

N-Channel Power MOSFET

30V, 4A, 59mΩ, Dual EMH8

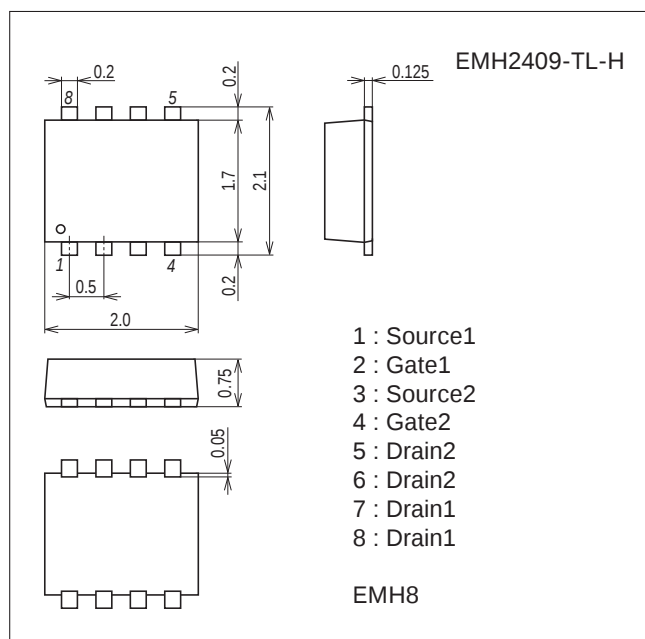
<http://onsemi.com>

- 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

Absolute Maximum Ratings at Ta=25°C

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

The diagram shows a 4x4 grid with numbers 1 through 8 at the corners. The top row is labeled 8, 7, 6, 5 from left to right. The bottom row is labeled 1, 2, 3, 4 from left to right. The grid contains two logic gates: an AND gate in the center and an OR gate to its right. The AND gate has inputs from the top-left and bottom-left cells (positions 8 and 1) and its output is in the center-right cell (position 6). The OR gate has inputs from the top-right and bottom-right cells (positions 5 and 4) and its output is in the center-left cell (position 7).

