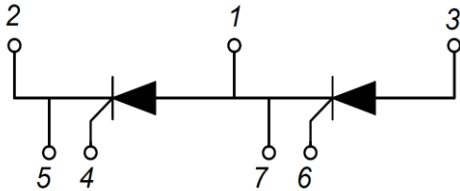


## PRODUCT FEATURES

- 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
		MMK200S160B	
$V_{RRM}$	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°conduction, $T_c=80^\circ\text{C}$	200	A
$I_{T(RMS)}$	R.M.S. On State Current	Single phase, half wave, 180°conduction, $T_c=80^\circ\text{C}$	310	
$I_{TSM}$	Non Repetitive Surge On State Current	1/2 cycle, 50HZ, peak value, $T_J=45^\circ\text{C}$	5000	
		1/2 cycle, 60HZ, peak value, $T_J=45^\circ\text{C}$	5400	
$I^2t$	For Fusing	1/2 cycle, 50HZ, peak value, $T_J=45^\circ\text{C}$	125.0	KA <sup>2</sup> S
		1/2 cycle, 60HZ, peak value, $T_J=45^\circ\text{C}$	121.0	
$T_J$	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=1minute	3000	V
Torque	Module to Sink	Recommended (M6)	3~5	Nm
Torque	Module Electrodes	Recommended (M6)	3~5	Nm
$R_{thJC}$	Junction to Case Thermal Resistance		0.12	K/W
Weight			160	g

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# MMK200S160B

## ELECTRICAL CHARACTERISTICS ( $T_C=25^\circ\text{C}$ unless otherwise specified)

Symbol	Parameter/Test Conditions		Min.	Typ.	Max.	Unit
$I_{\text{DRM}}$	Maximum Peak Off-State Current	$V_D = V_{\text{DRM}}, T_J = 125^\circ\text{C}$			25	mA
$I_{\text{RRM}}$	Maximum Peak Reverse Current	$V_R = V_{\text{RRM}}, T_J = 125^\circ\text{C}$			25	
$V_{\text{TM}}$	Maximum on-state voltage drop	$I_{\text{TM}}=600\text{A}, t_d=10 \text{ ms, half sine}$			1.75	V
$V_{\text{TO}}$	For power-loss calculations only	$T_J = 125^\circ\text{C}$			0.85	V
$r_T$					1.7	m $\Omega$
$V_{\text{GT}}$	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	
$I_{\text{GT}}$	Max. required DC gate current to trigger	$V_A=6\text{V}, R_A=1\Omega, T_J = -40^\circ\text{C}$			270	mA
		$V_A=6\text{V}, R_A=1\Omega$		75	150	
		$V_A=6\text{V}, R_A=1\Omega, T_J = 125^\circ\text{C}$			80	
$V_{\text{GD}}$	Max. required DC gate voltage not to trigger, $V_D = V_{\text{DRM}}, T_J = 125^\circ\text{C}$				0.25	V
$I_{\text{GD}}$	Max. required DC gate current not to trigger, $V_D = V_{\text{DRM}}, T_J = 125^\circ\text{C}$				6	mA
$I_{\text{H}}$	Maximum holding current			150	300	mA
$I_{\text{L}}$	Maximum latching current			250	500	mA
$P_{\text{GM}}$	Maximum peak gate power				10	W
$P_{\text{G(AV)}}$	Maximum average gate power				2.5	
$I_{\text{GM}}$	Maximum peak gate current				2.5	A
$-V_{\text{GM}}$	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 $V_{\text{DRM}}$				1000	V/ $\mu\text{s}$
$di/dt$	Max. Rate of Rise of Turned-on Current, $T_J = 125^\circ\text{C}, I_{\text{TM}}=600\text{A}$ , rated $V_{\text{DRM}}$				150	A/ $\mu\text{s}$

