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With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

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# EMH2308

## P-Channel Power MOSFET -20V, -3A, 85mΩ, Dual EMH8

ON Semiconductor®

<http://onsemi.com>

### Features

- The EMH2308 incorporates a P-channel MOSFET that feature low ON-resistance and ultrahigh-speed switching, thereby enabling high-density mounting
- 1.8V drive
- Halogen free compliance
- Protection diode in

### Specifications

#### Absolute Maximum Ratings at Ta=25°C

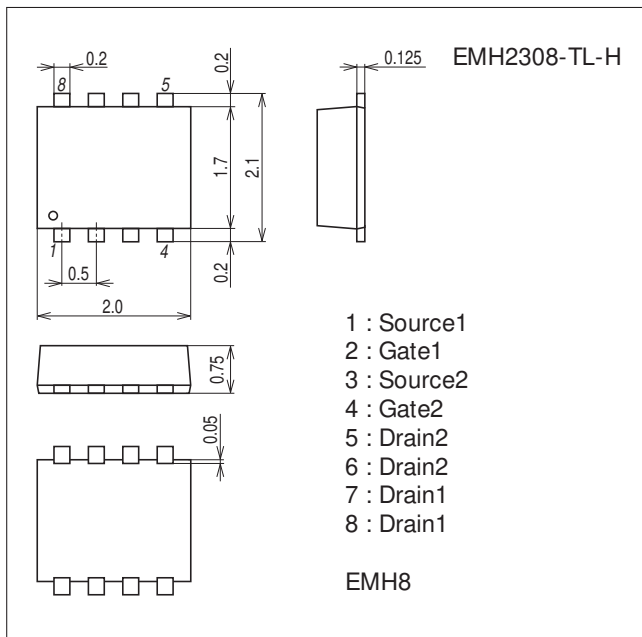
Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	V <sub>DSS</sub>		-20	V
Gate-to-Source Voltage	V <sub>GSS</sub>		±10	V
Drain Current (DC)	I <sub>D</sub>		-3	A
Drain Current (Pulse)	I <sub>DP</sub>	PW <sub>≤</sub> 10μs, duty cycle <sub>≤</sub> 1%	-20	A
Allowable Power Dissipation	P <sub>D</sub>	When mounted on ceramic substrate (900mm <sup>2</sup> ×0.8mm) 1unit	1.0	W
Total Dissipation	P <sub>T</sub>	When mounted on ceramic substrate (900mm <sup>2</sup> ×0.8mm)	1.2	W
Channel Temperature	T <sub>ch</sub>		150	°C
Storage Temperature	T <sub>stg</sub>		-55 to +150	°C

Stresses exceeding Maximum Ratings may damage the device. Maximum Ratings are stress ratings only. Functional operation above the Recommended Operating Conditions is not implied. Extended exposure to stresses above the Recommended Operating Conditions may affect device reliability.

### Package Dimensions

unit : mm (typ)

