

D811 4600-06-14

Key Parameters

V_{RRM}	600~1400	V
$I_{F(AV)}$	4650	A
I_{FSM}	45	kA
V_{FO}	0.76	V
r_F	0.051	mΩ

Applications

High power drive
High voltage supplies
Motor control

Features

Double-side cooling
High mean current
High surge current

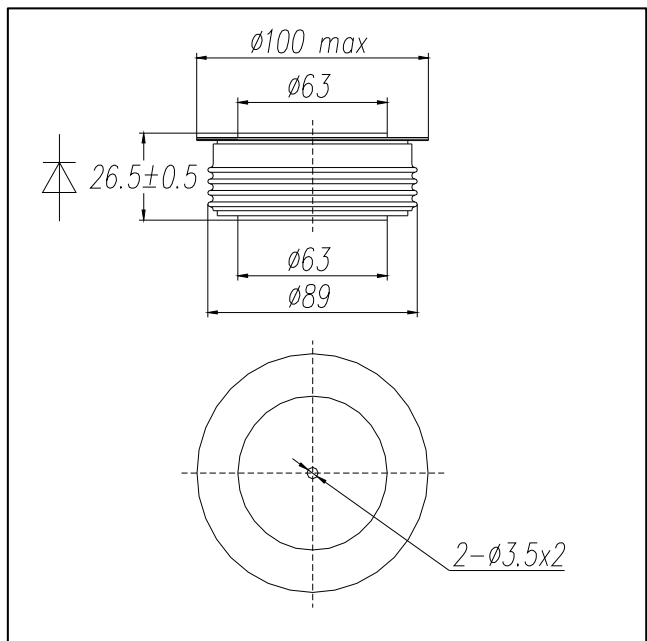
Thermal & Mechanical Data

Symb.	Parameter	Min	Type	Max	Unit
R_{thjc}	Thermal Resistance Junction to Case	-	-	0.0125	K/W
R_{thcs}	Thermal Resistance Case to Heatsink	-	-	0.004	K/W
T_{vj}	Junction Temperature	-40	-	190	°C
T_{stg}	Storage Temperature	-40	-	190	°C
F	Mounting Force	-	45	-	kN
m	Weight	-	1.00	-	kg

Voltage Ratings

Device Type	$V_{RRM}(V)$	Test Conditions
D811 4600-6	600	$T_{vj} = 25, 190\text{ °C}$
D811 4600-8	800	$I_{RRM} = 250\text{ mA}$
D811 4600-10	1000	$V_R = V_{RRM}$
D811 4600-12	1200	$t_p = 10\text{ms}$
D811 4600-14	1400	$V_{RSM} = V_{RRM} + 100\text{ V}$

Outline



Current Ratings

Symb.	Parameter	Test Conditions	Min	Type	Max	Unit
$I_{F(AV)}$	Mean Forward Current	Half Sine Wave, $T_C = 100\text{ °C}$	-	-	4650	A
$I_{F(RMS)}$	RMS Forward Current	$T_C = 100\text{ °C}$	-	-	7301	A
I_{FSM}	Surge (non-repetitive) Current	10ms, Half Sine Wave, $T_{vj} = 190\text{ °C}$, $V_R = 0$	-	-	45.0	kA
I^2t	Limiting load integral	Sine Wave, 10ms	-	-	1013	$10^4\text{A}^2\text{s}$

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Characteristics

Symb.	Parameter	Test Conditions	Min	Type	Max	Unit
V_{FM}	Peak Forward Voltage	$I_{FM} = 3000 \text{ A}$, $T_{vj} = 25 \text{ }^{\circ}\text{C}$	-	-	1.05	V
I_{RRM}	Reverse Repetitive Peak Current	$T_{vj} = 190 \text{ }^{\circ}\text{C}$, V_{RRM}	-	-	250	mA
V_{FO}	Threshold Voltage	$T_{vj} = 190 \text{ }^{\circ}\text{C}$	-	-	0.76	V
r_F	Slope Resistance	$T_{vj} = 190 \text{ }^{\circ}\text{C}$	-	-	0.051	m Ω
Q_r	Reverse Recovery Charge	$T_{vj} = 190 \text{ }^{\circ}\text{C}$	-	4500	-	μC

