

Features

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

Key Parameters

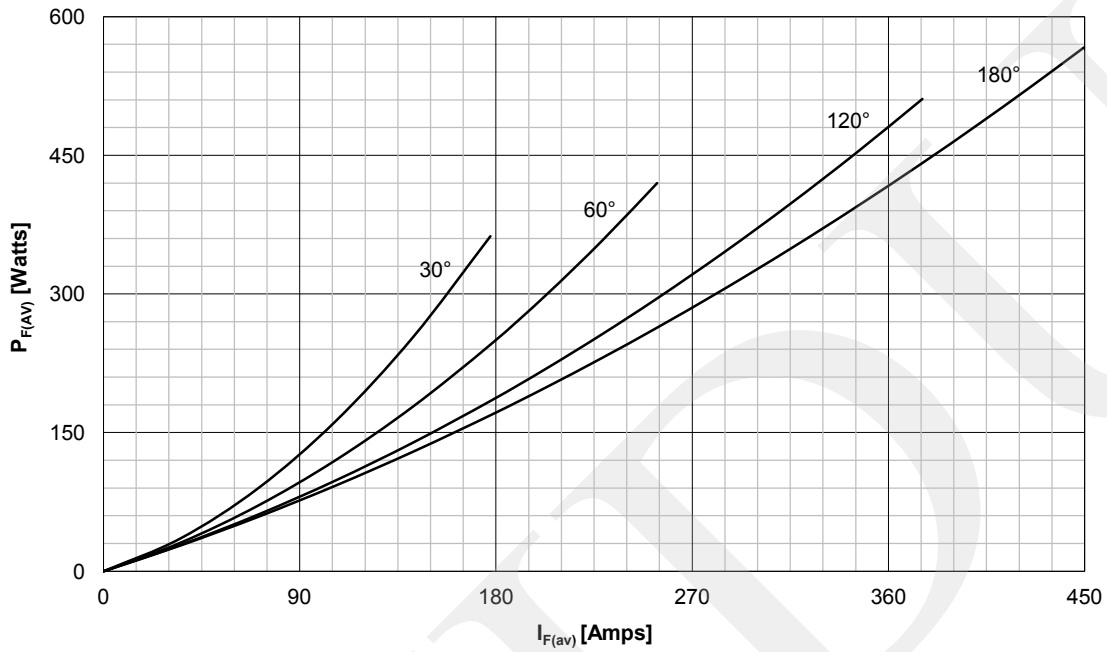
V_{RRM}	= 1800V
$I_{F(AV)}$	= 450A
I_{FSM}	= 11500A
$V_{F(TO)}$	= 0.75V
r_F	= 0.46mΩ

Applications

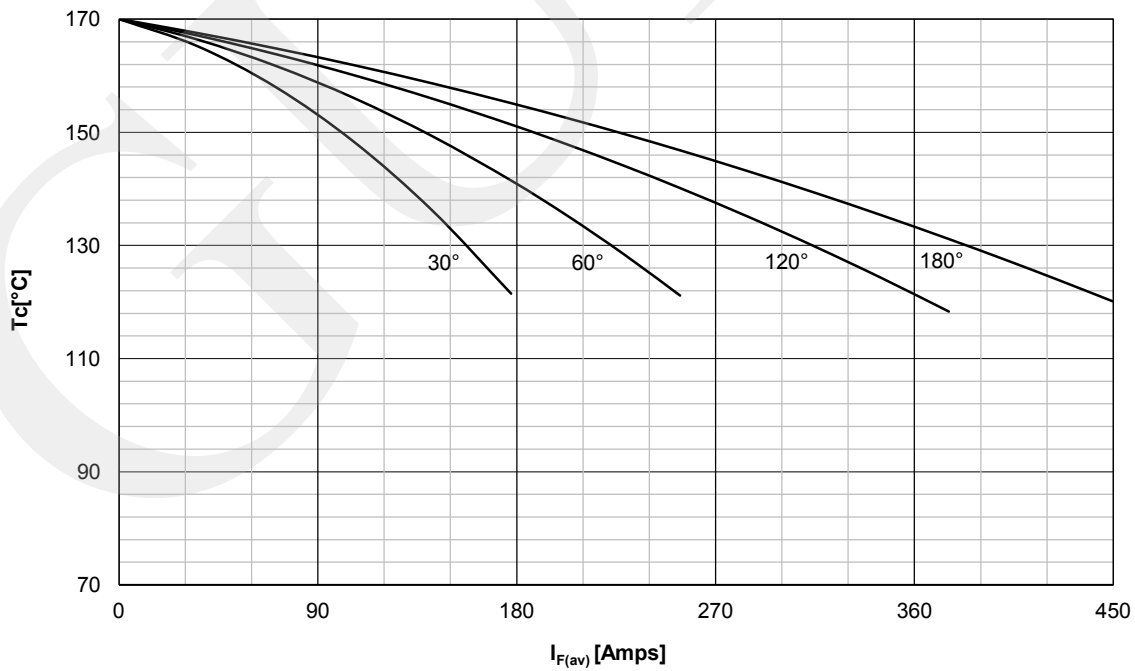
- Power Supplies
- Free-wheeling Diodes
- Uncontrolled Rectifiers
- Battery chargers

