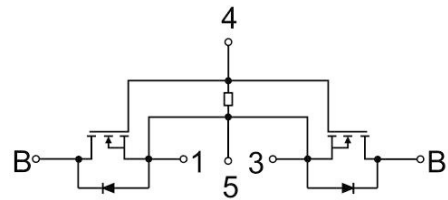


SMM960SG10SP1R75mE MOSFET MODULE

Features:

- Improved Gate, Avalanche and Dynamic dv/dt Ruggedness
- Excellent Gate Charge and Low On-Resistance $R_{DS(on)}$
- 100% Avalanche Tested
- Lead-Free Halogen-Free

Circuit Diagram



Applications:

- Hard Switched and High Frequency Circuits
- Main And Auxiliary AC Drives

Absolute Maximum Ratings ($T_C=25^\circ\text{C}$ unless otherwise specified)

Symbol	Description		Values	Units
V_{DSS}	Drain-Source Blocking Voltage		100	V
V_{GSS}	Gate-Source Voltage		± 20	V
I_D	Continuous Drain Current	$T_C=25^\circ\text{C}$	960	A
		$T_C=100^\circ\text{C}$	672	A
I_{DM}	Pulsed Drain Current	Pulse Width Limited by Max. Junction Temperature	3840	A
I_S	Continuous Source Current(Body Diode)		960	A
I_{SM}	Pulsed Source Current(Body Diode)	Pulse Width Limited by Max. Junction Temperature	3840	A
P_D	Maximum Power Dissipation	$T_C=25^\circ\text{C}$ $T_{Jmax}=150^\circ\text{C}$	730	W

Electrical Characteristics (T_J=25°C unless otherwise specified)

Symbol	Description	Conditions	Min.	Typ.	Max.	Units
V _{GS(th)}	Gate Threshold Voltage	I _D =1mA, V _{DS} =V _{GS}	2.0		4.0	V
R _{DS(on)}	Static Drain-Source On-Resistance	I _D =80A, V _{GS} =10V			0.75	mΩ
I _{DSS}	Drain-Source Leakage Current	V _{DS} =V _{DSS} , V _{GS} =0V			1	mA
I _{GSS}	Gate- Source Leakage Current	V _{GS} =V _{GSS} , V _{DS} =0V			30	μA
C _{iss}	Input Capacitance	V _{DS} =50V, V _{GS} =0V, f=1MHz		TBD		nF
C _{oss}	Output Capacitance			TBD		nF
C _{rss}	Reverse Transfer Capacitance			TBD		nF

Switching Characteristics

Q _g	Total Gate Charge	I _D =480A, V _{DS} =50V, V _{GS} =10V		TBD		μC
Q _{gs}	Gate-Source Charge			TBD		μC
Q _{gd}	Gate-Drain (Miller) Charge			TBD		μC
t _{d(on)}	Turn-on Delay Time	V _{DS} =50V, I _D =480A; V _{GS} =10V; T _J =25°C		TBD		ns
t _r	Rise Time			TBD		ns
t _{d(off)}	Turn-off Delay Time			TBD		ns
t _f	Fall Time			TBD		ns
R _{G(int)}	Internal Gate Resistor			0		Ω
R _{θJC}	MOSFET Thermal Resistance: Junction-to-Case				0.21	°C/W

Electrical Characteristics of Body Diode (T_J=25°C unless otherwise specified)

Symbol	Description	Conditions		Min.	Typ.	Max.	Units
V _{SD}	Forward Voltage	I _S =80A, V _{GS} =0V	T _J =25°C			1.2	V
t _{rr}	Reverse Recovery Time	I _S =480A, di/dt=400A/μs,	T _J =25°C		TBD		ns
Q _{rr}	Reverse Recovery Charge		T _J =25°C		TBD		μC

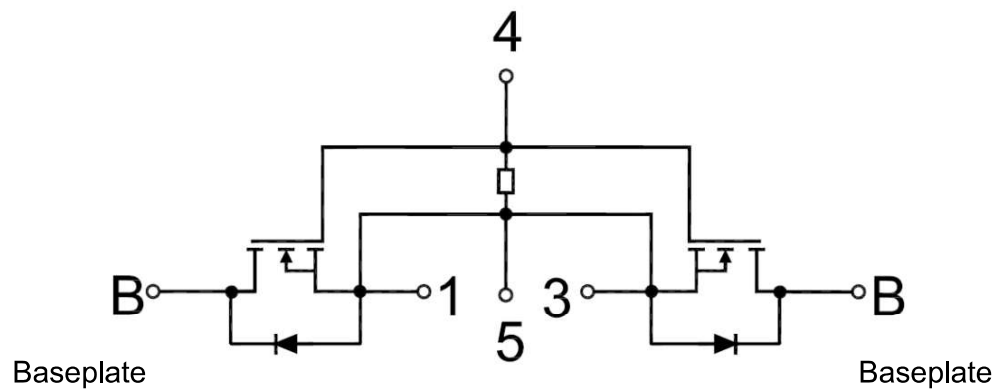
Module Internal Resistance Characteristics

Symbol	Description	Conditions	Min.	Typ.	Max.	Units
R	R Value			1		MΩ
tc	Temperature Coefficient	20℃~60℃	-100		+100	ppm/℃

Module

Symbol	Description		Min.	Typ.	Max.	Units
V _{iso}	Isolation Voltage (All Terminals Shorted)	AC 50Hz, RMS, 1min, I _{ISOL} ≤1mA	2500			V
Internal Isolation			Al ₂ O ₃			
T _{Jmax}	Maximum Junction Temperature				150	℃
T _{JOP}	Operating Junction Temperature Range		-40		+150	℃
T _{stg}	Storage Temperature Range		-40		+125	℃
CTI	Comparative Tracking Index		200			
R _{ecs}	Case-to-Sink Thermally (Conductive Grease Applied)				0.12	℃/W
T	Power Terminal Screw:M5		3.0		5.0	N·m
T	Mounting Screw:M6		4.0		6.0	N·m
G	Weight			93		g

Internal Circuit:



Package Outline (Unit: mm):