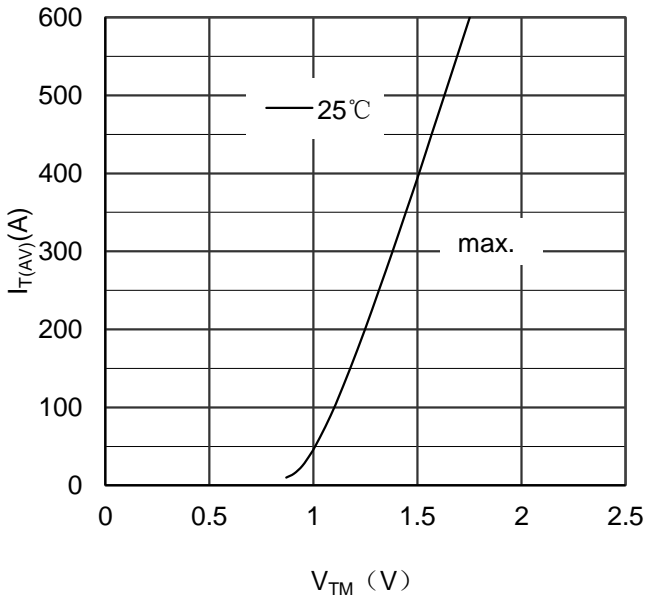


Figure 1. SCR Average On State Current vs Forward Voltage

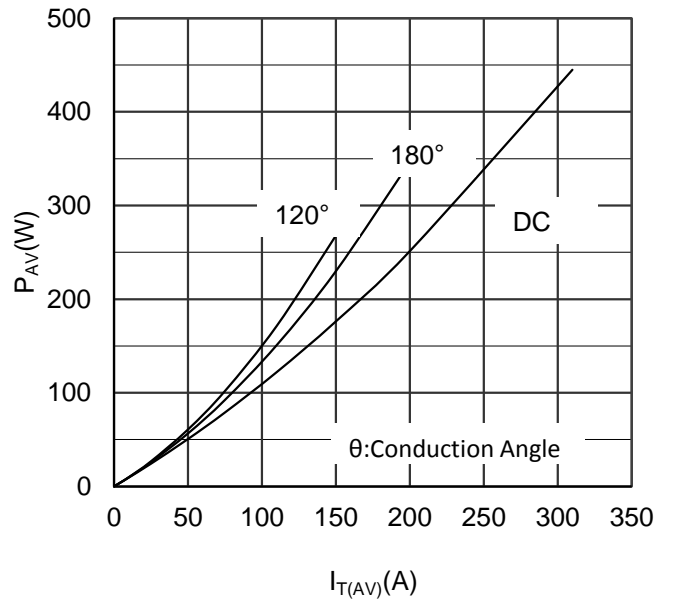


Figure 2. SCR Power dissipation vs  $I_{T(AV)}$

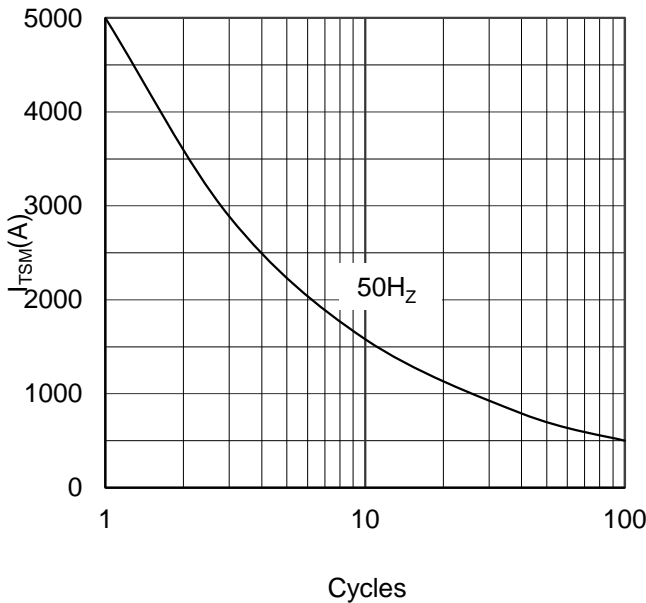