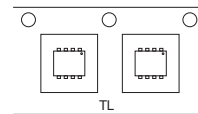
7045-002



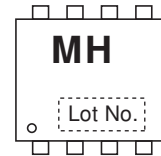
### Product & Package Information

- Package : EMH8
- JEITA, JEDEC : -
- Minimum Packing Quantity : 3,000 pcs./reel

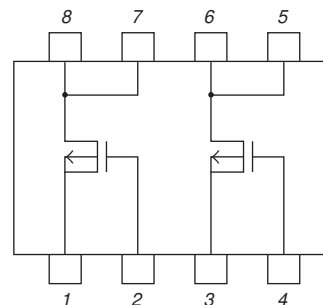
### Packing Type : TL



### Marking



### Electrical Connection

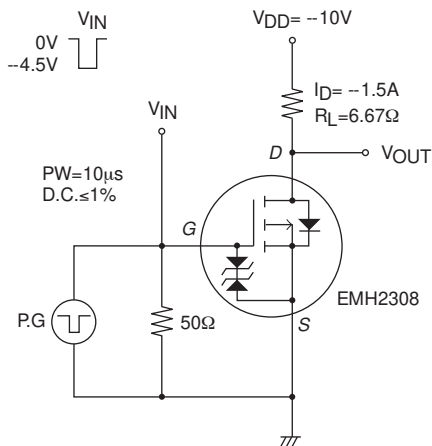


# EMH2308

## Electrical Characteristics at Ta=25°C

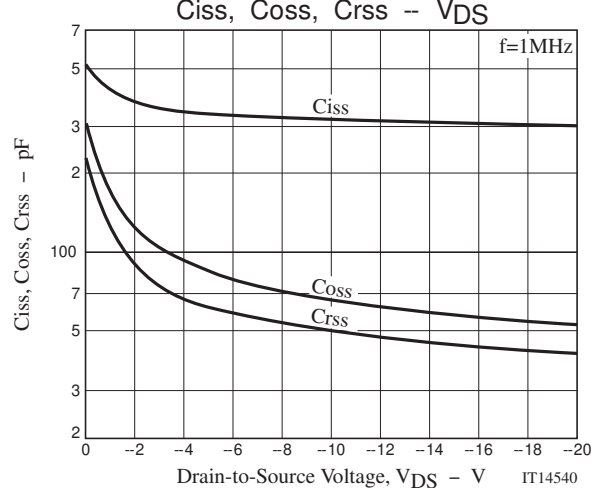
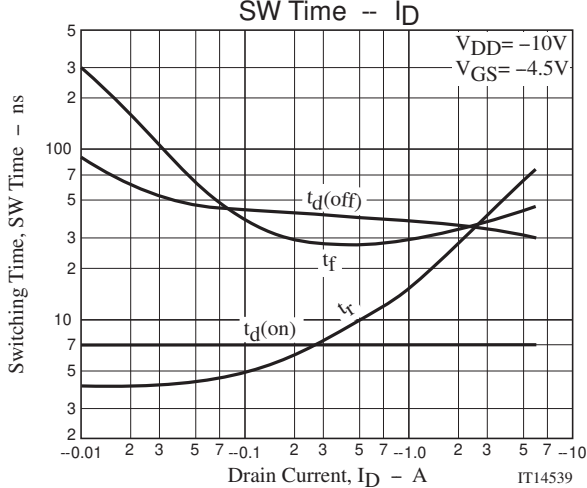
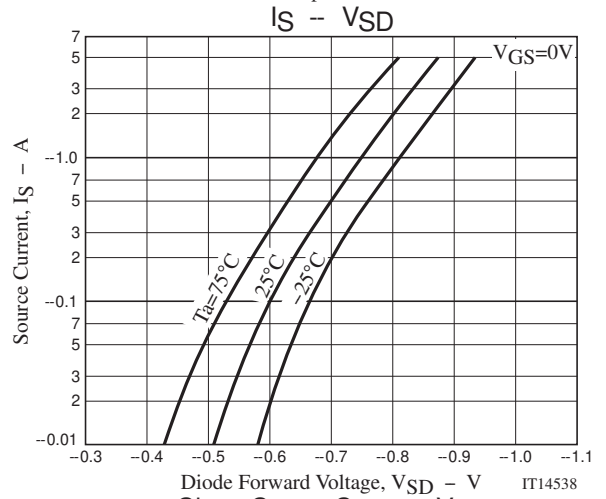
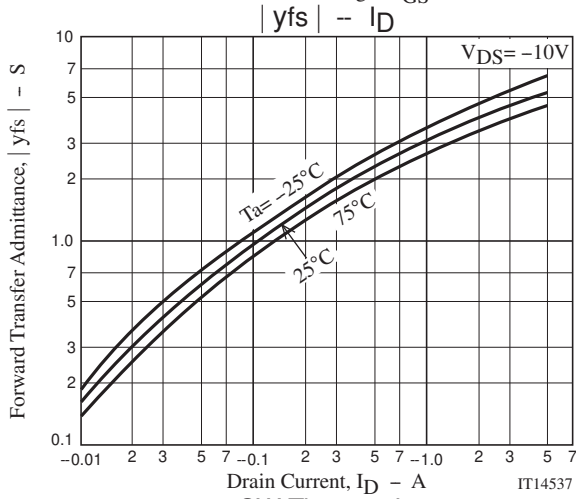
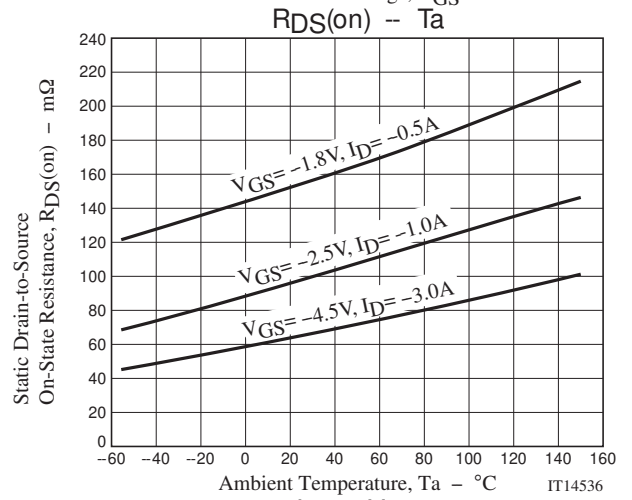
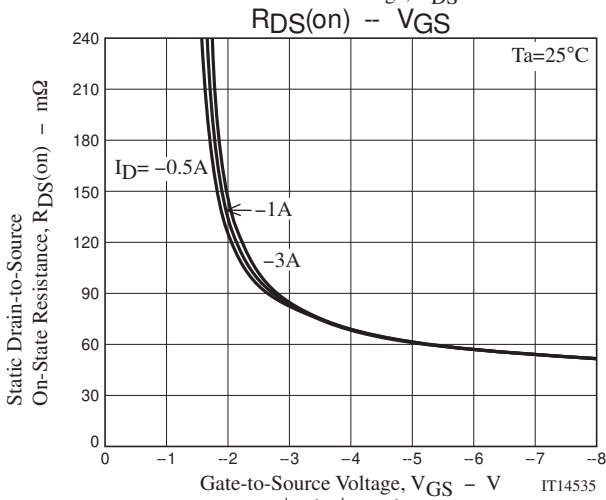
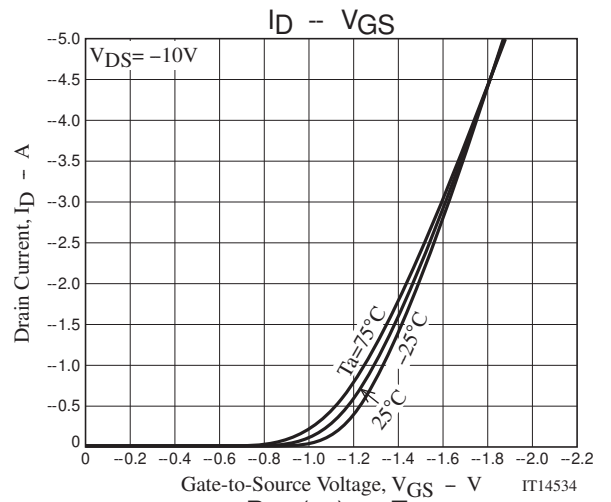
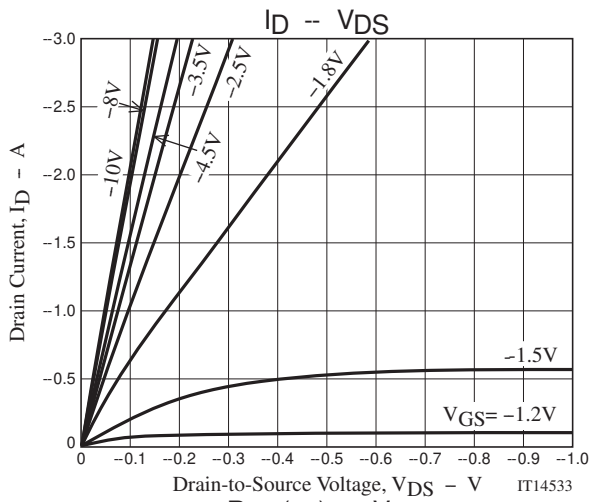
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Drain-to-Source Breakdown Voltage	V(BR)DSS	ID=-1mA, VGS=0V	-20			V
