

Key Parameters

V_{RRM}	= 1800V
$I_{F(AV)}$	= 450A
I_{FSM}	= 11500A
$V_{F(TO)}$	= 0.75V
r_F	= 0.46mΩ

Features

- Full blocking capability over wide temperature range
- Pressure contacts technology for high reliability

Applications

- Power Supplies
- Uncontrolled Rectifiers
- Welding
- Induction Heating / Melting
- Battery Chargers

Ordering Information

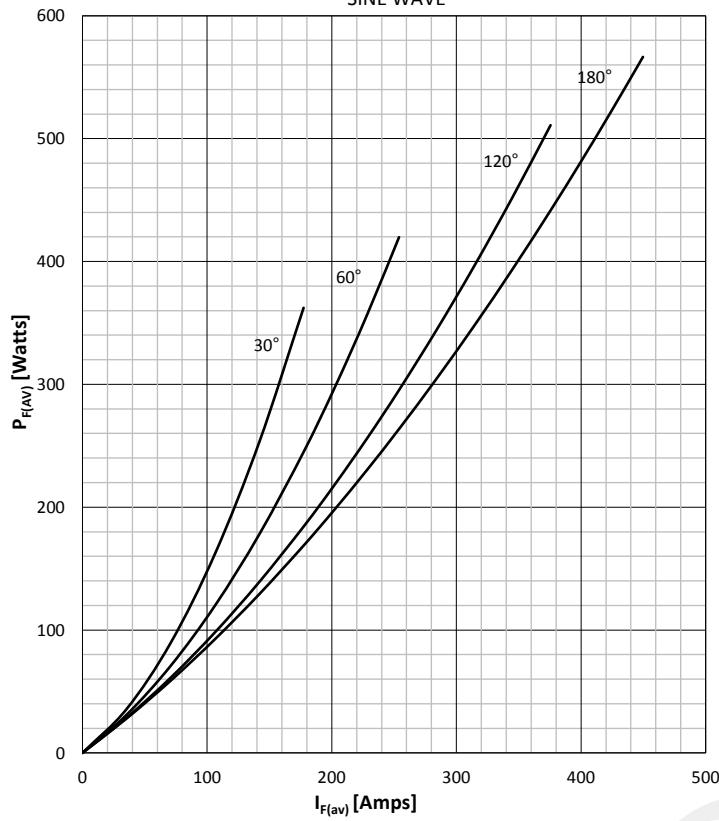
MS D	451	N	XX	F	K
Rectifier Diode	Current code	Polarity R= Stud Anode N= Stud Cathode	Voltage Code Code X 100 = V_{RRM}	F = Flat base	Technology K = Pressure Contact Technology
Order Code MS D451N18FK : 1800V V_{RRM} , Flat base, Diode with base Cathode					

