

N-Channel Power MOSFET

30V, 4A, 59mΩ, Dual EMH8

<http://onsemi.com>

- The EMH2409 incorporates a N-channel MOSFET that feature low ON-resistance and ultrahigh-speed switching, thereby enabling high-density mounting
- 4V drive
- Halogen free compliance
- Protection diode in

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	V _{DSS}		30	V
Gate-to-Source Voltage	V _{GSS}		±20	V
Drain Current (DC)	I _D		4	A
Drain Current (Pulse)	I _{DP}	PW≤10μs, duty cycle≤1%	16	A
Allowable Power Dissipation	P _D	When mounted on ceramic substrate (900mm ² ×0.8mm) 1unit	1.0	W
Total Dissipation	P _T	When mounted on ceramic substrate (900mm ² ×0.8mm)	1.2	W
Channel Temperature	T _{ch}		150	°C
Storage Temperature	T _{stg}		-55 to +150	°C

EMH2409-TL-H

1 : Source1
 2 : Gate1
 3 : Source2
 4 : Gate2
 5 : Drain2
 6 : Drain2
 7 : Drain1
 8 : Drain1

EMH8

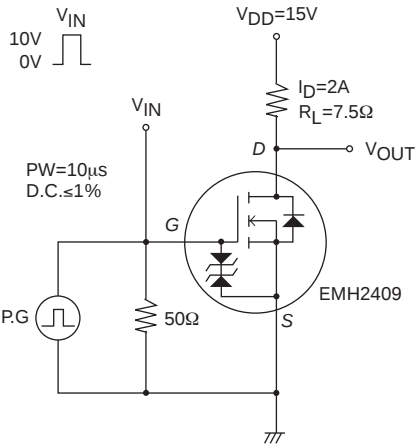
Diagram of a component with pins. The component has four pins on the top and four pins on the bottom. The label "LJ" is printed on the top half, and "Lot No." is printed on the bottom half, enclosed in a dashed box.

