

**FHC1208**
**Dual N-channel Trench MOSFET**
**Features:**

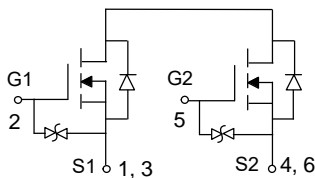
- ◆ Trench MOSFET technology
- ◆ Extremely Low  $R_{SS(ON)}$
- ◆ ESD HBM Class 2
- ◆ Common Drain Design
- ◆ RoHS compliant (Note 4)
- ◆ Halogen-free (Note 4)

**General Features**

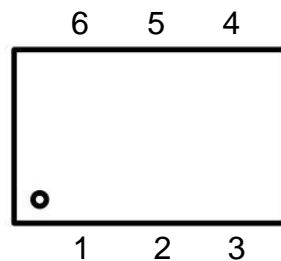
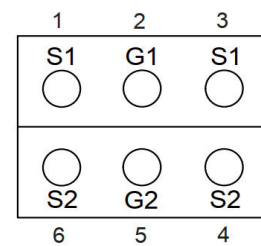
- ◆  $V_{DSS} = 12V$ ,  $I_S = 8A$
- $R_{SS(ON)} = 4.7 m\Omega$  (Typ) @  $V_{GS} = 4.5V$
- $R_{SS(ON)} = 5.1 m\Omega$  (Typ) @  $V_{GS} = 3.8V$
- $R_{SS(ON)} = 5.6 m\Omega$  (Typ) @  $V_{GS} = 3.1V$
- $R_{SS(ON)} = 6.8 m\Omega$  (Typ) @  $V_{GS} = 2.5V$

**Applications**

- ◆ Portable appliances
- ◆ Battery management



1/3: Source1    4/6: Source2  
2 : Gate1      5 : Gate2

**Schematic diagram**

**Marking and pin assignment**

**Bottom View**
**Maximum Ratings** ( $T_A = 25$  unless otherwise noted)

Symbol	Parameter	Value	Units
$V_{SS}$	Source - Source Voltage	12	V
$I_S$	Source Current - Continuous ( $T_C = 25^\circ C$ ) (Note 1)	8	A
	Source Current - Continuous ( $T_C = 100^\circ C$ ) (Note 1)	6	A
$I_{SM}$	Source Current - Pulsed (Note 2)	32	A
$V_{GS}$	Gate-Source Voltage	$\pm 8$	V
$P_D$	Power Dissipation ( $T_C = 25^\circ C$ )	0.54	W
$T_J, T_{STG}$	Operating and Storage Temperature Range	-55 to +150	$^\circ C$

**Thermal Characteristics**

Symbol	Parameter	Value	Units
$R_{\theta JA}$	Thermal Resistance, Junction-to-Ambient Steady State (Note 3)	250	$^\circ C/W$

**Notes:**

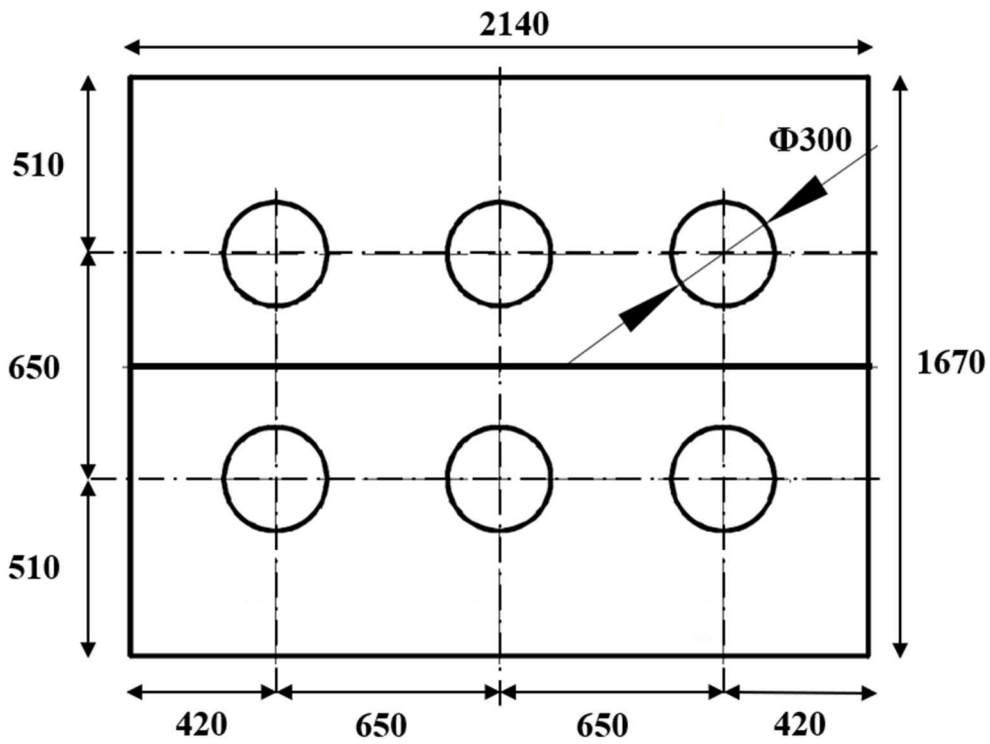
1. The max Source current rating base on silicon
2. Pulse Test: Pulse width  $\leq 300 \mu s$ , Duty cycle  $\leq 2\%$
3. Mount on 1X1 inch 2oz FR - 4 PCB
4. Contact sales for detail information