Figure 3. Max Non Repetitive Surge On State Current

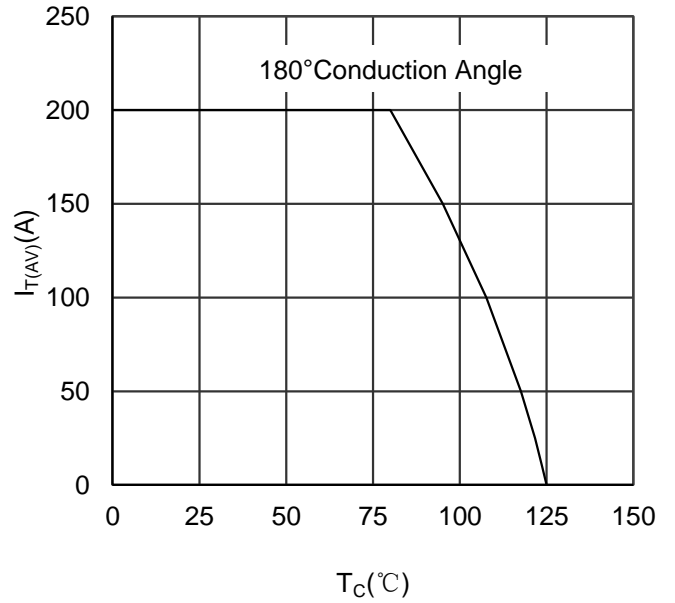


Figure 4. On State current vs Case temperature

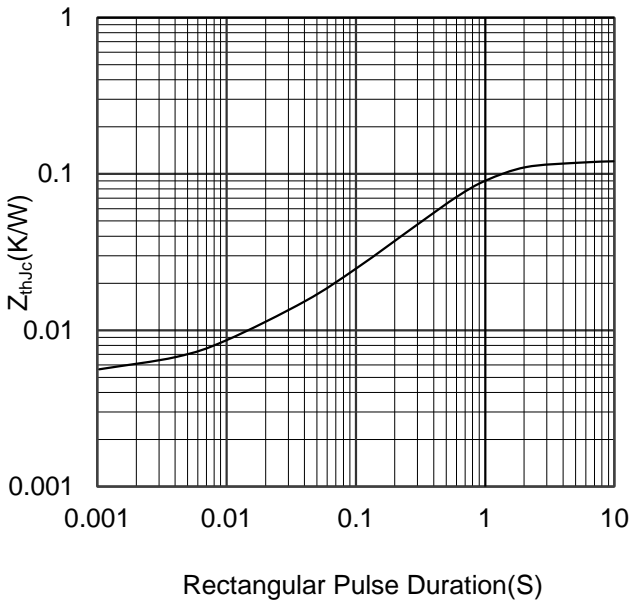