EMH2409

Electrical Characteristics at Ta=25°C

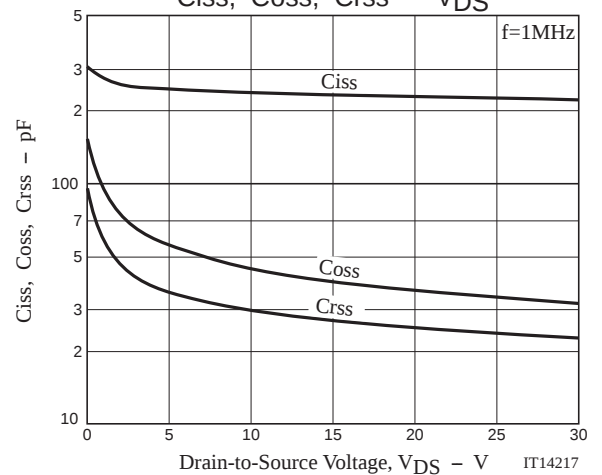
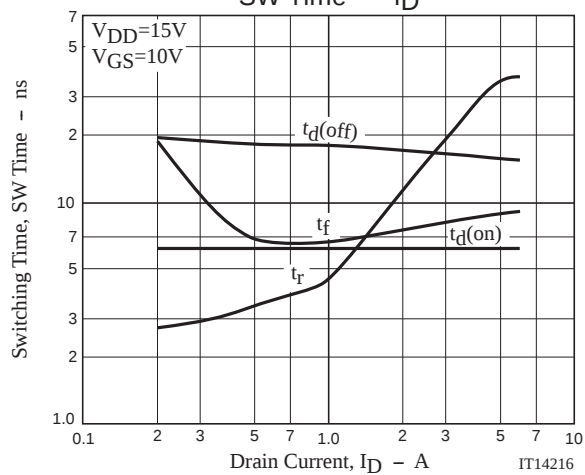
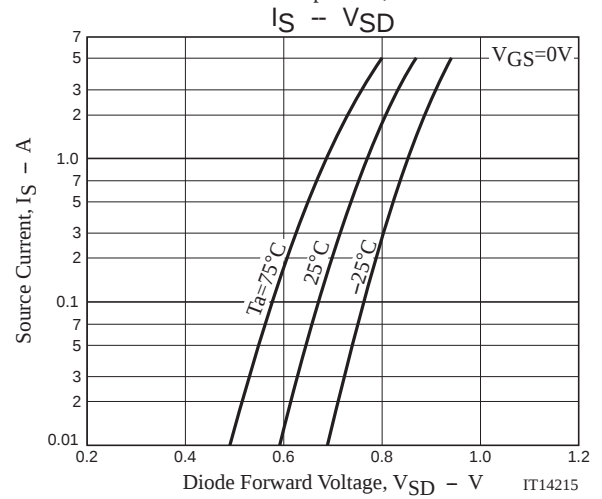
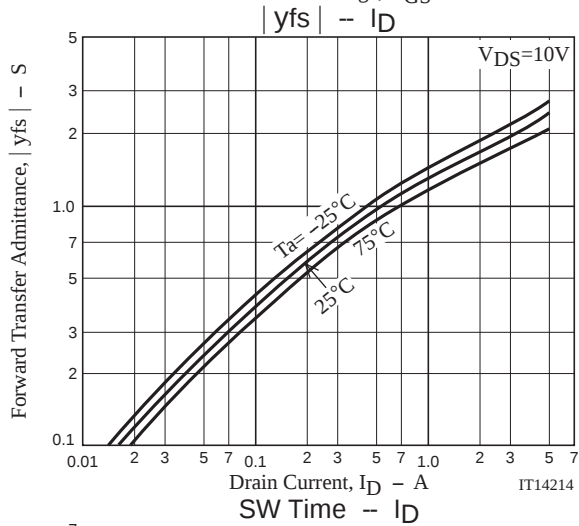
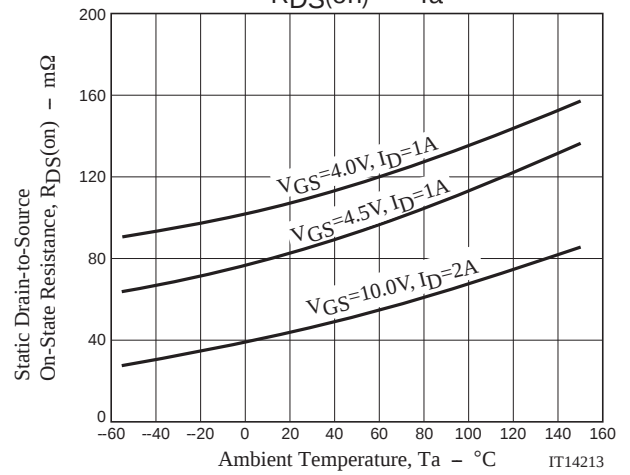
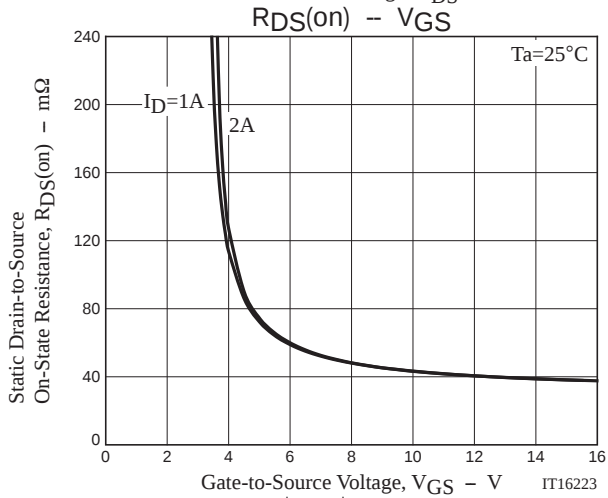
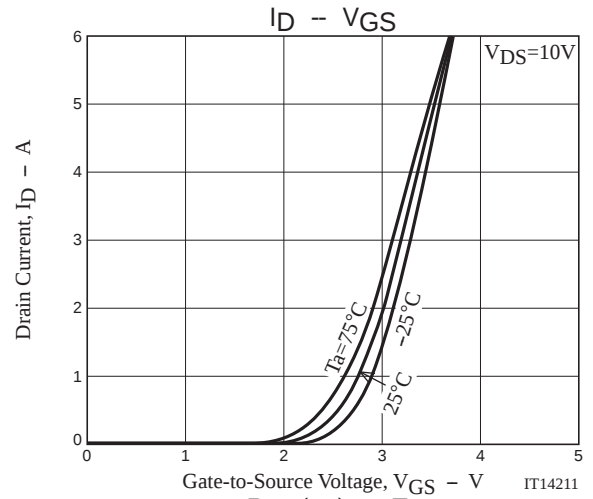
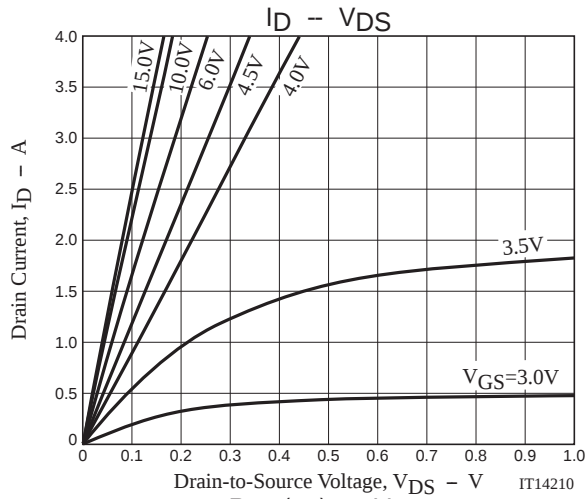
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Drain-to-Source Breakdown Voltage	$V_{(BR)DSS}$	$I_D=1mA, V_{GS}=0V$	30			V
Zero-Gate Voltage Drain Current	I_{DSS}	$V_{DS}=30V, V_{GS}=0V$			1	μA
Gate-to-Source Leakage Current	I_{GSS}	$V_{GS}=\pm 16V, V_{DS}=0V$			± 10	μA
Cutoff Voltage	$V_{GS(off)}$	$V_{DS}=10V, I_D=1mA$	1.2		2.6	V
Forward Transfer Admittance	$ y_{fs} $	$V_{DS}=10V, I_D=2A$		1.66		S
Static Drain-to-Source On-State Resistance	$R_{DS(on)1}$	$I_D=2A, V_{GS}=10V$		45	59	$m\Omega$
	$R_{DS(on)2}$	$I_D=1A, V_{GS}=4.5V$		85	119	$m\Omega$
	$R_{DS(on)3}$	$I_D=1A, V_{GS}=4V$		110	155	$m\Omega$
Input Capacitance	C_{iss}	$V_{DS}=10V, f=1MHz$		240		pF
Output Capacitance	C_{oss}			45		pF
Reverse Transfer Capacitance	C_{rss}			30		pF
Turn-ON Delay Time	$t_{d(on)}$	See specified Test Circuit.		6.2		ns
Rise Time	t_r			11		ns
Turn-OFF Delay Time	$t_{d(off)}$			17		ns
Fall Time	t_f			7.5		ns
Total Gate Charge	Q_g	$V_{DS}=15V, V_{GS}=10V, I_D=4A$		4.4		nC
Gate-to-Source Charge	Q_{gs}			1.1		nC
Gate-to-Drain "Miller" Charge	Q_{gd}			0.64		nC
Diode Forward Voltage	V_{SD}	$I_S=4A, V_{GS}=0V$		0.82	1.2	V