Zero-Gate Voltage Drain Current	IDSS	VDS=-20V, VGS=0V			-1	μA
Gate-to-Source Leakage Current	IGSS	VGS=±8V, VDS=0V			±10	μA
Cutoff Voltage	VGS(off)	VDS=-10V, ID=-1mA	-0.4		-1.3	V
Forward Transfer Admittance	yfs	VDS=-10V, ID=-1.5A	2.1	3.6		S
Static Drain-to-Source On-State Resistance	RDS(on)1	ID=-3A, VGS=-4.5V		65	85	mΩ
	RDS(on)2	ID=-1.0A, VGS=-2.5V		98	137	mΩ
	RDS(on)3	ID=-0.5A, VGS=-1.8V		155	235	mΩ
Input Capacitance	Ciss			320		pF
Output Capacitance	Coss	VDS=-10V, f=1MHz		66		pF
Reverse Transfer Capacitance	Crss			50		pF
Turn-ON Delay Time	td(on)	See specified Test Circuit.		7.1		ns
Rise Time	tr			21		ns
Turn-OFF Delay Time	td(off)			37		ns
Fall Time	tf			32		ns
Total Gate Charge	Qg				4.0	
Gate-to-Source Charge	Qgs	VDS=-10V, VGS=-4.5V, ID=-3A		0.6		nC
Gate-to-Drain "Miller" Charge	Qgd			1.1		nC
Diode Forward Voltage	VSD	IS=-3A, VGS=0V		-0.83	-1.2	V