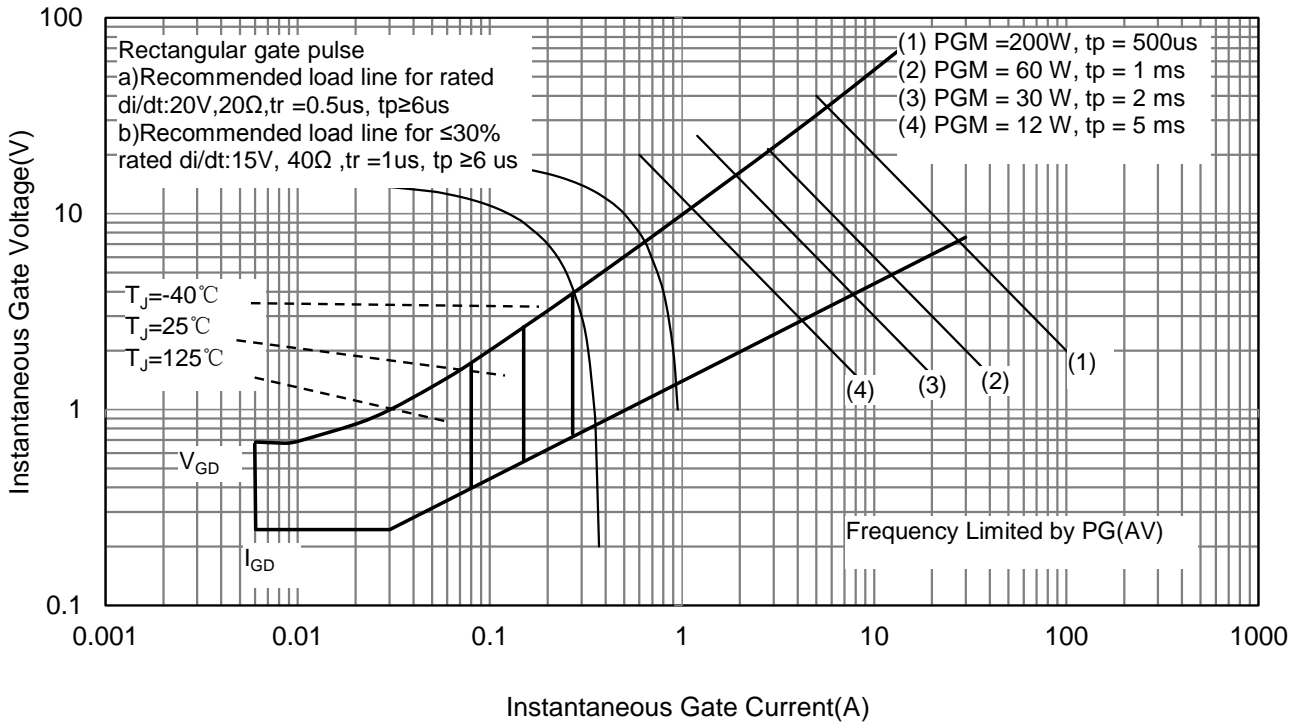
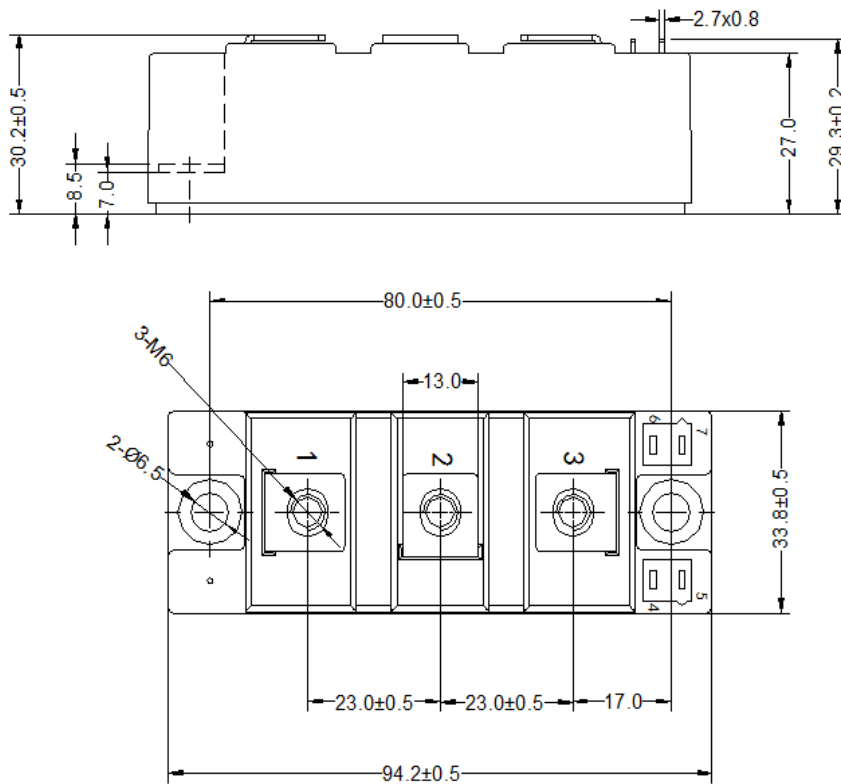


Figure 5. Transient Thermal Impedance



Instantaneous Gate Current(A)  
 Figure 6. Gate Characteristics



Dimensions in (mm)  
 Figure 7. Package Outline