

D814 10000-16-22

Key Parameters

V_{RRM}	1600~2200	V
$I_{F(AV)}$	10000	A
I_{FSM}	125	kA
V_{FO}	0.77	V
r_F	0.035	mΩ

Applications

High power drive
High voltage supplies
Motor control

Features

Double-side cooling
High mean current
High surge current

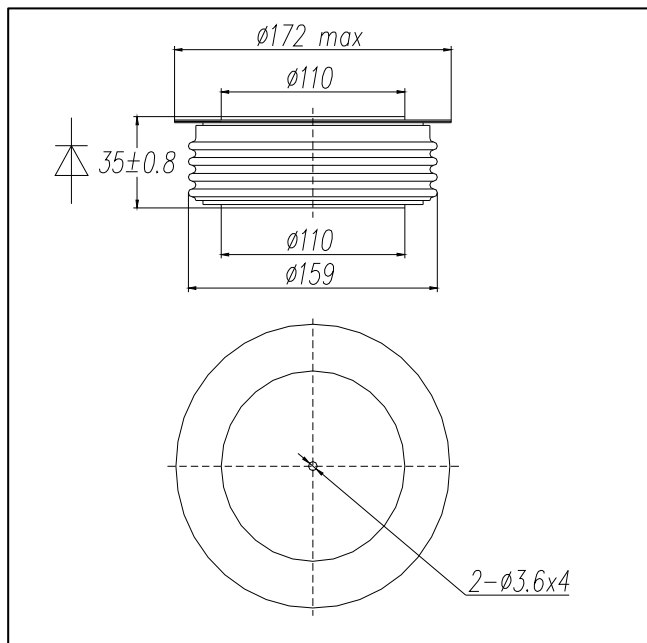
Thermal & Mechanical Data

Symb.	Parameter	Min	Type	Max	Unit
R_{thjc}	Thermal Resistance Junction to Case	-	-	0.004	K/W
R_{thcs}	Thermal Resistance Case to Heatsink	-	-	0.0008	K/W
T_{vj}	Junction Temperature	-40	-	160	°C
T_{stg}	Storage Temperature	-40	-	160	°C
F	Mounting Force	-	120	-	kN
m	Weight	-	3.50	-	kg

Voltage Ratings

Device Type	$V_{RRM}(V)$	Test Conditions
D814 10000-16	1600	$T_{vj} = 25, 160 \text{ } ^\circ\text{C}$
D814 10000-18	1800	$I_{RRM} = 600 \text{ mA}$
D814 10000-20	2000	$V_R = V_{RRM}$
D814 10000-22	2200	$t_p = 10\text{ms}$
		$V_{RSM} = V_{RRM} + 100V$

Outline



Current Ratings

Symb.	Parameter	Test Conditions	Min	Type	Max	Unit
$I_{F(AV)}$	Mean Forward Current	Half Sine Wave, $T_C = 85 \text{ } ^\circ\text{C}$	-	-	10000	A
$I_{F(RMS)}$	RMS Forward Current	$T_C = 85 \text{ } ^\circ\text{C}$	-	-	15700	A
I_{FSM}	Surge (non-repetitive) Current	10ms, Half Sine Wave, $T_{vj} = 160 \text{ } ^\circ\text{C}$, $V_R = 0$	-	-	125.0	kA
I^2t	Limiting load integral	Sine Wave, 10ms	-	-	7813	$10^4 \text{ A}^2\text{s}$

D814 10000-16-22

Characteristics

Symb.	Parameter	Test Conditions	Min	Type	Max	Unit
V_{FM}	Peak Forward Voltage	$I_{FM} = 6000 \text{ A}$, $T_{vj} = 160 \text{ }^{\circ}\text{C}$	-	-	0.98	V
I_{RRM}	Reverse Repetitive Peak Current	$T_{vj} = 160 \text{ }^{\circ}\text{C}$, V_{RRM}	-	-	600	mA
V_{FO}	Threshold Voltage	$T_{vj} = 160 \text{ }^{\circ}\text{C}$	-	-	0.77	V
r_F	Slope Resistance	$T_{vj} = 160 \text{ }^{\circ}\text{C}$	-	-	0.035	m Ω
Q_r	Reverse Recovery Charge	$T_{vj} = 160 \text{ }^{\circ}\text{C}$	-	8000	-	μC

