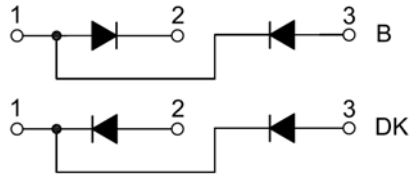


FEATURES

- ☐ Low Forward Voltage
- ☐ High Surge Current Capability
- ☐ Low Leakage Current
- ☐ Low Inductance Package

APPLICATIONS

- ☐ Field Supply For DC Motors
- ☐ Line Rectifiers For Transistorized AC Motor Controllers
- ☐ Non-controllable Rectifiers For AC/DC Converter



MODULE TYPE

TYPE	Circuit Diagram		VRRM (Repetitive Peak Reverse Voltage)	VRSM (Non-Repetitive Peak Reverse Voltage)	Unit
	B	DK			
MMD180S120B		MMD180S120DK	1200	1300	V
MMD180S140B		MMD180S140DK	1400	1500	
MMD180S160B		MMD180S160DK	1600	1700	
MMD180S180B		MMD180S180DK	1800	1900	

ABSOLUTE MAXIMUM RATINGS

T_c=25°C unless otherwise specified

Symbol	Parameter	Test Conditions	Values	Unit
I _{F(AV)}	Average Forward Current	Single phase, half wave, 180°conduction, T _c = 90°C	180	A
I _{F(RMS)}	R.M.S. Forward Current		280	
I _{FSM}	Non-Repetitive Surge Forward Current	1/2 cycle, 50HZ, peak value T _c =45°C	6000	
		1/2 cycle, 60HZ, peak value T _c =45°C	6500	
I ² t	I ² t (For Fusing)	1/2 cycle, 50HZ, peak value T _c =45°C	180.0	KA ² s
		1/2 cycle, 60HZ, peak value T _c =45°C	175.3	KA ² s
P _D	Power Dissipation		694	W
T _J	Junction Temperature		-40 to +150	°C
T _{STG}	Storage Temperature Range		-40 to +125	°C
V _{ISO}	Isolation Breakdown Voltage	AC, 50Hz(R.M.S), t=1minute	3000	V
Torque	Module-to-Sink	Recommended (M6)	3~5	N.m
Torque	Module Electrodes	Recommended (M6)	3~5	N.m
R _{th (J-C)}	Junction-to-Case Thermal Resistance		0.18	K /W
Weight			170	g

MMD180S

ELECTRICAL AND THERMAL CHARACTERISTICS

$T_C=25^{\circ}\text{C}$ unless otherwise specified

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I_{RM}	Max.Reverse Leakage Current	$V_R = V_{RRM}$			500	μA
		$V_R = V_{RRM}, T_J=125^{\circ}\text{C}$			10	mA
V_F	Forward Voltage	$I_F=600\text{A}$			1.5	V
V_{T0}	For power-loss calculations only $T_J=125^{\circ}\text{C}$				0.82	V
r_T					1.1	m Ω