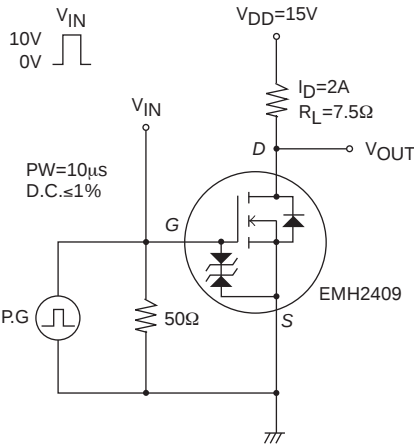


EMH2409

Electrical Characteristics at Ta=25°C

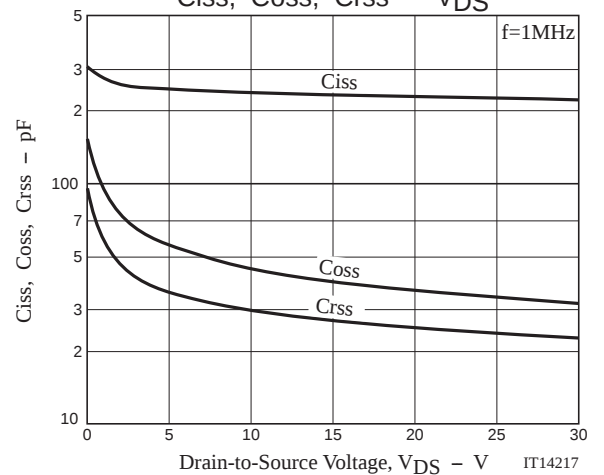
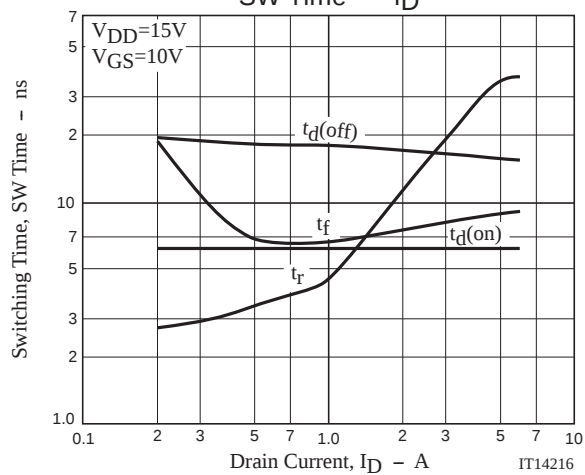
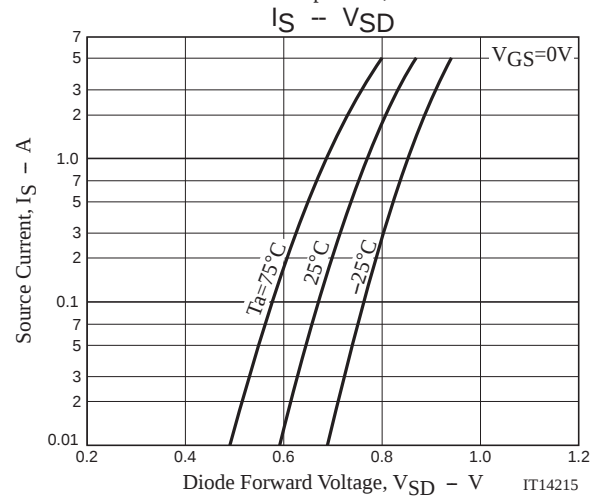
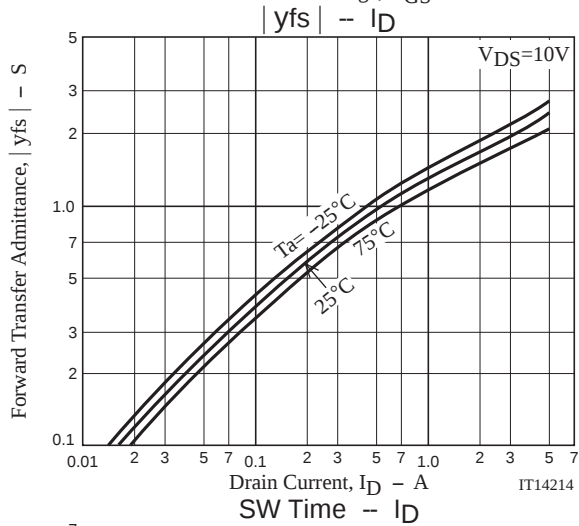
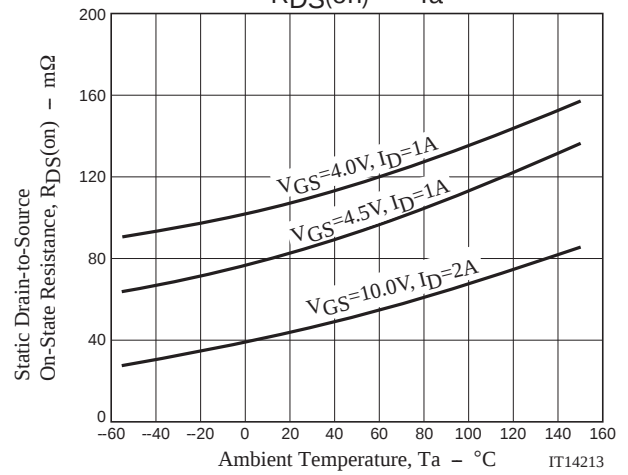
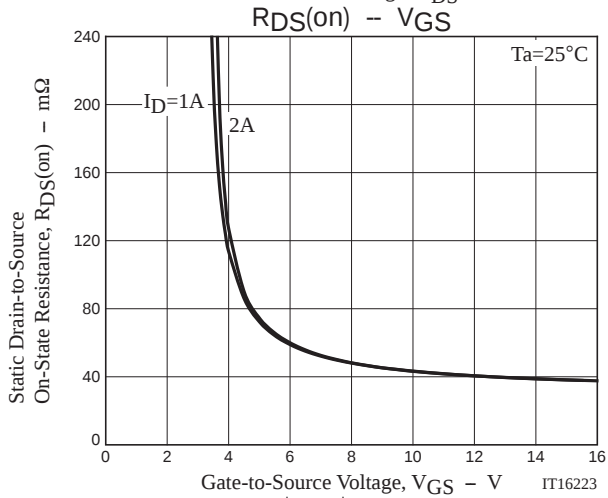
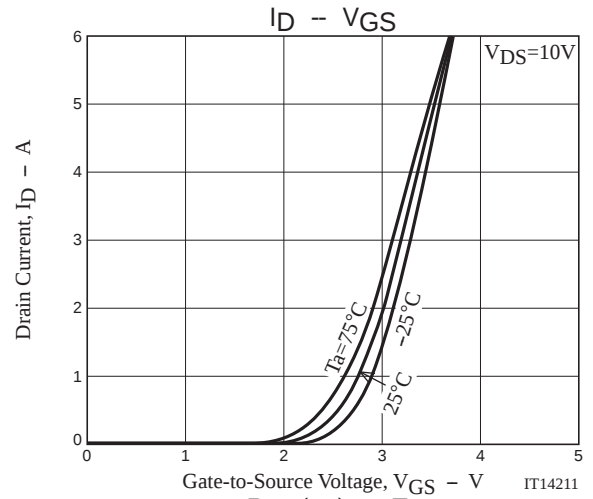
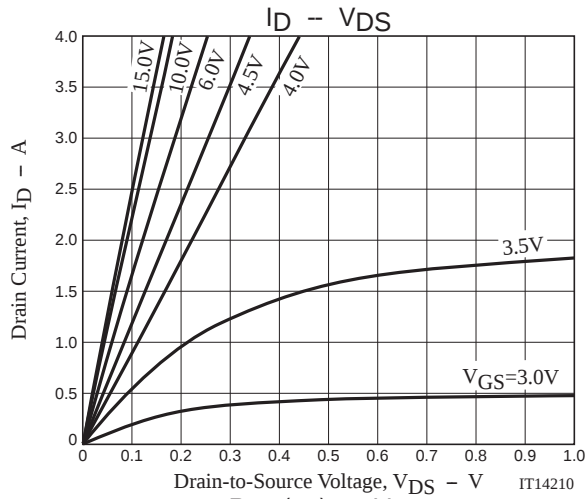
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Drain-to-Source Breakdown Voltage	$V_{(BR)DSS}$	$I_D=1mA, V_{GS}=0V$	30			V
Zero-Gate Voltage Drain Current	I_{DSS}	$V_{DS}=30V, V_{GS}=0V$			1	μA
Gate-to-Source Leakage Current	I_{GSS}	$V_{GS}=\pm 16V, V_{DS}=0V$			± 10	μA
Cutoff Voltage	$V_{GS(off)}$	$V_{DS}=10V, I_D=1mA$	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 Ω
	$R_{DS(on)2}$	$I_D=1A, V_{GS}=4.5V$		85	119	m Ω
	$R_{DS(on)3}$	$I_D=1A, V_{GS}=4V$		110	155	m Ω
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

