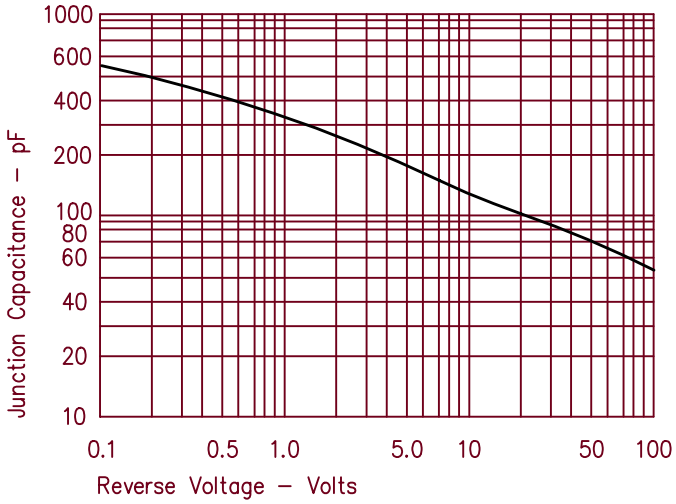


Figure 4
Forward Current Derating – Per Leg

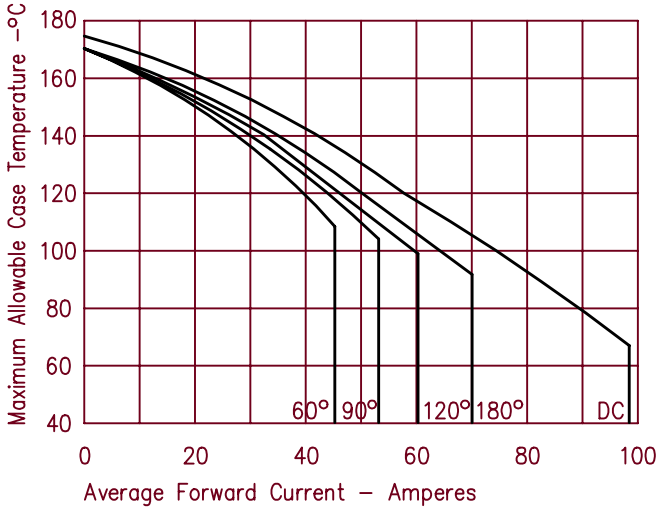
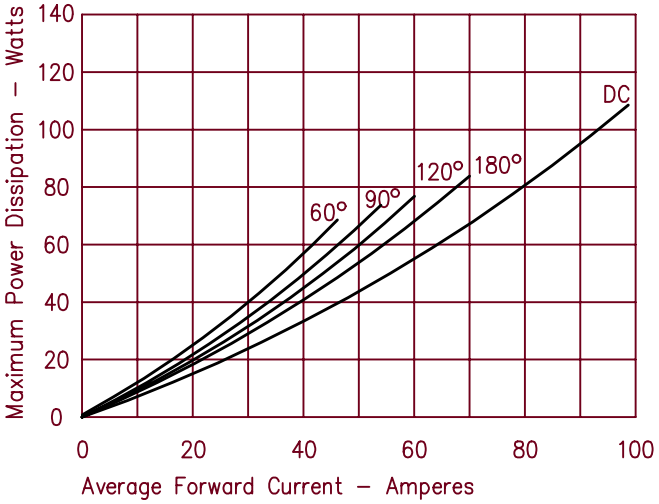


Figure 5
Maximum Forward Power Dissipation – Per Leg



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