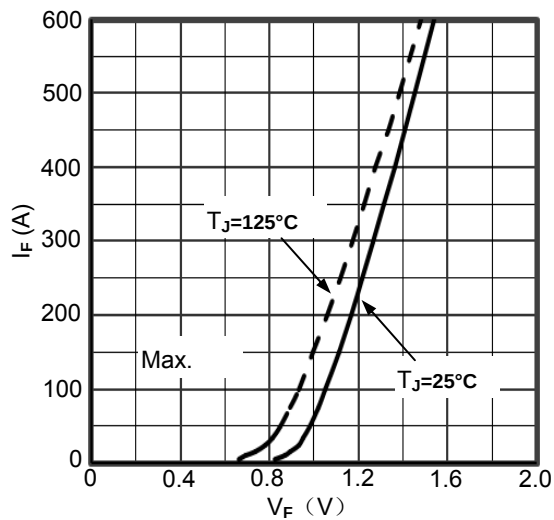


Figure1. Forward current vs.voltage drop

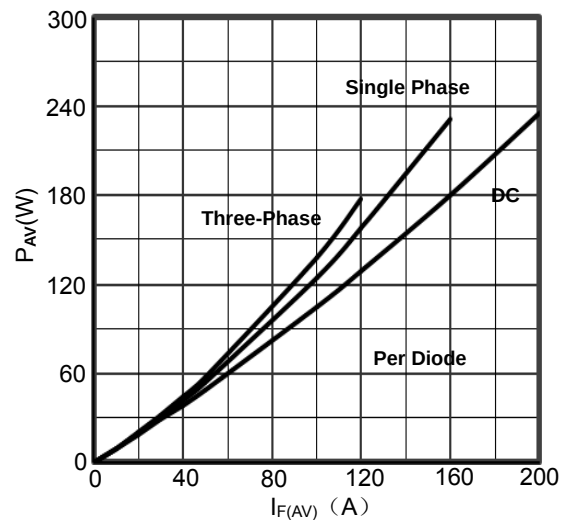


Figure2. Diode Power dissipation vs. $I_{F(AV)}$

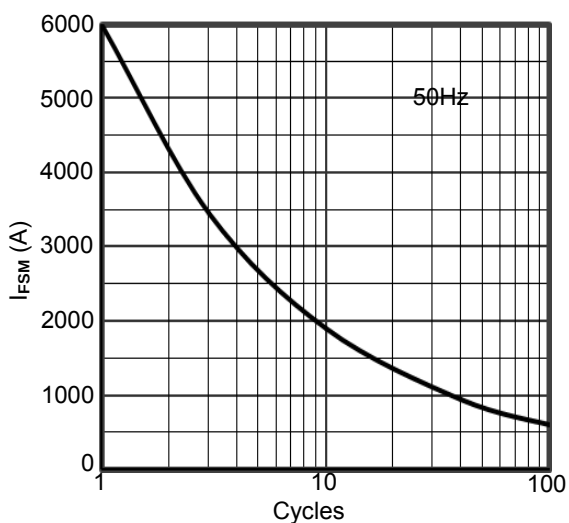


Figure3. Max Non-Repetitive Forward Surge Current

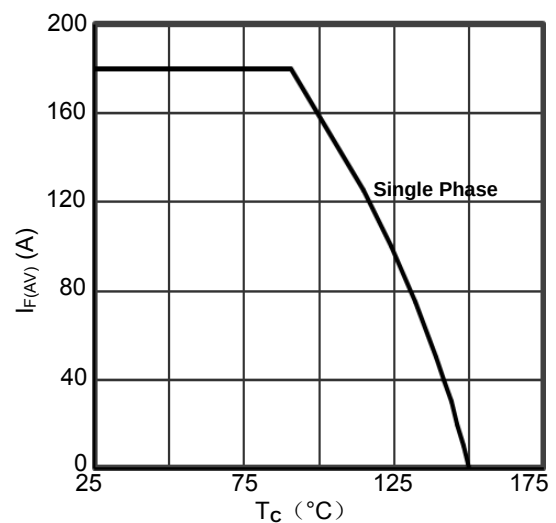


Figure4. Forward current vs. Case temperature

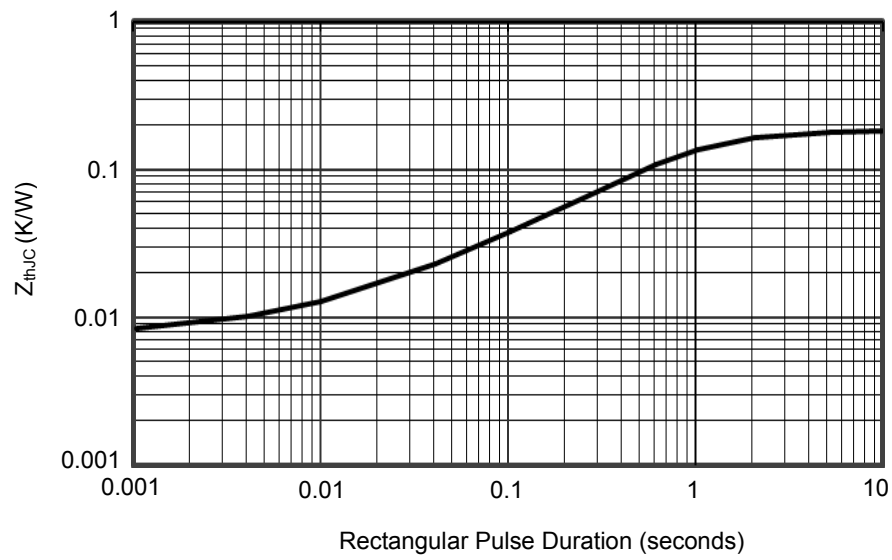
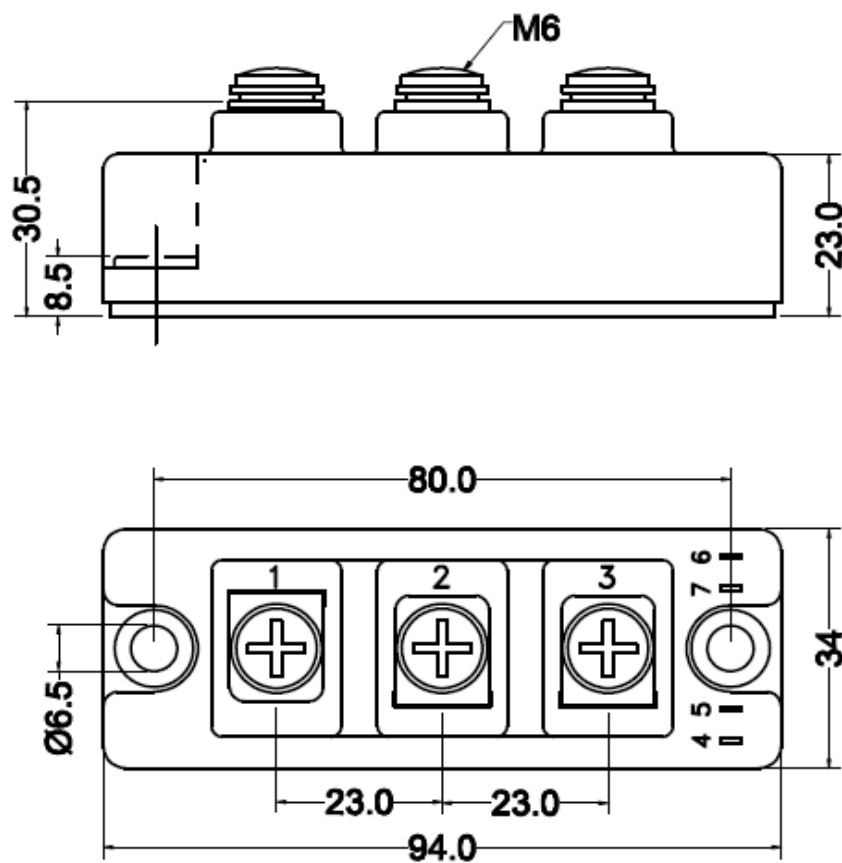


Figure5. Transient Thermal Impedance



Dimensions in Millimeters
Figure6. Package Outline