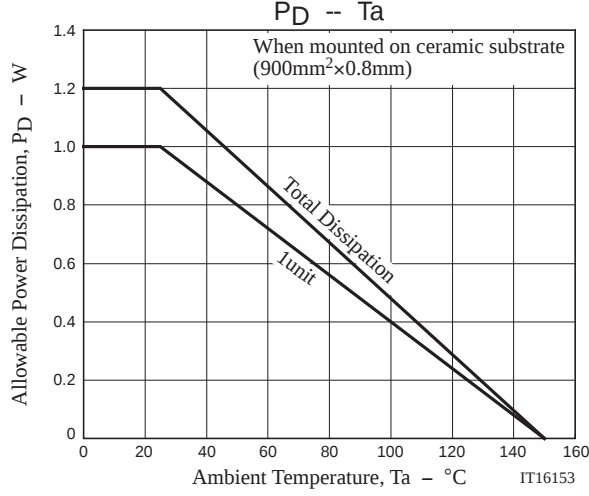
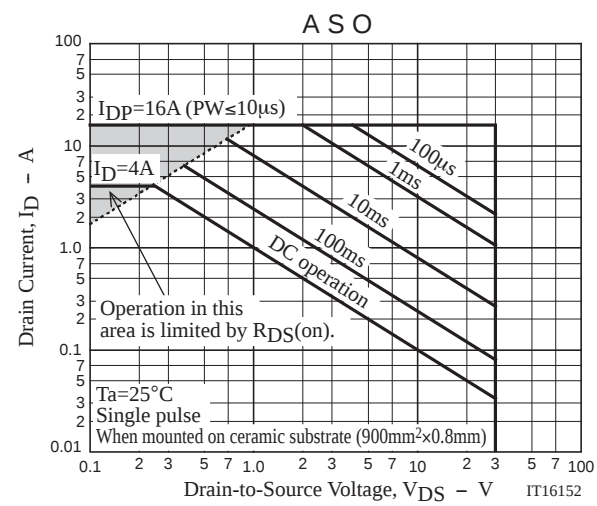
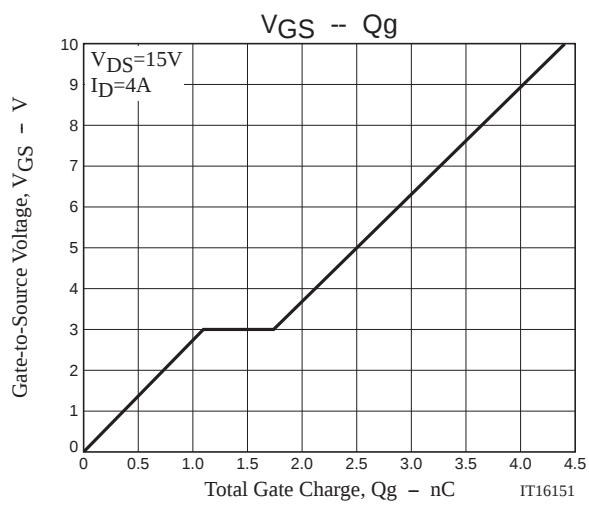
Switching Time Test Circuit