Symbol	Characteristic	Conditions	T _J [°C]	Value	Unit
BLOCKING					
V_{RRM}	Repetitive peak reverse voltage		170	200 - 1800	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 Forward 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	Peak Forward voltage	Peak forward current = 1350A	170	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 - 3.00	KgM
W	Weight (Approx.)			500	gm

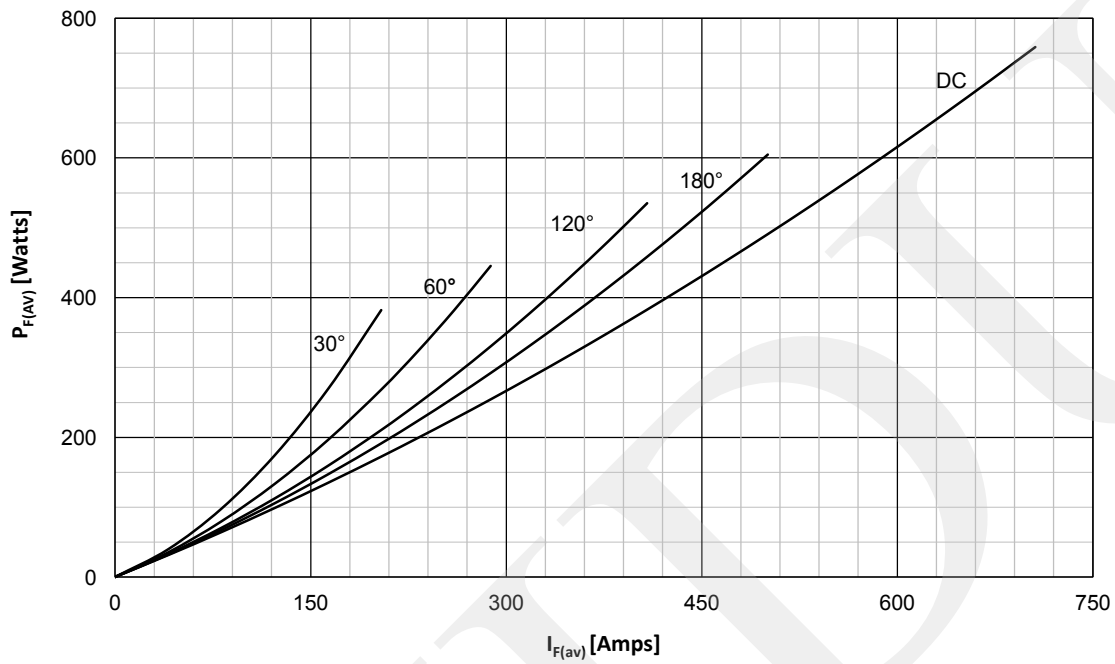
DISSIPATION CHARACTERISTICS
SINE WAVE



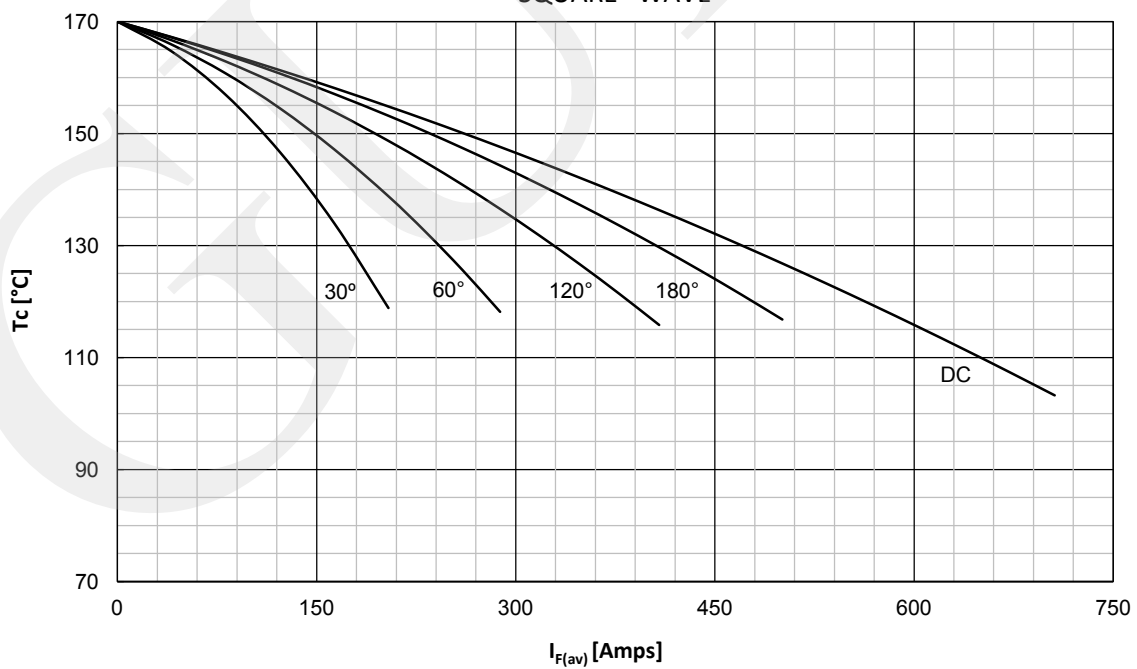
FORWARD CURRENT DERATING CURVE
SINE WAVE