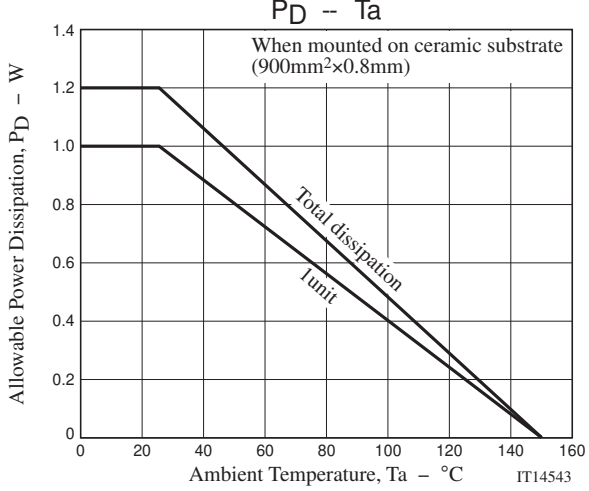
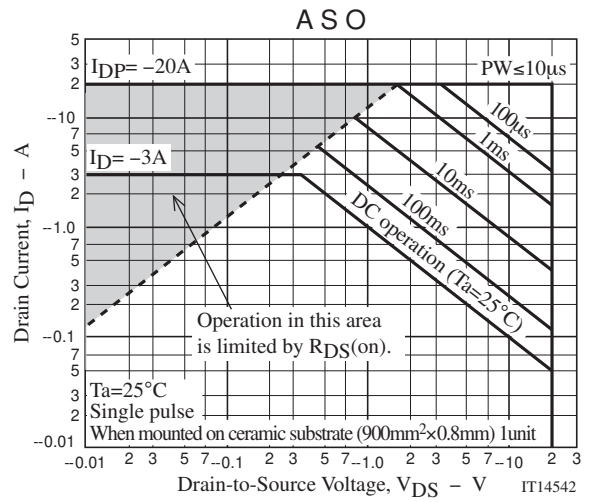
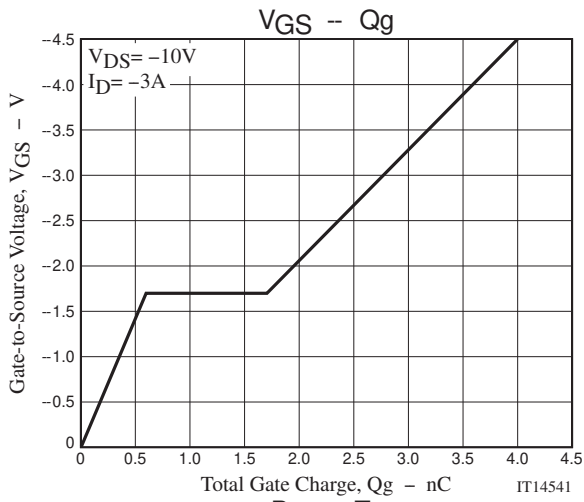
## Switching Time Test Circuit



