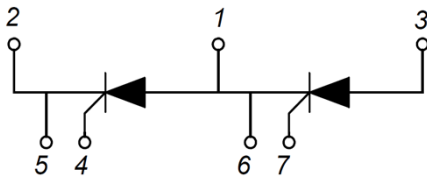


PRODUCT FEATURES

- Electrically Isolated by DBC Ceramic
- High Surge Current Capability
- Low Inductance Package

APPLICATIONS

- DC Motor Control and Drives
- Battery Charges ,Heater controls,Light dimmers
- Static switches



ABSOLUTE MAXIMUM RATINGS

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

Symbol	Parameter/Test Conditions	Values	Unit
		MMK92A160B	
V_{RRM}	Repetitive Peak Reverse Voltage	1600	V
V_{DRM}	Repetitive Peak Off State Voltage	1600	
V_{RSM}	Non-Repetitive Peak Reverse Voltage	1700	

Symbol	Parameter/Test Conditions		Values	Unit
$I_{T(AV)}$	Average On State Current	Single phase, half wave, $180^\circ\text{Conduction}$, $T_c = 95^\circ\text{C}$	92	A
$I_{T(RMS)}$	R.M.S. On State Current	Single phase, half wave, $180^\circ\text{Conduction}$, $T_c = 95^\circ\text{C}$	144	
I_{TSM}	Non Repetitive Surge On State Current	1/2 cycle, 50HZ, peak value, $T_c = 45^\circ\text{C}$	2500	
		1/2 cycle, 60HZ, peak value, $T_c = 45^\circ\text{C}$	2700	
I^2t	For Fusing	1/2 cycle, 50HZ, peak value, $T_c = 45^\circ\text{C}$	31.2	KA ² S
		1/2 cycle, 60HZ, peak value, $T_c = 45^\circ\text{C}$	30.2	
T_J	Junction Temperature		-40 to +125	$^\circ\text{C}$
T_{STG}	Storage Temperature Range		-40 to +125	$^\circ\text{C}$
V_{ISO}	Isolation Breakdown Voltage	AC, 50Hz(R.M.S), $t=1\text{minute}$	3000	V
Torque	Module to Sink	Recommended (M5)	2.5~5	Nm
Torque	Module Electrodes	Recommended (M5)	2.5~5	Nm
R_{thJC}	Junction to Case Thermal Resistance		0.19	K/W
Weight			110	g

ELECTRICAL CHARACTERISTICS

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

Symbol	Parameter/Test Conditions		Min.	Typ.	Max.	Unit
I_{DRM}	Maximum Peak Off State Current	$V_D = V_{DRM}, T_J = 125^\circ\text{C}$			25	mA
I_{RRM}	Maximum Peak Reverse Current	$V_R = V_{RRM}, T_J = 125^\circ\text{C}$			25	
V_{TM}	Maximum on-state voltage drop	$I_{TM}=300\text{A}, t_d=10\text{ ms, half sine}$			1.6	V
V_{TO}	For power loss calculations only	$T_J = 125^\circ\text{C}$			0.9	V
r_T					2.5	m Ω
V_{GT}	Max. required DC gate voltage to trigger	$V_A=6\text{V}, R_A=1\Omega, T_J = -40^\circ\text{C}$			4.0	V
		$V_A=6\text{V}, R_A=1\Omega$			2.5	
		$V_A=6\text{V}, R_A=1\Omega, T_J = 125^\circ\text{C}$			1.7	
I_{GT}	Max. required DC gate current to trigger	$V_A=6\text{V}, R_A=1\Omega, T_J = -40^\circ\text{C}$			270	mA
		$V_A=6\text{V}, R_A=1\Omega$		80	150	
		$V_A=6\text{V}, R_A=1\Omega, T_J = 125^\circ\text{C}$			80	
V_{GD}	Max. required DC gate voltage not to trigger,	$V_D = V_{DRM}, T_J = 125^\circ\text{C}$			0.25	V
I_{GD}	Max. required DC gate current not to trigger,	$V_D = V_{DRM}, T_J = 125^\circ\text{C}$			10	mA
I_H	Maximum holding current			125	250	mA
I_L	Maximum latching current			250	500	mA
P_{GM}	Maximum peak gate power				10	W
$P_{G(AV)}$	Maximum average gate power				2.5	
I_{GM}	Maximum peak gate current				2.5	A
$-V_{GM}$	Maximum peak negative gate voltage				10	V
dv/dt	Critical Rate of Rise of Off State Voltage, $T_J=125^\circ\text{C}$, exponential to 67% rated V_{DRM}				1000	V/ μs
di/dt	$V_D = 2/3V_{DRM}, I_G = 0.3\text{A}, di/dt=0.3\text{A}/\mu\text{s}, T_J = 125^\circ\text{C}$				150	A/ μs