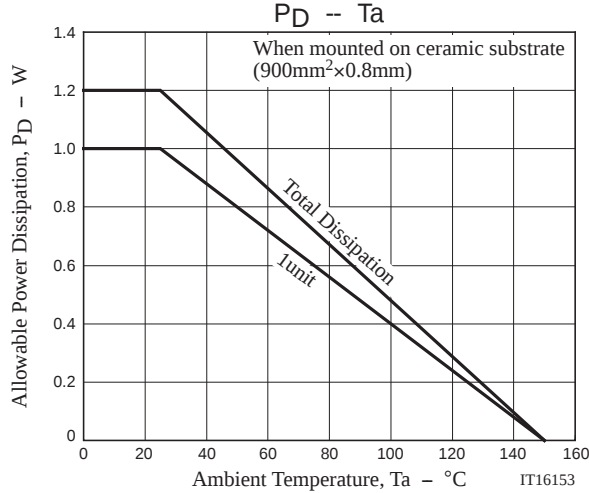
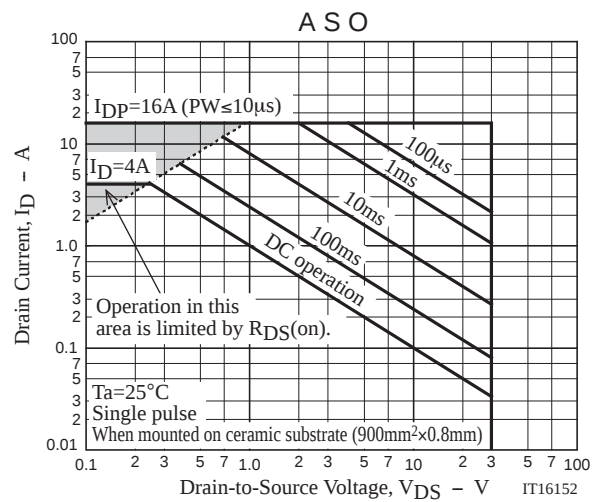
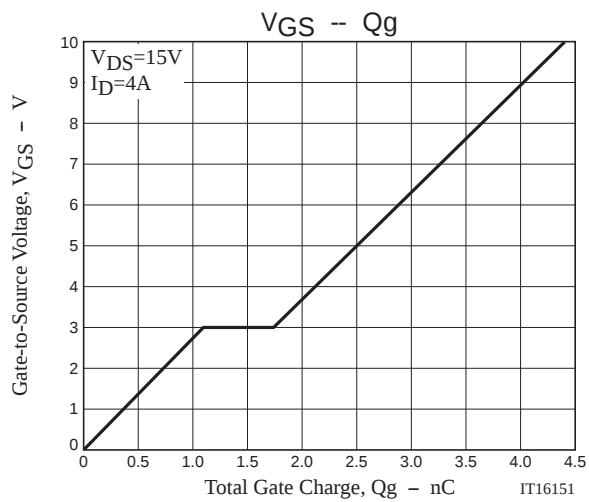
Switching Time Test Circuit



