



SANYO Semiconductors

DATA SHEET

An ON Semiconductor Company

EMH2411R — N-Channel Silicon MOSFET General-Purpose Switching Device Applications

Features

- Low ON-resistance
- Best suited for LiB charging and discharging switch
- Common-drain type
- 2.5V drive
- Halogen free compliance
- Protection diode in

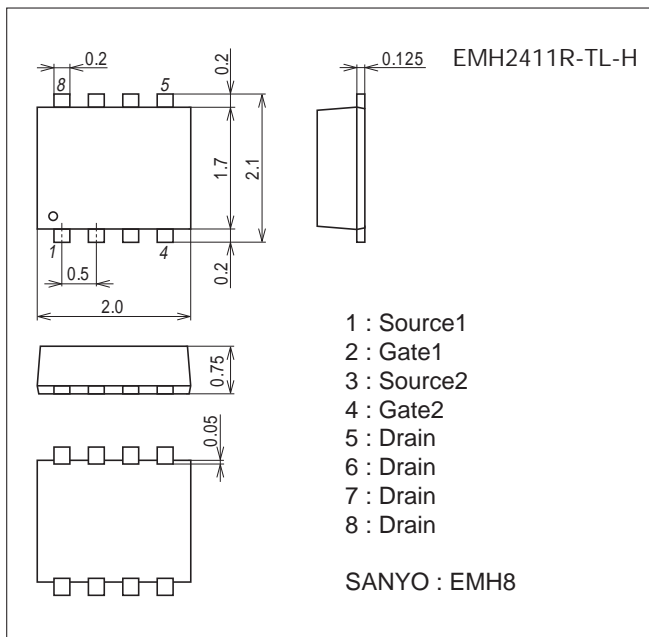
Specifications

Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	V _{DSS}		30	V
Gate-to-Source Voltage	V _{GSS}		±12	V
Drain Current (DC)	I _D		5	A
Drain Current (Pulse)	I _{DP}	PW≤10μs, duty cycle≤1%	60	A
Allowable Power Dissipation	P _D	When mounted on ceramic substrate (900mm ² ×0.8mm) 1unit	1.3	W
Total Dissipation	P _T	When mounted on ceramic substrate (900mm ² ×0.8mm)	1.4	W
Channel Temperature	T _{ch}		150	°C
Storage Temperature	T _{stg}		-55 to +150	°C