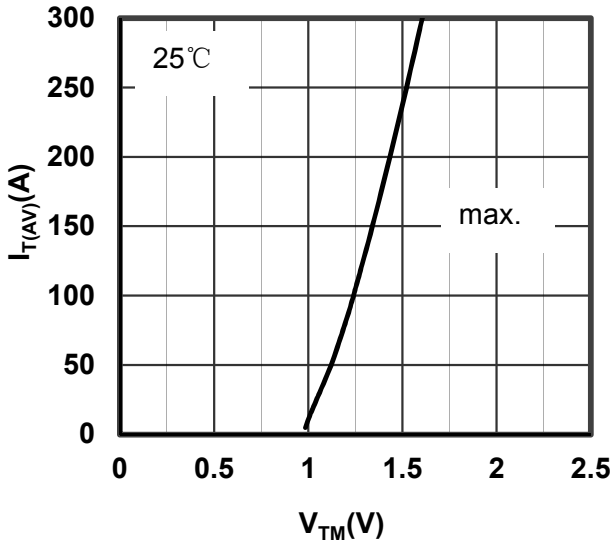


Figure 1. SCR Average On State Current vs Forward Voltage

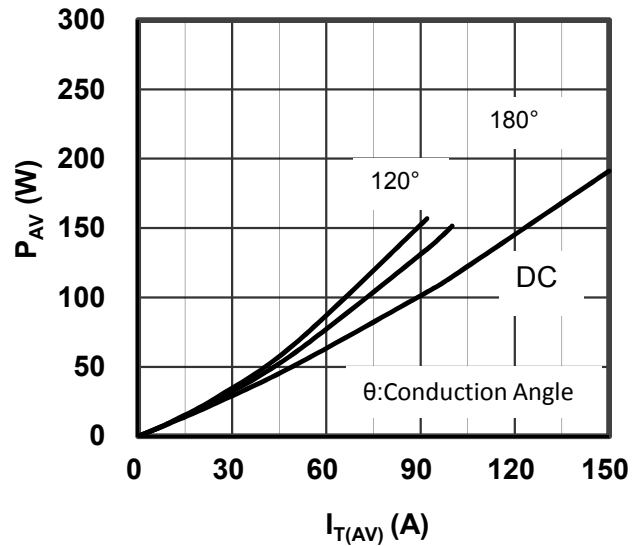


Figure 2. SCR Power dissipation vs $I_{T(AV)}$