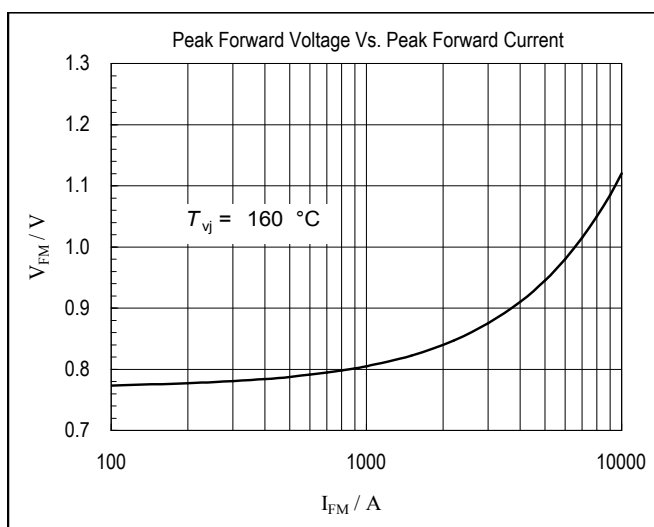


Fig1. Peak Forward Voltage Vs. Peak Forward Current

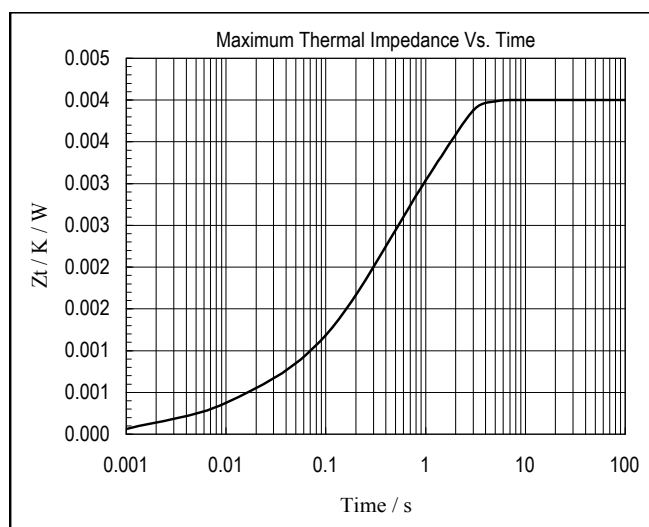


Fig2. Maximum Thermal Impedance Vs. Time

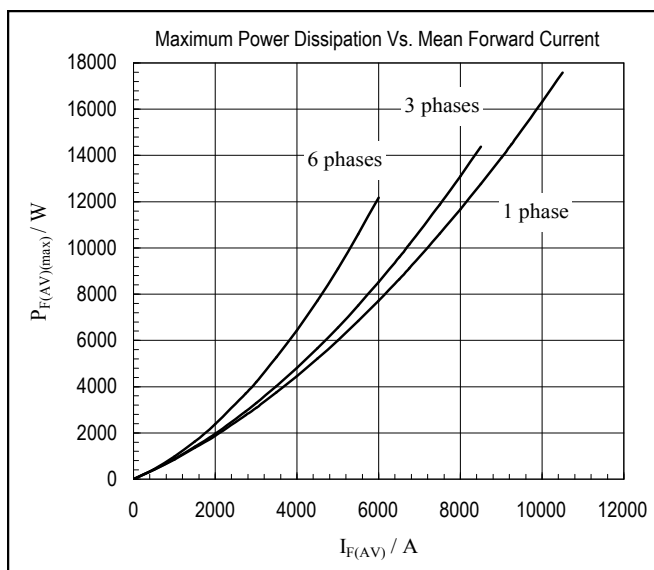


Fig3. Maximum Power Dissipation Vs. Mean Forward Current