## Ordering Information

Device	Package	Shipping	memo
EMH2308-TL-H	EMH8	3,000pcs./reel	Pb Free and Halogen Free





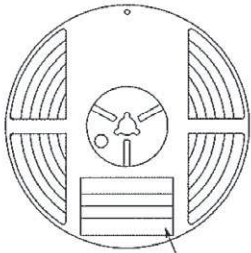
Embossed Taping Specification

EMH2308-TL-H

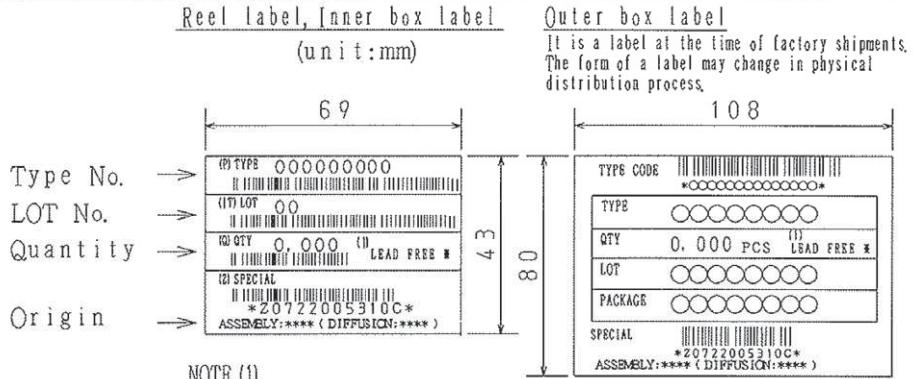
1. Packing Format

Package Name	Carrier Tape Type	Maximum Number of devices contained (pcs)			Packing format	
		Reel	Inner box	Outer box	Inner BOX (C-1)	Outer BOX (A-7)
EMH8	MCP4	3,000	15,000	90,000	5 reels contained Dimensions:mm (external) 183×72×185	6 inner boxes contained Dimensions:mm (external) 440×195×210

Packing method



Reel label



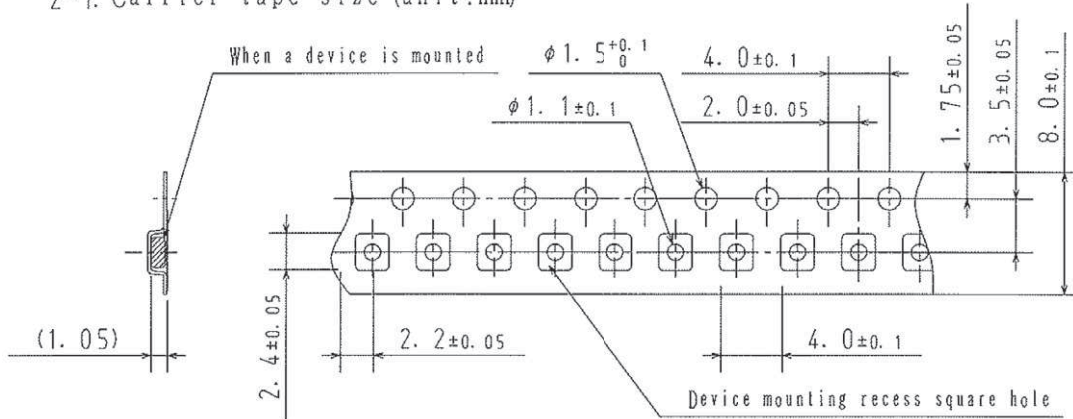
NOTE (1)

The LEAD FREE \* description shows that the surface treatment of the terminal is lead free.