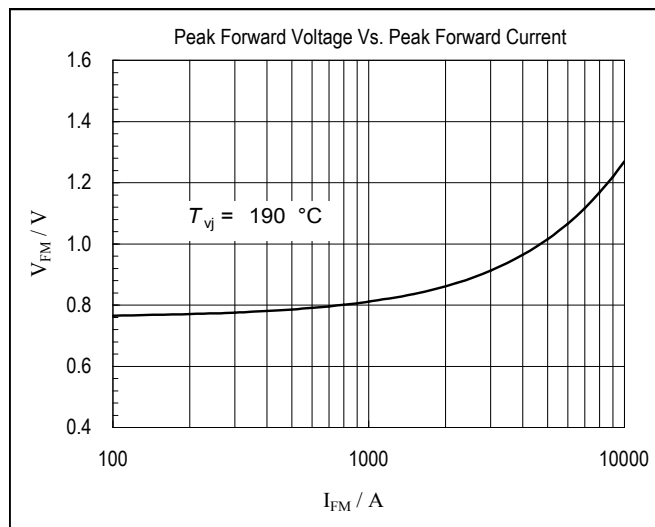


Fig1. Peak Forward Voltage Vs. Peak Forward Current

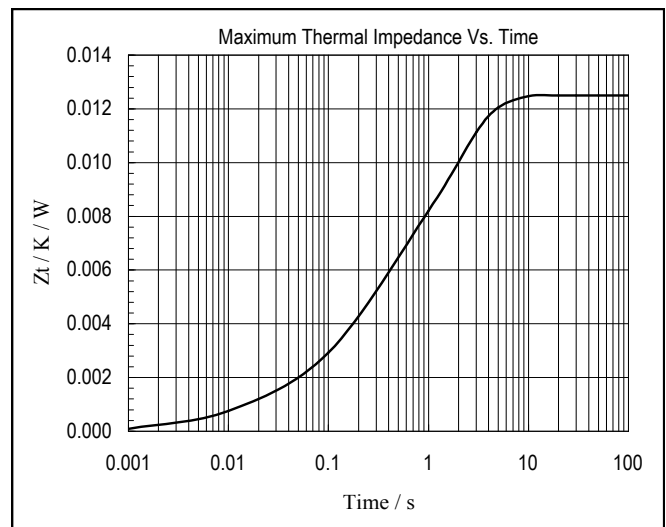


Fig2. Maximum Thermal Impedance Vs. Time

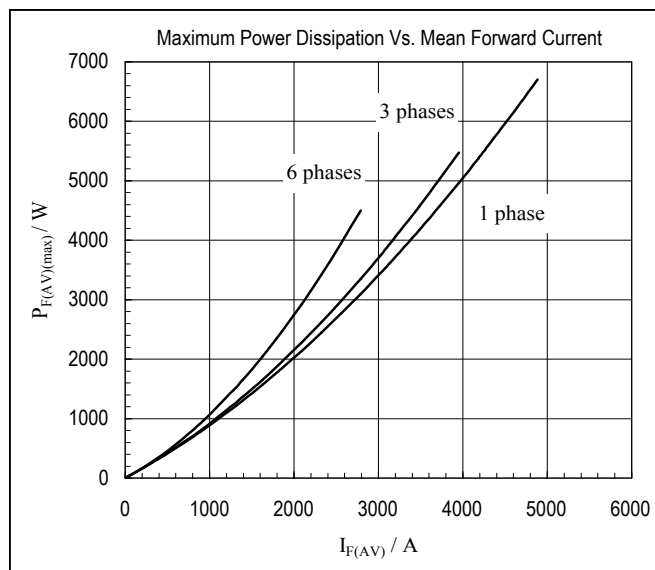


Fig3. Maximum Power Dissipation Vs. Mean Forward Current

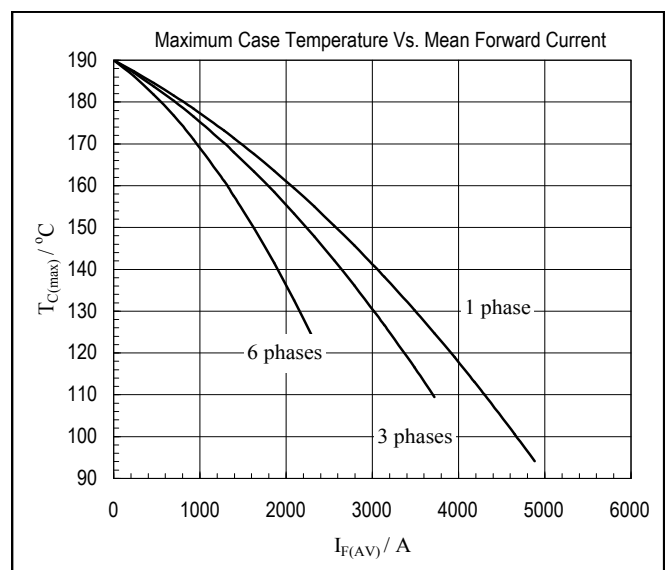