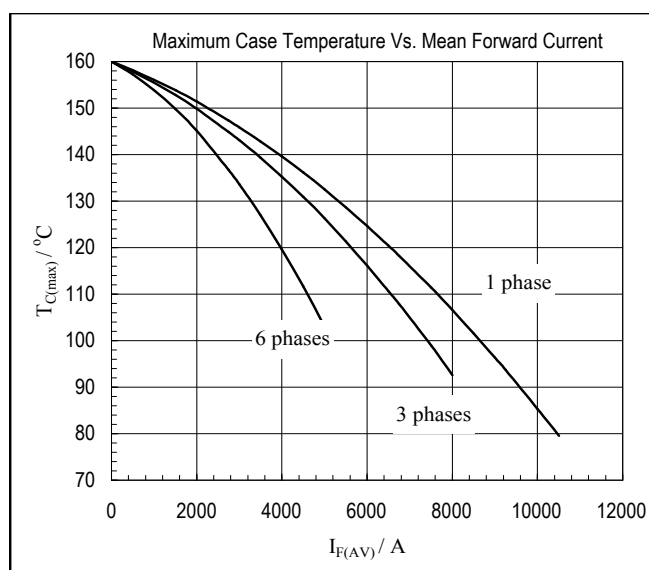


Fig4. Maximum Case Temperature Vs. Mean Forward Current

D814 10000-16-22

1

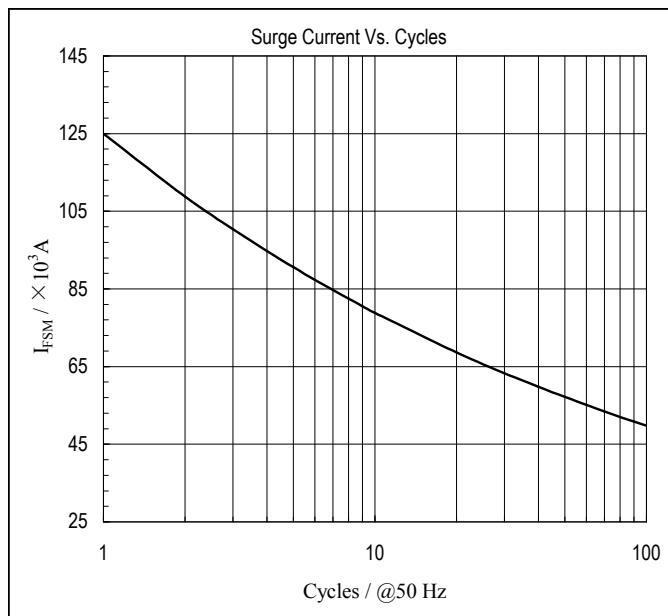


Fig5. Surge Current Vs. Cycles

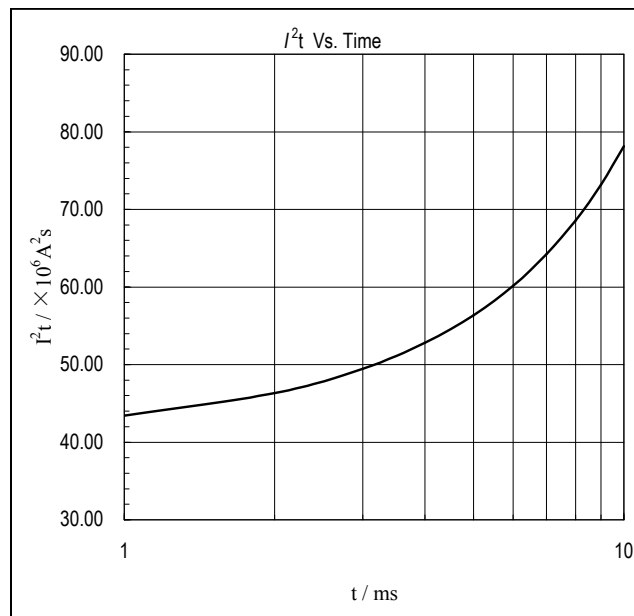


Fig6. I^2t Vs. Time