

### MOSFET Module

### PSMG 60/08

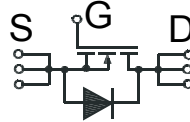
$$V_{DSS} = 800 \text{ V}$$

$$I_{D25} = 60 \text{ A}$$

$$R_{DS(on)} = 0.12 \text{ } \Omega$$

$$t_{rr} \leq 250 \text{ ns}$$

Preliminary Data Sheet



### MOSFET (data related to single chip)

Symbol	Test Conditions	Maximum Ratings
$V_{DSS}$	$T_J = 25 \text{ }^\circ\text{C}$ to $150 \text{ }^\circ\text{C}$	800 V
$V_{DGR}$	$T_J = 25 \text{ }^\circ\text{C}$ to $150 \text{ }^\circ\text{C}$ , $R_{GS} = 1 \text{ M}\Omega$	800 V
$V_{GS}$	continuous	$\pm 20$ V
$V_{GSM}$	transient	$\pm 30$ V
$I_{D25}$	$T_{Case} = 25 \text{ }^\circ\text{C}$	60 A
$I_{DM}$	$T_{Case} = 25 \text{ }^\circ\text{C}$ , pulse width limited by $T_{JM}$	240 A
$I_{AR}$		60 A
$E_{AR}$	$T_C = 25 \text{ }^\circ\text{C}$	64 mJ
$E_{AS}$	$T_C = 25 \text{ }^\circ\text{C}$	3 J
$dv/dt$	$I_S \leq I_{DM}$ , $di/dt \leq 100 \text{ A}/\mu\text{s}$ , $V_{DD} \leq V_{DSS}$ , $T_J \leq 150 \text{ }^\circ\text{C}$ , $R_G = 2 \text{ } \Omega$	5 V/ns
$P_D$	$T_{Case} = 25 \text{ }^\circ\text{C}$	1200 W
$T_J$		$-55 \dots +150 \text{ }^\circ\text{C}$
$T_{JM}$		$+150 \text{ }^\circ\text{C}$
$T_{stg}$		$-55 \dots +150 \text{ }^\circ\text{C}$
$V_{ISOL}$	50/60 Hz, RMS $t = 1 \text{ min.}$	2500 V~
$V_{ISOL}$	$I_{ISOL} \leq 1 \text{ mA}$ $t = 1 \text{ s}$	3000 V~
$M_d$	Mounting torque (M4)	1.5 Nm 14 lb.in.
$a$	max. allowed acceleration	50 $\text{m/s}^2$
<b>Weight</b>		26 g

Symbol	Test Conditions	Characteristic Values
$(T_J = 25 \text{ }^\circ\text{C}$ , unless otherwise specified)		
$V_{DSS}$	$V_{GS} = 0 \text{ V}$ , $I_D = 3 \text{ mA}$	min. 800 V
	$V_{DSS}$ temperature coefficient	typ. 0.096 %/K
$V_{GS(th)}$	$V_{GS} = V_{DS}$ , $I_D = 8 \text{ mA}$	min. 3.0 V
		max. 5.0 V
	$V_{GS(th)}$ temperature coefficient	typ. -0.214 %/K
$I_{GSS}$	$V_{DS} = 0 \text{ V}$ , $V_{GS} = \pm 20 \text{ V}$	max. $\pm 200 \text{ nA}$
$I_{DSS}$	$V_{DS} = V_{DSS}$ , $T_J = 25 \text{ }^\circ\text{C}$	max. 100 $\mu\text{A}$
	$V_{GS} = 0 \text{ V}$ , $T_J = 125 \text{ }^\circ\text{C}$	max. 2 mA
$R_{DS(on)}$	$V_{GS} = 10 \text{ V}$ , $I_D = 0.5 \cdot I_{D25}$	
	pulse test, $t \leq 300 \text{ } \mu\text{s}$ , duty cycle $d \leq 2 \%$	max. 0.12 $\Omega$

**ATTENTION:** All given data are derived from similar modules or estimated from chip data.



Typical picture; changes of the pin configuration is reserved.

### Features

- Package with DCB ceramic base plate
- Isolation voltage 3000 V~
- Planar glass passivated chips
- Low forward voltage drop
- Leads suitable for PC board soldering
- Low  $R_{DS(on)}$  HDMOS™ process
- Fast intrinsic Rectifier
- UL registered, E 148688

### Applications

- DC-DC converters
- Battery chargers
- Switched-mode and resonant-mode power supplies
- DC choppers
- Temperature and lighting controls

### Advantages

- Easy to mount with two screws
- Space and weight savings
- Improved temperature and power cycling capability
- High power density
- Small and light weight

**Caution:** These devices are sensitive to electrostatic discharge. Users should observe proper ESD handling precautions.

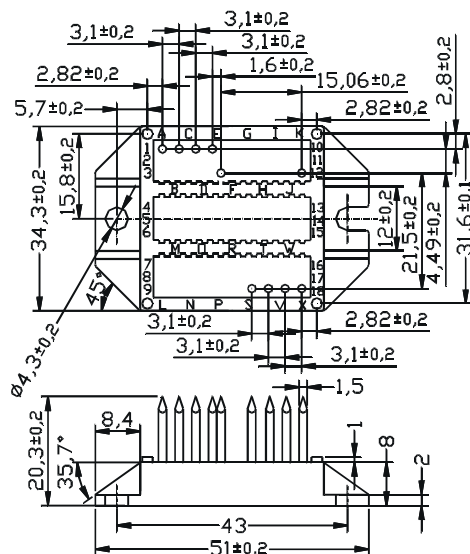
Symbol	Test Conditions	Characteristic Values		
( $T_J = 25\text{ °C}$ , unless otherwise specified)				
$C_{iss}$	$V_{GS} = 0\text{ V}$ ,	typ.	15000	pF
$C_{oss}$	$V_{DS} = 25\text{ V}$ ,	typ.	1840	pF
$C_{rss}$	$f = 1\text{ MHz}$	typ.	440	pF
$t_{d(on)}$	$V_{GS} = 10\text{ V}$ ,	typ.	45	ns
$t_r$	$V_{DS} = 0.5 \cdot V_{DSS}$ ,	typ.	45	ns
$t_{d(off)}$	$I_D = 0.5 \cdot I_{D25}$	typ.	100	ns
$t_f$	$R_G = 1\ \Omega$ (External)	typ.	40	ns
$R_{thJC}$			0.45	K/W
$R_{thCK}$			0.60	K/W

## Source-Drain Diode

Symbol	Test Conditions	Characteristic Values		
( $T_J = 25\text{ °C}$ , unless otherwise specified)				
$I_S$	$V_{GS} = 0\text{ V}$	max.	34	A
$I_{SM}$	repetitive pulse width limited by $T_{JM}$	max.	136	A
$V_{SD}$	$I_F = I_S$ , $V_{GS} = 0\text{ V}$ pulse test, $t \leq 300\ \mu\text{s}$ , duty cycle $d \leq 2\%$	max.	1.5	V
$t_{rr}$	$I_F = I_S$ , $T_J = 25\text{ °C}$	max.	250	ns
	$T_J = 125\text{ °C}$	max.	400	ns
$Q_{RM}$	$-di/dt = 100\text{ A}/\mu\text{s}$ , $T_J = 25\text{ °C}$	typ.	1.4	$\mu\text{C}$
$I_{RM}$	$V_R = 100\text{ V}$	typ.	10	A

## Package style and preliminary outline

Dimensions in mm (1mm = 0.0394")



**Characteristic pin configuration; changes of the pin configuration is reserved.**

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