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Symbol	Characteristic	Conditions	T _j [°C]	Value	Unit
BLOCKING					
V _{RRM}	Repetitive peak reverse voltage		170	200 - 1800	V
V _{RSM}	Non-repetitive peak reverse voltage		170	300 - 1900	V
I _{RRM}	Repetitive peak reverse current	V = V _{RRM}	170	50	mA
CONDUCTING					
I _{F(AV)}	Mean forward current	180° sin ,50 Hz, T _c =120°C		450	A
I _{FRMS}	RMS current			706	A
I _{FSM}	Surge forward current	Sine wave, 10 ms Without reverse voltage	25	11500	A
			170	10500	A
I ² t	I ² t	Sine wave, 10 ms Without reverse voltage	25	661 x 10 ³	A ² s
			170	551 x 10 ³	A ² s
V _F	Forward voltage	On-state current = 1350A	25	1.45	V
V _{F(TO)}	Threshold voltage		170	0.75	V
r _F	Forward slope resistance		170	0.46	mΩ
MOUNTING					
R _{th(j-c)}	Thermal impedance, sin 180°	Junction to case		0.088	°C/W
R _{th(c-h)}	Thermal impedance	Case to heatsink		0.02	°C/W
T _j	Max. junction temperature			170	°C
T _{stg}	Storage temperature			-40 170	°C
M	Mounting torque			2.7 - 3.0	Kgm
W	Weight (Approx.)			500	gm
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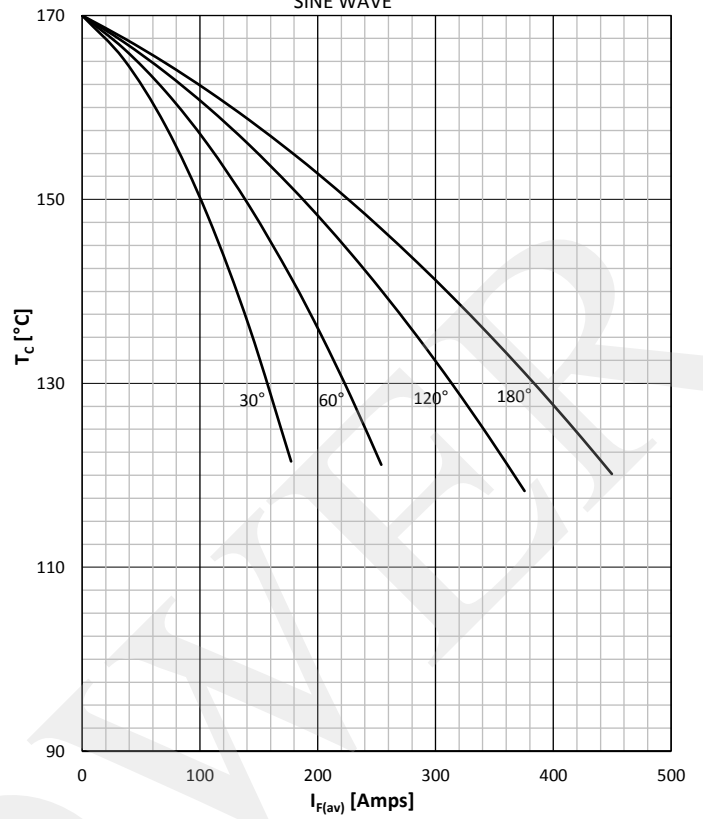
DISSIPATION CHARACTERISTICS