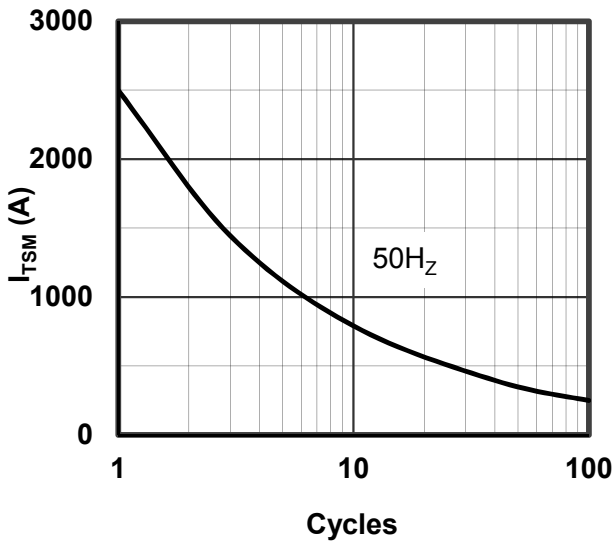


Figure 3. Max Non Repetitive Surge On State Current

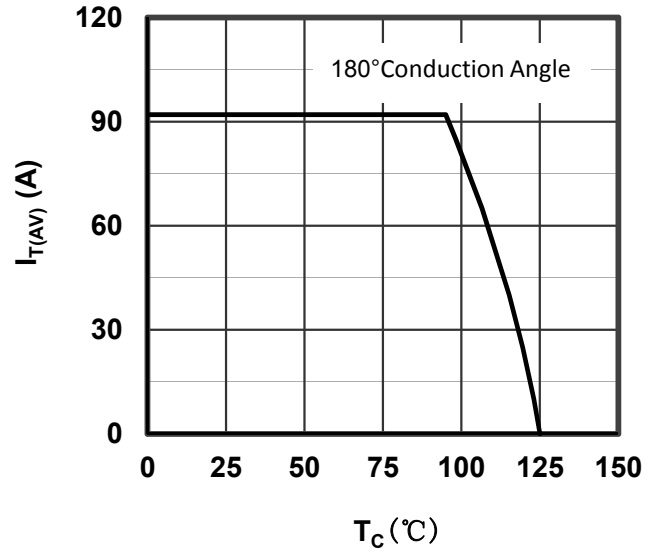


Figure 4. On State current vs Case temperature

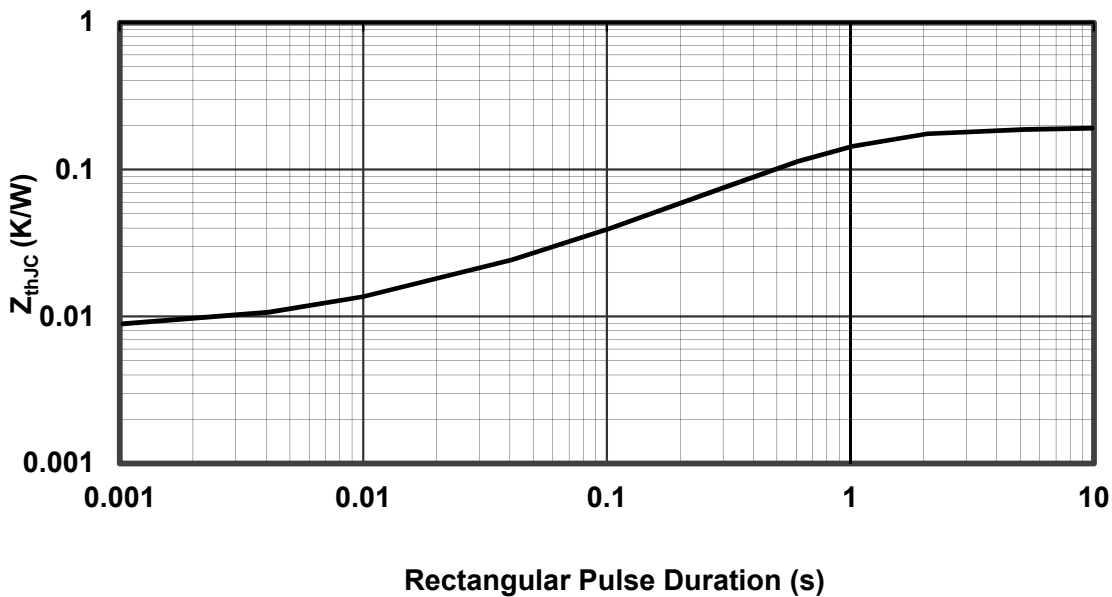