Ordering Information

Device	Package	Shipping	memo
EMH2409-TL-H	EMH8	3,000pcs./reel	Pb Free and Halogen Free





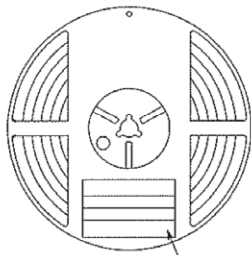
Embossed Taping Specification

EMH2409-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

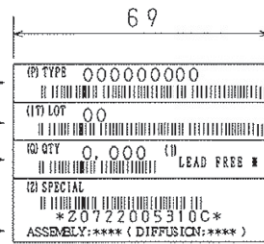
Packing method



Type No.
LOT No.
Quantity
Origin

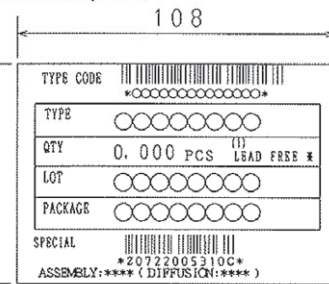
Reel label

Reel label, Inner box label
(unit:mm)



Outer box label

It is a label at the time of factory shipments.
The form of a label may change in physical distribution process.



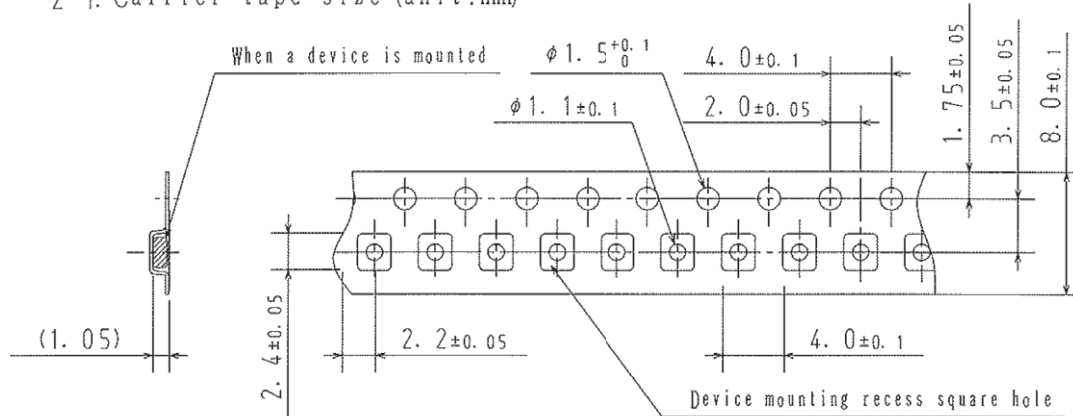
NOTE (1)