SINE WAVE



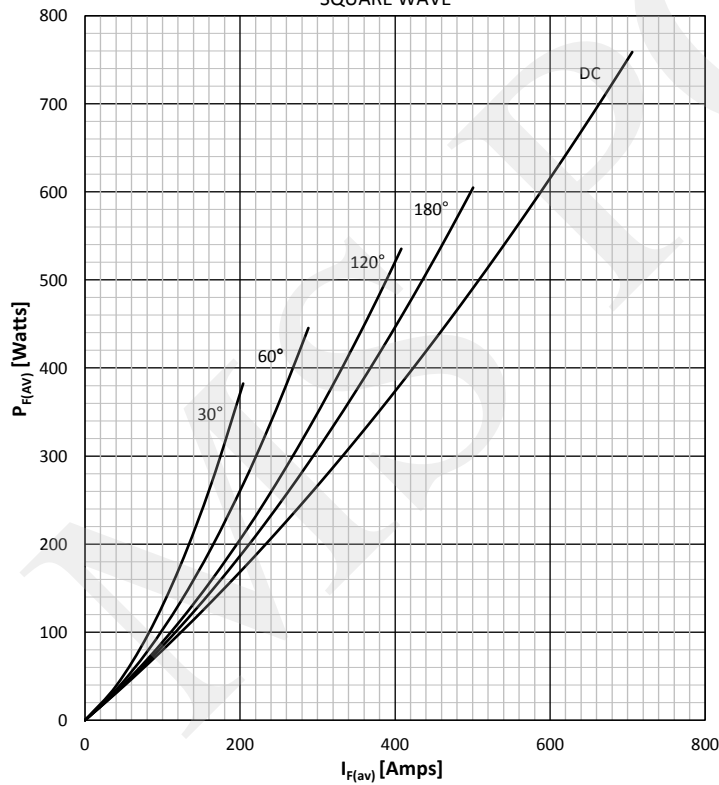
FORWARD CURRENT DERATING CURVE

SINE WAVE



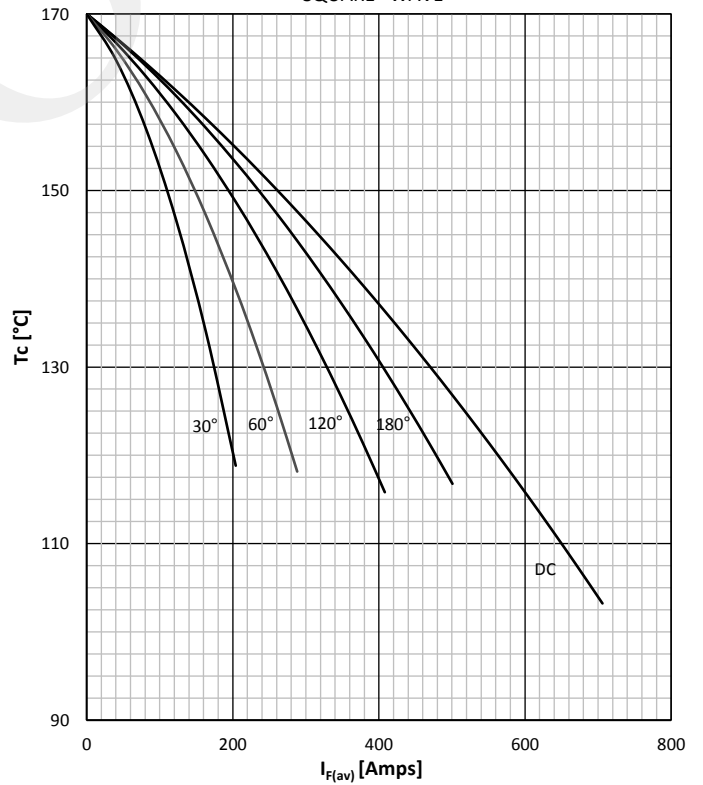
DISSIPATION CHARACTERISTICS

SQUARE WAVE



FORWARD CURRENT DERATING CURVE

SQUARE WAVE



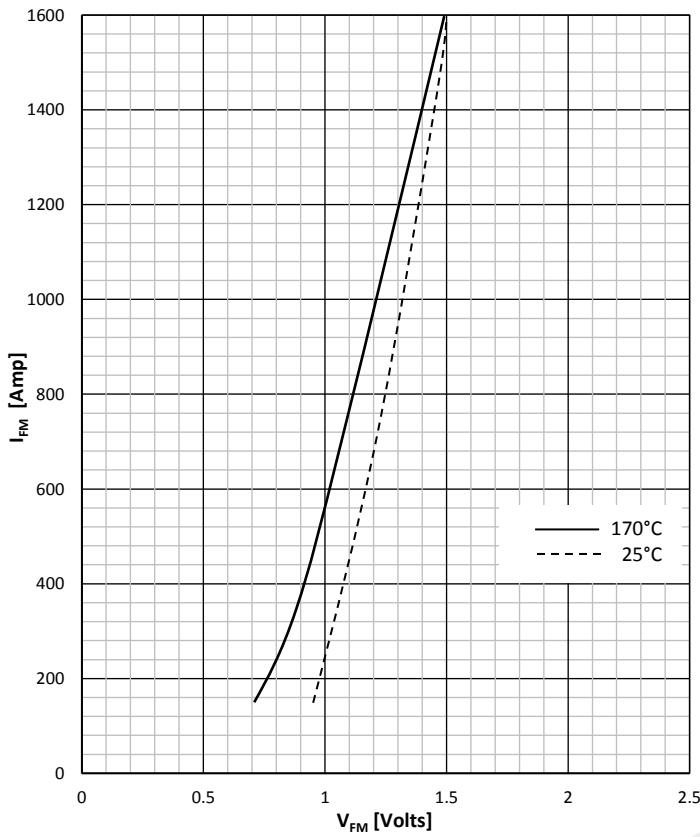
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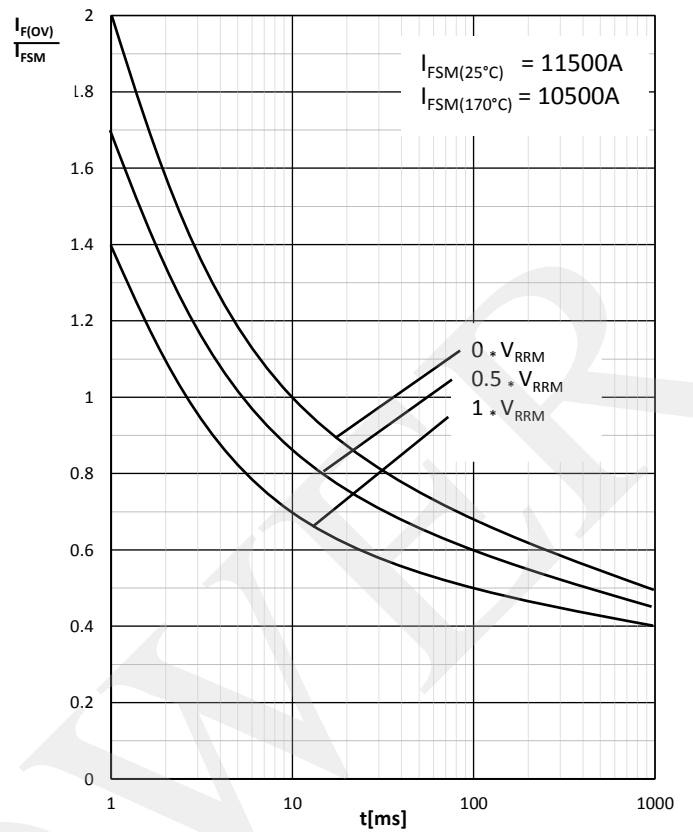
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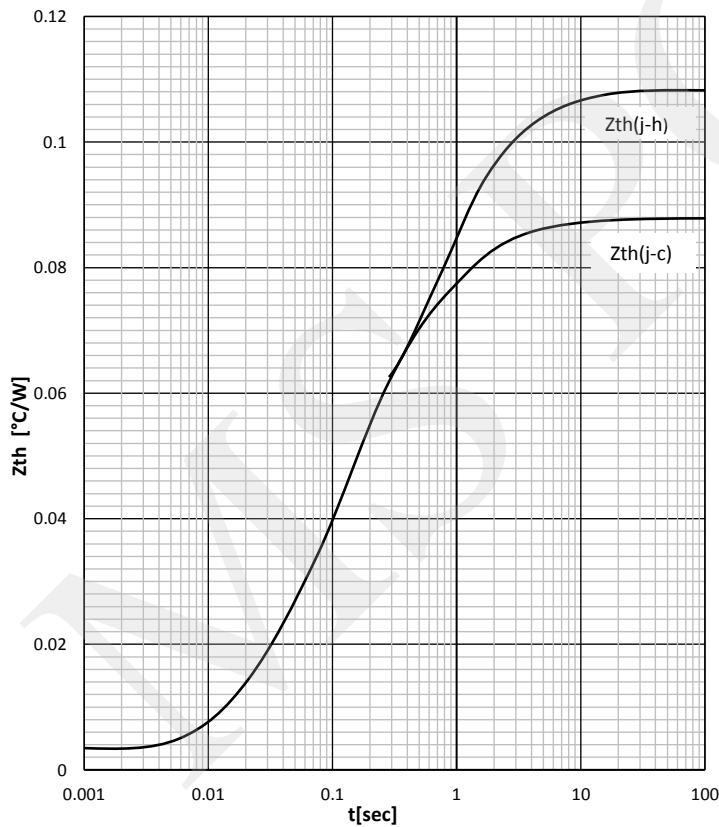
FORWARD CHARACTERISTIC