Figure 5. Transient Thermal Impedance

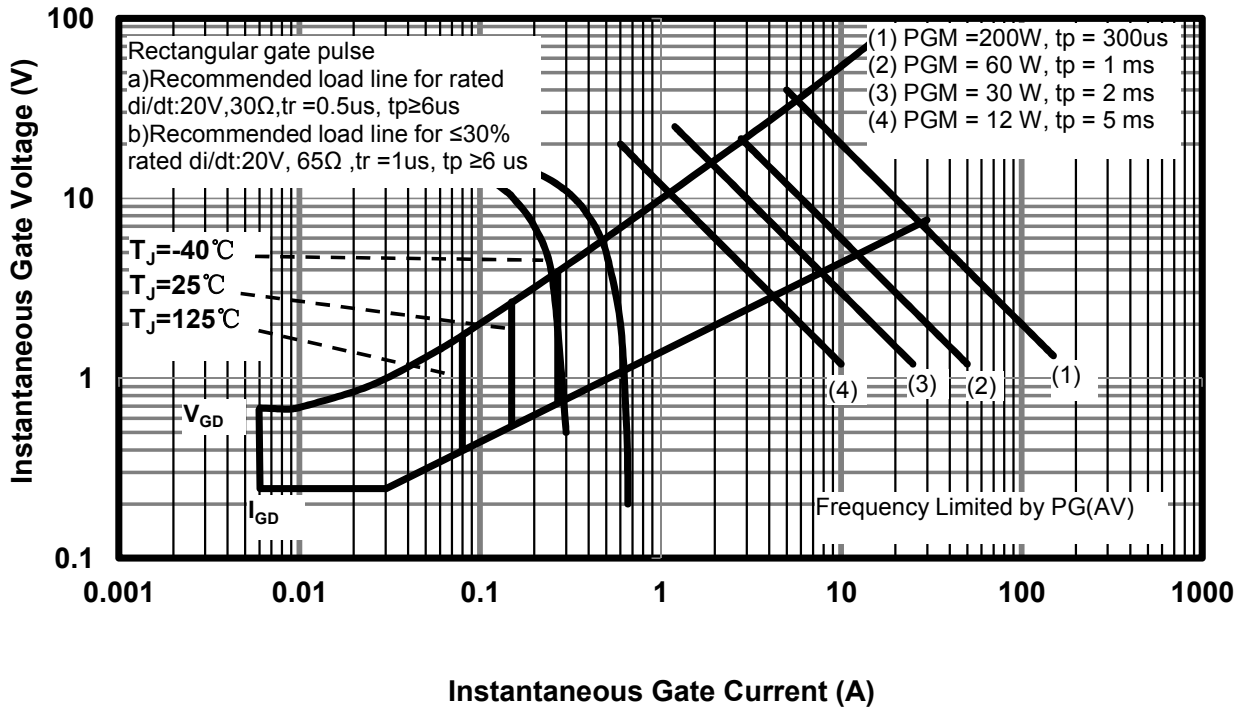
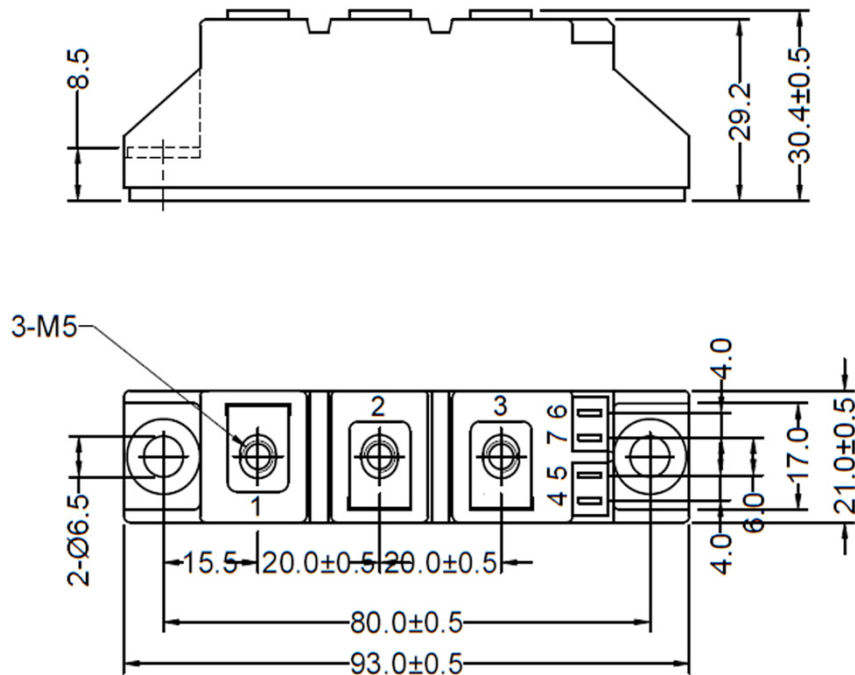


Figure 6. Gate Characteristics



Dimensions in (mm)
 Figure 7. Package Outline