Fig4. Maximum Case Temperature Vs. Mean Forward Current

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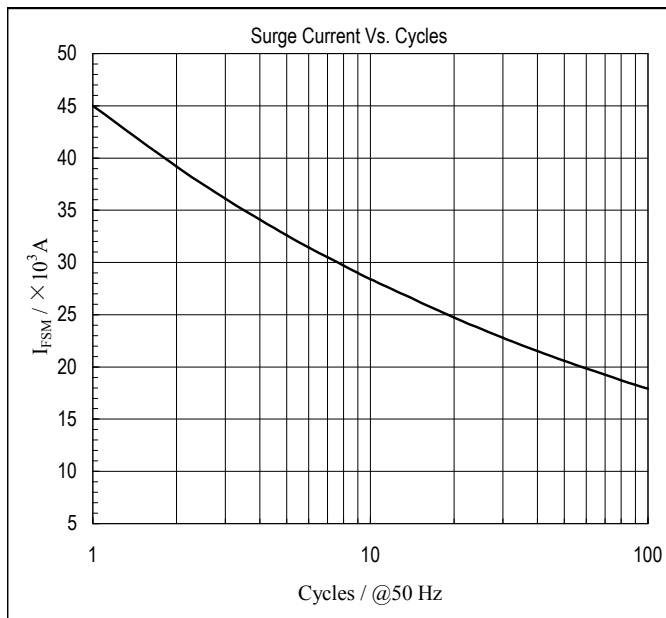


Fig5. Surge Current Vs. Cycles

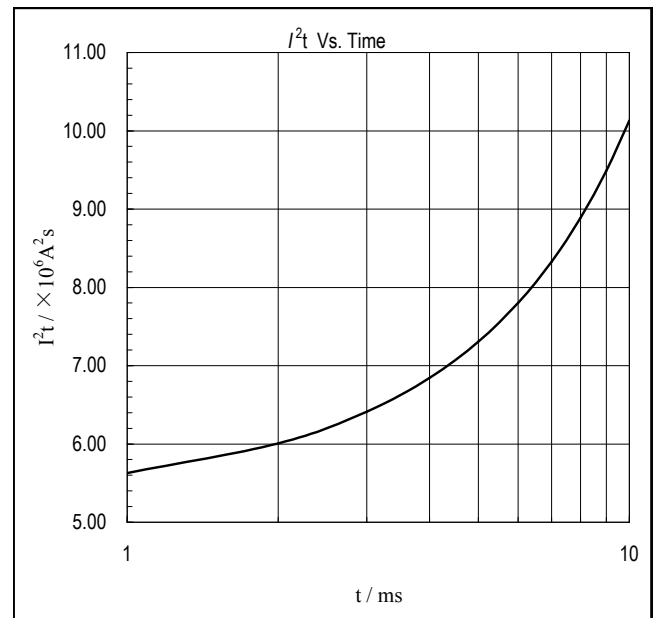


Fig6. I^2t Vs. Time

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