Package Dimensions

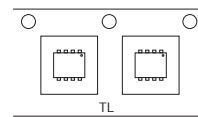
unit : mm (typ)
7045-006



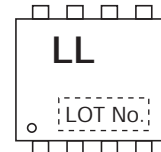
Product & Package Information

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

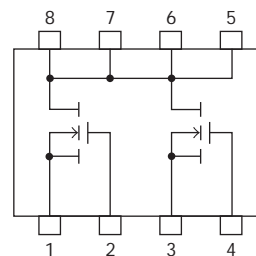
Packing Type : TL



Marking



Electrical Connection

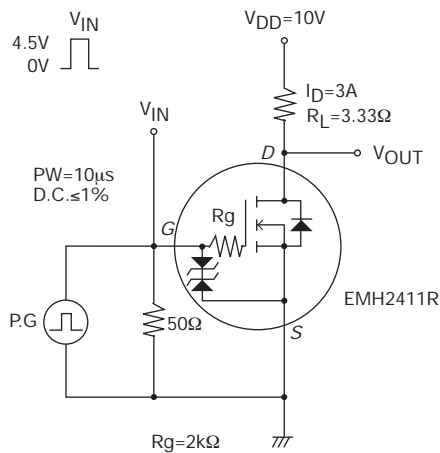


EMH2411R

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} =±8V, V _{DS} =0V			±10	μA
Cutoff Voltage	V _{GS(off)}	V _{DS} =10V, I _D =1mA	0.5		1.3	V
Forward Transfer Admittance	y _{fs}	V _{DS} =10V, I _D =3A	3	5		S
Static Drain-to-Source On-State Resistance	R _{DS(on)1}	I _D =2.5A, V _{GS} =4.5V	19.5	28	36.5	mΩ
	R _{DS(on)2}	I _D =2.5A, V _{GS} =4V	20	29	38	mΩ
	R _{DS(on)3}	I _D =1A, V _{GS} =3.7V	21	30	39	mΩ
	R _{DS(on)4}	I _D =1A, V _{GS} =3.1V	21	33	46.5	mΩ
	R _{DS(on)5}	I _D =1A, V _{GS} =2.5V	22.5	38	54	mΩ
Turn-ON Delay Time	t _{d(on)}	See specified Test Circuit.		300		ns
Rise Time	t _r			840		ns
Turn-OFF Delay Time	t _{d(off)}			3200		ns
Fall Time	t _f			1650		ns
Total Gate Charge	Q _g				5.9	
Gate-to-Source Charge	Q _{gs}	V _{DS} =10V, V _{GS} =4.5V, I _D =5A		1		nC
Gate-to-Drain "Miller" Charge	Q _{gd}			1.2		nC
Diode Forward Voltage	V _{SD}		I _S =5A, V _{GS} =0V		0.8	1.2