DISSIPATION CHARACTERISTICS
SQUARE WAVE

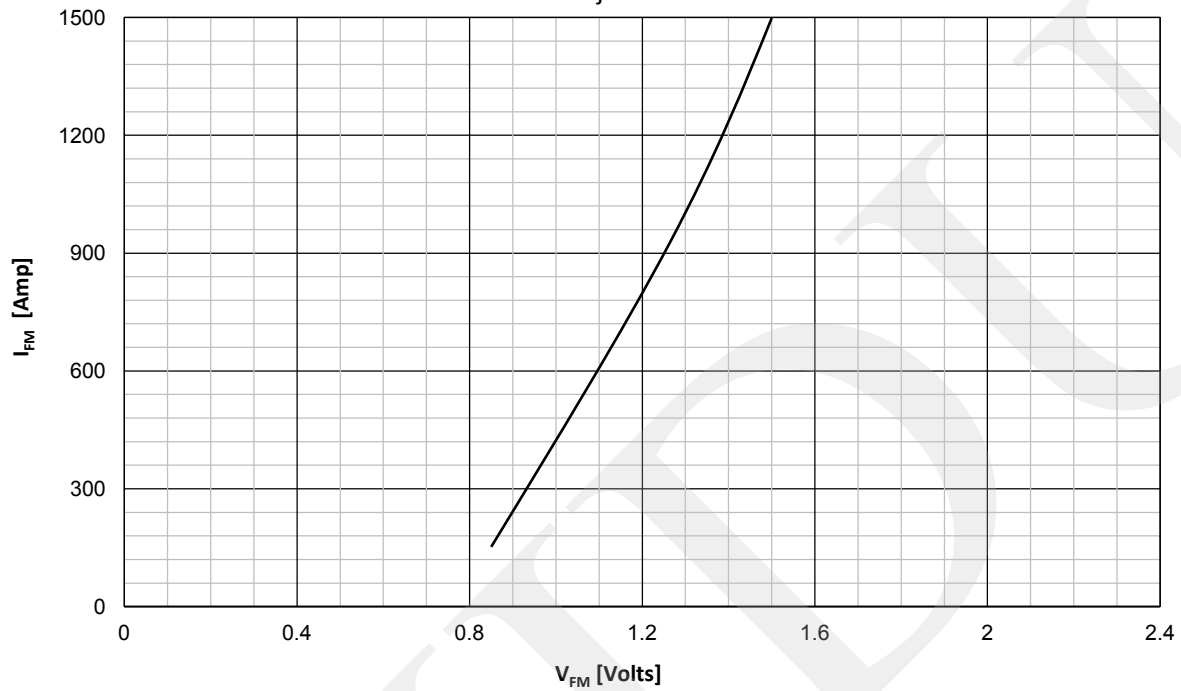


FORWARD CURRENT DERATING CURVE
SQUARE WAVE

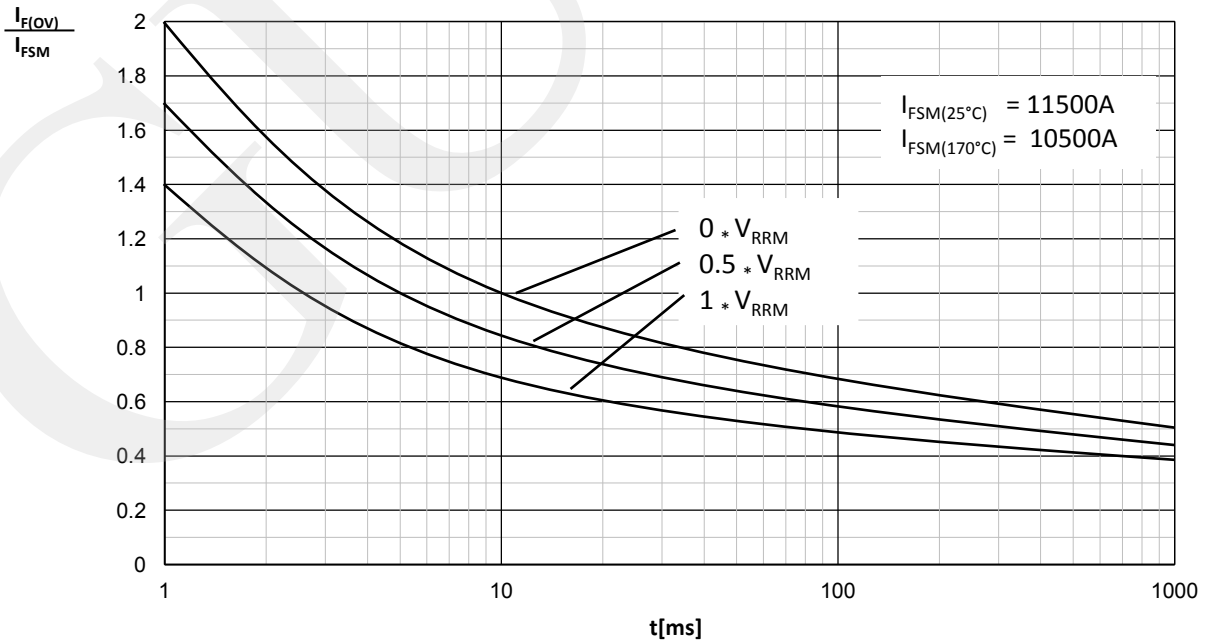