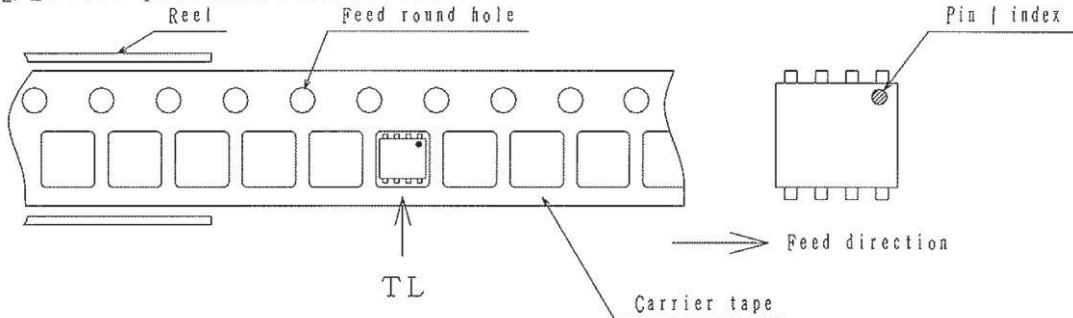
Label	JEITA Phase
LEAD FREE 3	JEITA Phase 3A
LEAD FREE 4	JEITA Phase 3

2. Taping configuration

2-1. Carrier tape size (unit:mm)



2-2. Device placement direction

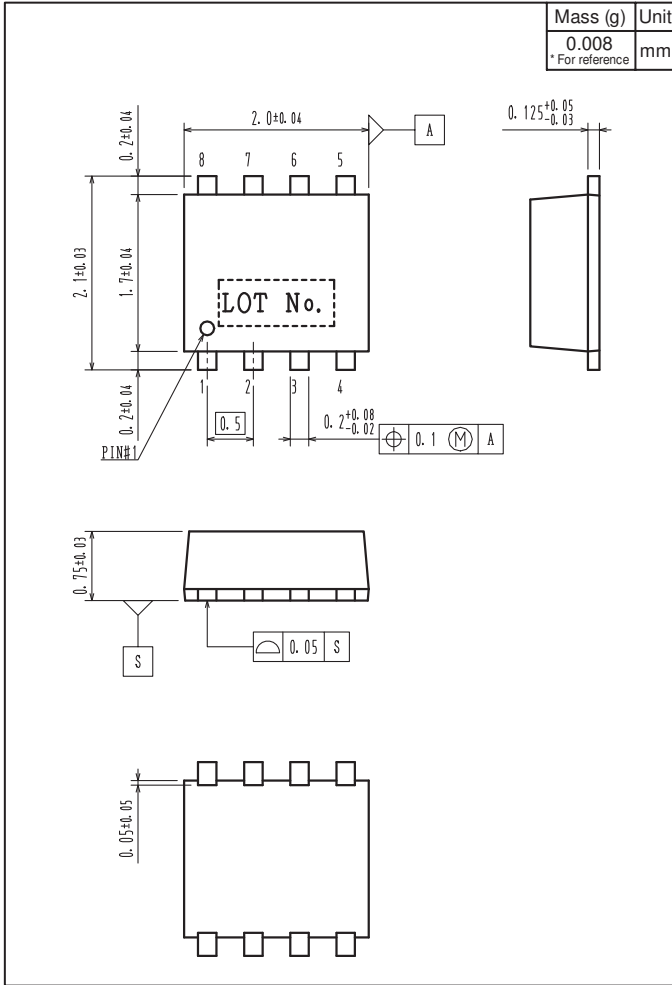


Those with pin | index on the feed hole side.....TL

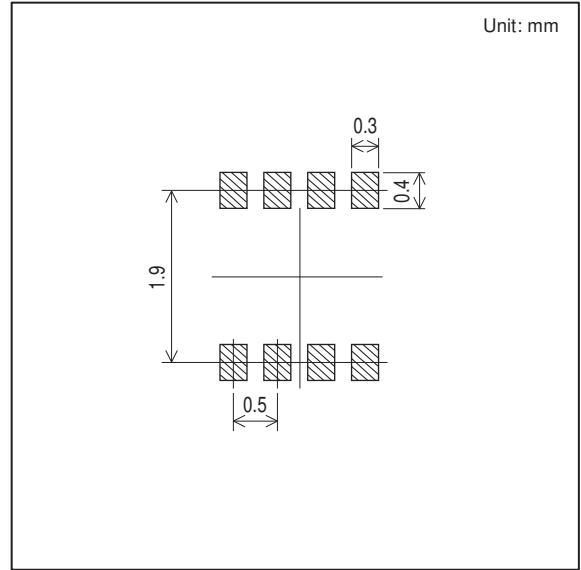
# EMH2308

## Outline Drawing

EMH2308-TL-H



## Land Pattern Example



Note on usage : Since the EMH2308 is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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