SURGE CHARACTERISTICS

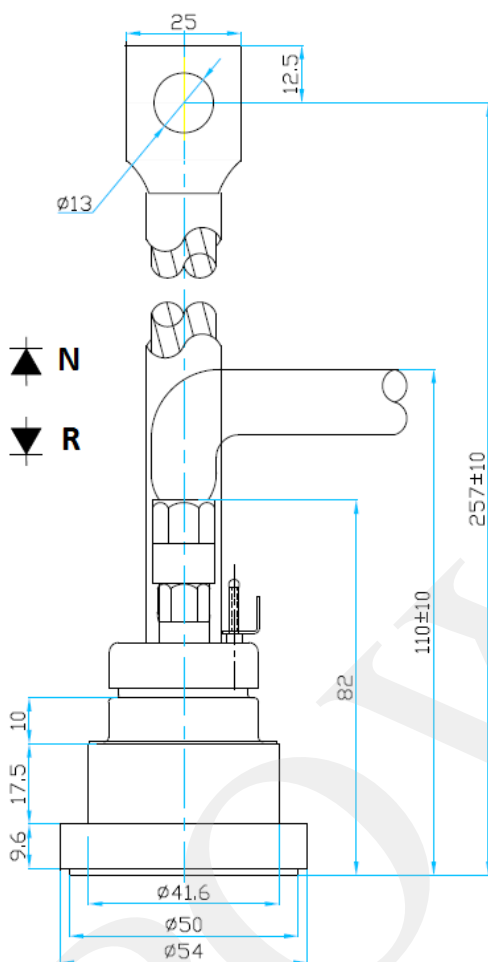


TRANSIENT THERMAL IMPEDANCE



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