Ordering Information

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





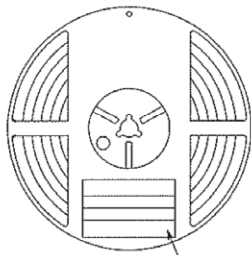
Embossed Taping Specification

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

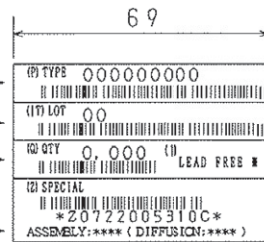
Packing method



Type No.
LOT No.
Quantity
Origin

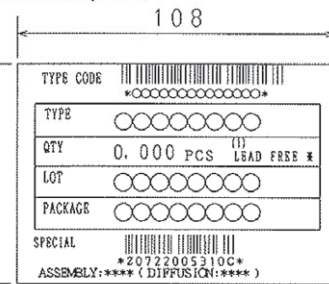
Reel label

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.



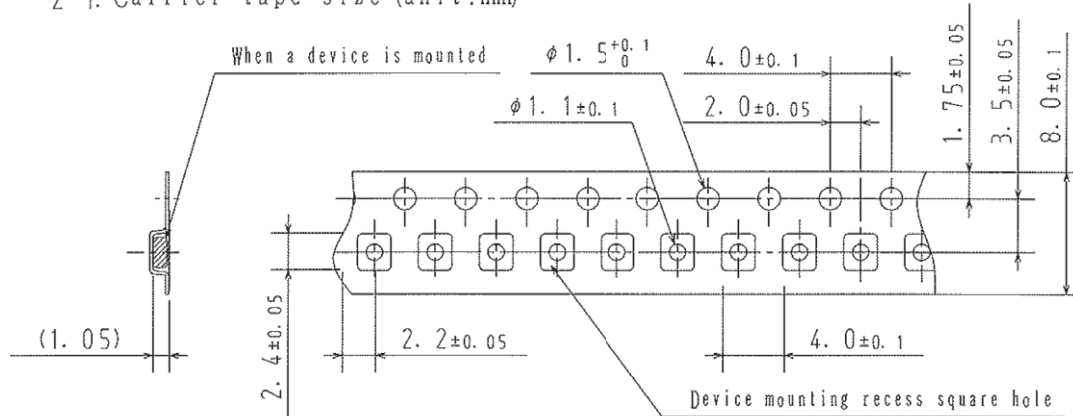
NOTE (1)