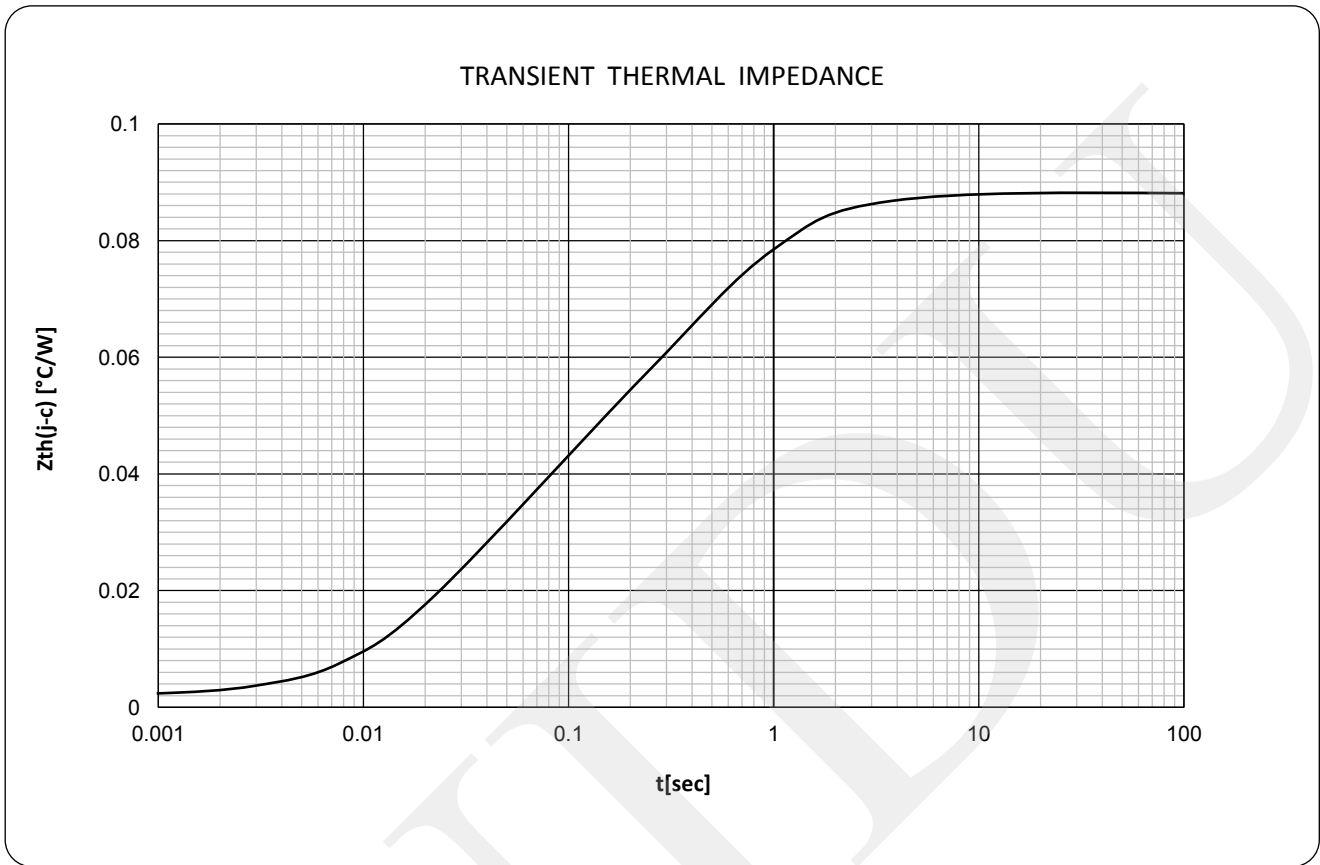
FORWARD CHARACTERISTICS

$T_j = 170^\circ\text{C}$



SURGE CHARACTERISTICS





ORDERING INFORMATION

GDZP	451	N	XX	F
Rectifier Diode	Current code	Polarity R= Base Anode N= Base Cathode	Voltage Code Code X 100 = V_{RRM}	F = Flat Base

Order Code GDZP451N18F – 1800V V_{RRM} , Flat base, Diode with base Cathode

Outline