**Electrical Characteristics** ( $T_J = 25^\circ\text{C}$  unless otherwise noted)

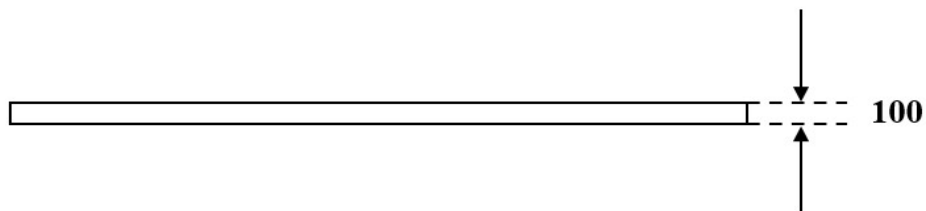
Symbol	Parameter	Test Conditions	Min	Typ	Max	Units
<b>Static Characteristics</b>						
$BV_{SSS}$	Source-Source Breakdown Voltage	$V_{GS} = 0\text{ V}, I_S = 250\ \mu\text{A}$	12			V
$I_{SSS}$	Zero Gate Voltage Source Current	$V_{SS} = 12\text{ V}, V_{GS} = 0\text{ V}$			1	$\mu\text{A}$
$I_{GSS}$	Gate Leakage Current	$V_{GS} = \pm 8\text{ V}, V_{SS} = 0\text{ V}$			$\pm 10$	$\mu\text{A}$
$V_{GS(TH)}$	Gate Threshold voltage	$V_{SS} = V_{GS}, I_S = 250\ \mu\text{A}$	0.4	0.9	1.4	V
$R_{SS(ON)}$	Source-Source on-state resistance	$V_{GS} = 4.5\text{ V}, I_S = 4\text{ A}$		4.7	5.5	$\text{m}\Omega$
		$V_{GS} = 3.8\text{ V}, I_S = 4\text{ A}$		5.1	5.9	$\text{m}\Omega$
		$V_{GS} = 3.1\text{ V}, I_S = 3\text{ A}$		5.6	6.5	$\text{m}\Omega$
		$V_{GS} = 2.5\text{ V}, I_S = 2\text{ A}$		6.8	9.0	$\text{m}\Omega$
$V_{FSS}$	Forward Source to Source Voltage	$V_{GS} = 0\text{ V}, I_S = 4\text{ A}$		0.7	1.3	V
<b>Dynamic Characteristics</b>						
$C_{ISS}$	Input capacitance	$V_{SS} = 10\text{ V}, V_{GS} = 0\text{ V},$ $F = 1\text{ MHz}$		2760		$\text{pF}$
$C_{OSS}$	Output capacitance			427		$\text{pF}$
$C_{RSS}$	Reverse transfer capacitance			370		$\text{pF}$
$R_G$	Gate resistance	$F = 1\text{ MHz}$		1		$\text{K}\Omega$
<b>Switching Characteristics</b>						
$T_{D(ON)}$	Turn On Delay Time	$V_{SS} = 10\text{ V}, I_S = 4\text{ A},$ $V_{GS} = 4.5\text{ V}, R_G = 3\ \Omega$		3.9		ns
$T_R$	Rise Time			4.9		ns
$T_{D(OFF)}$	Turn Off Delay Time			12.2		ns
$T_F$	Fall Time			7.8		ns
$Q_G$	Total Gate Charge	$V_{SS} = 10\text{ V}, I_S = 4\text{ A},$ $V_{GS} = 4.5\text{ V}$		24.7		nC
$Q_{GS}$	Gate-Source Charge			8.5		nC
$Q_{GD}$	Gate-Drain Charge			7.6		nC

Package Information : WLCSP6-2.14x1.67x0.1

Bottom View



Side View



## Disclaimer

The information given in this document describes the independent performance of the product, but similar performance is not guaranteed under other working conditions, and cannot be guaranteed when installed with other products or equipment. To achieve the required performance of the product in actual scenarios, the customer should conduct a complete application test to assess the functionality of the product.

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