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

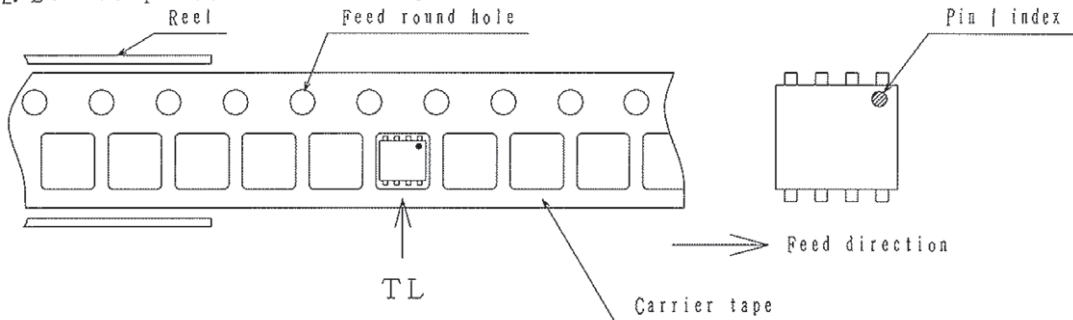
Label	JEITA Phase
LEAD FREE 3	JEITA Phase 3A
LEAD FREE 4	JEITA Phase 3

2. Taping configuration

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

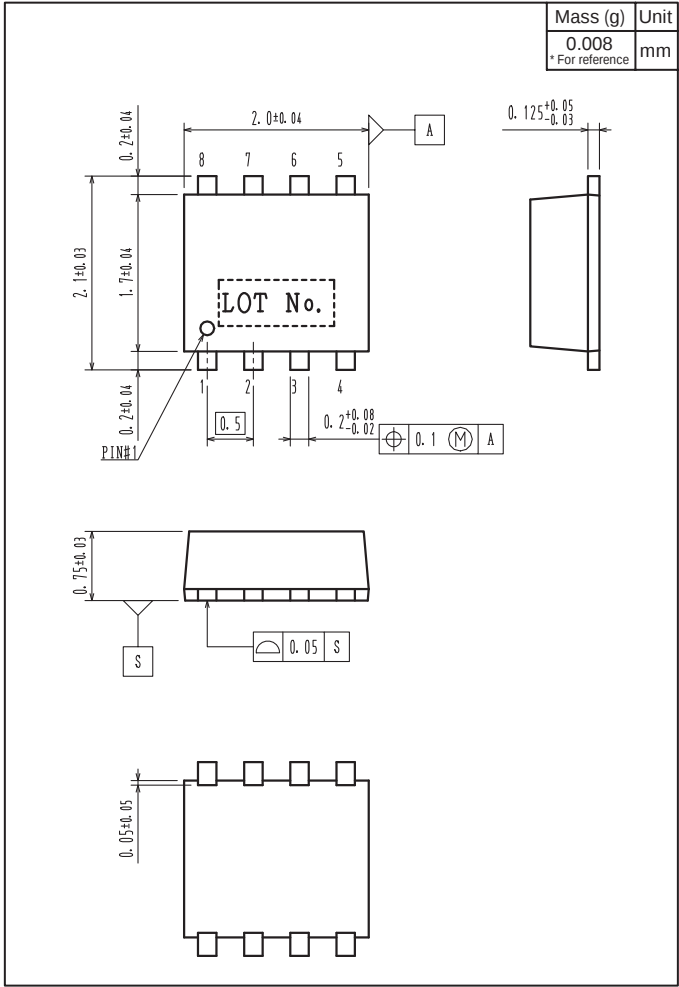


2-2. Device placement direction

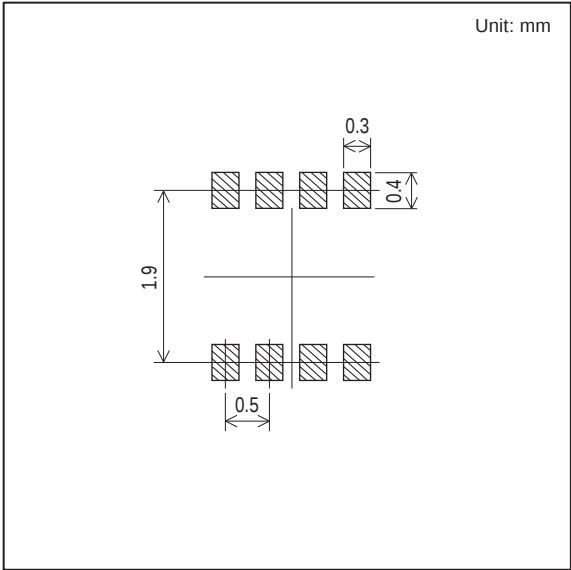


Those with pin 1 index on the feed hole side.....TL

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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