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

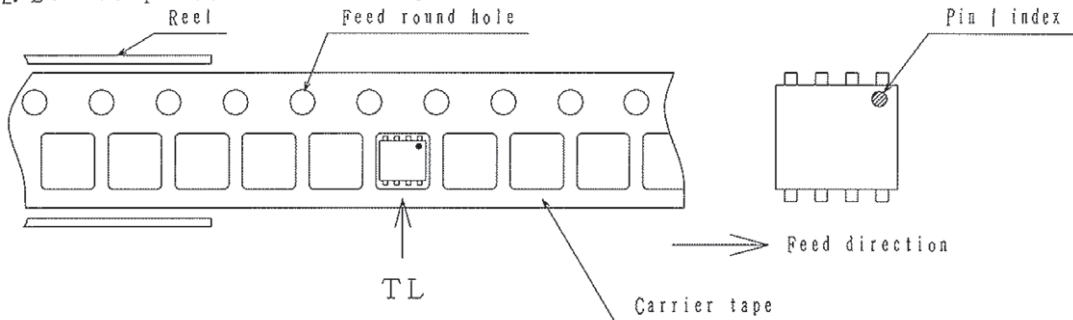
Label	JEITA Phase
LEAD FREE 3	JEITA Phase 3A
LEAD FREE 4	JEITA Phase 3

2. Taping configuration

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

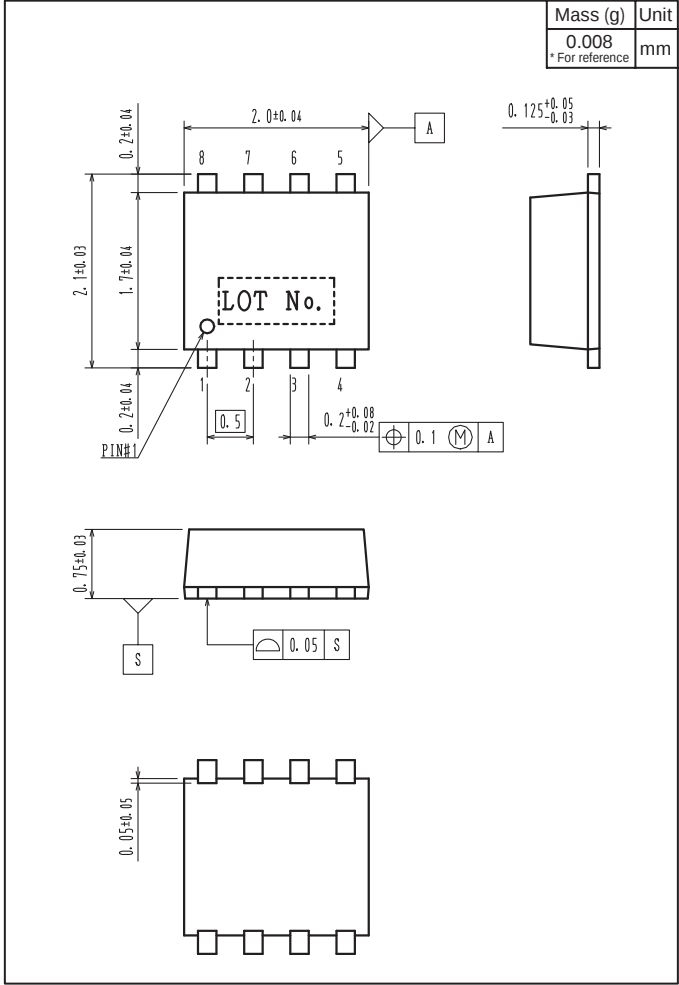


2-2. Device placement direction

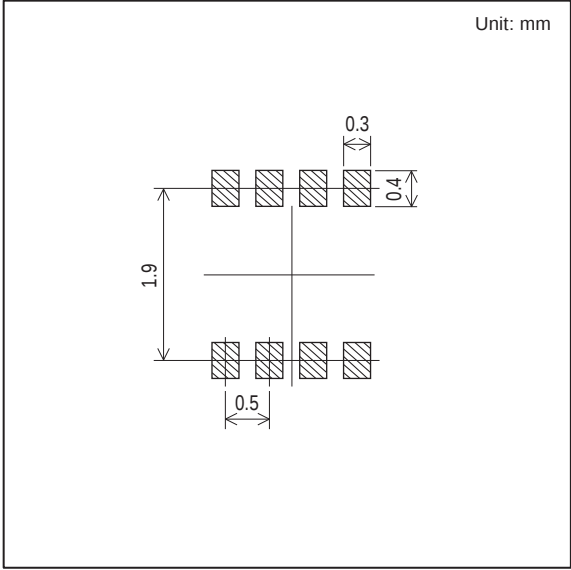


Those with pin 1 index on the feed hole side.....TL

Outline Drawing
EMH2409-TL-H



Land Pattern Example



Note on usage : Since the EMH2409 is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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