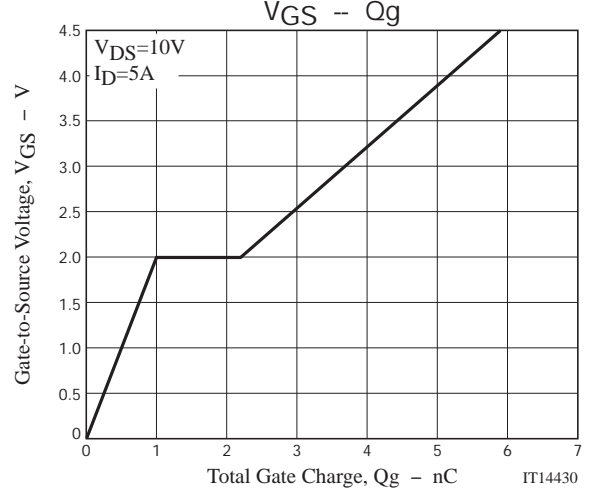
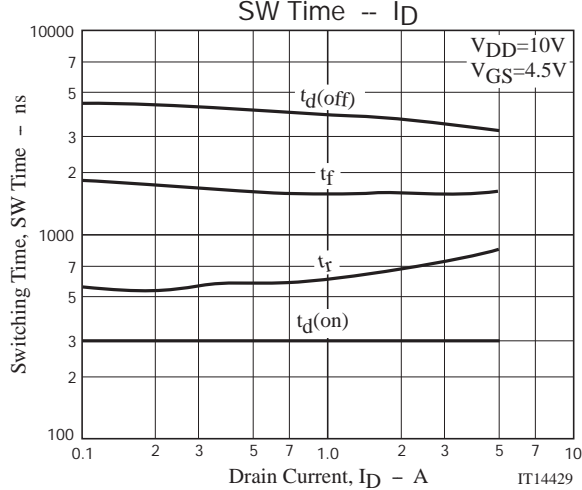
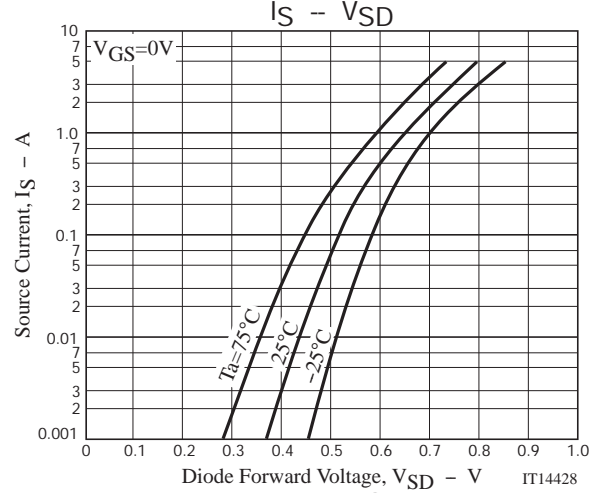
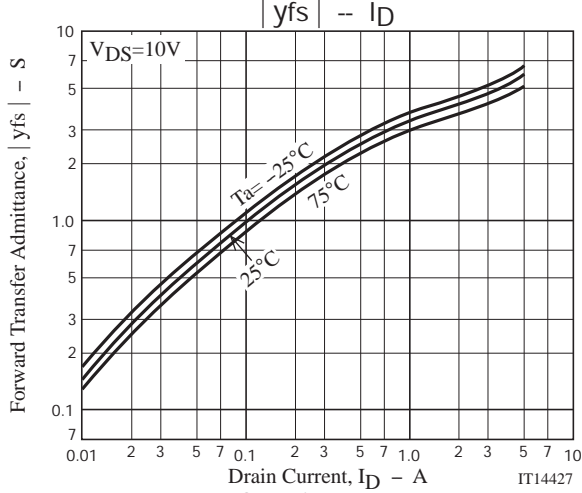
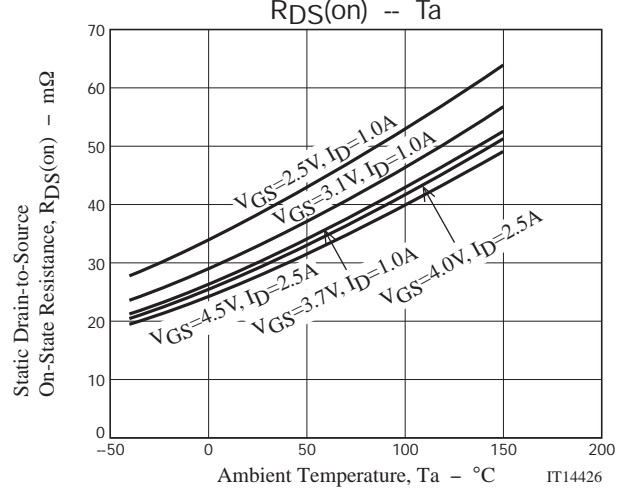
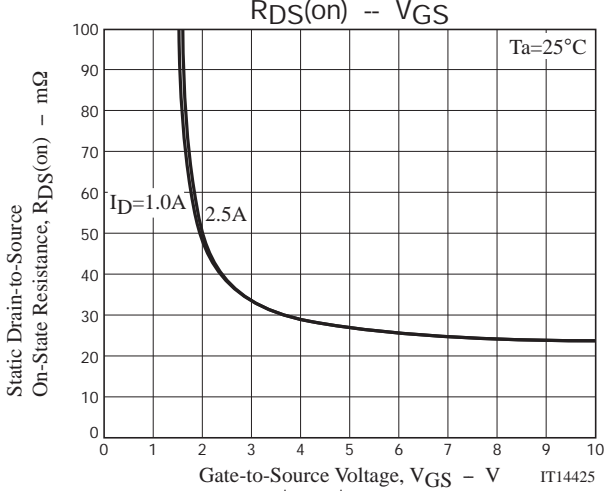
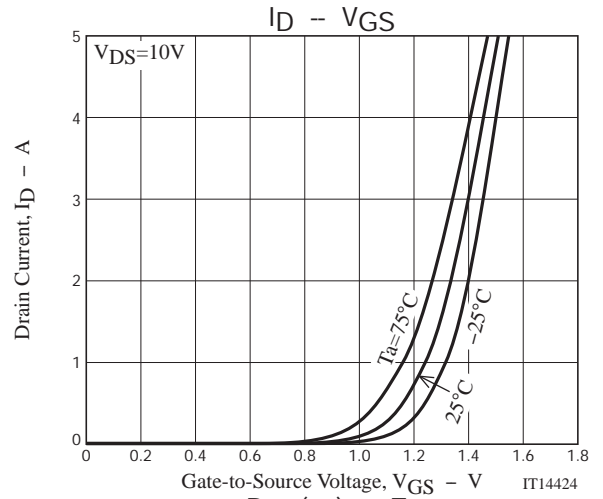
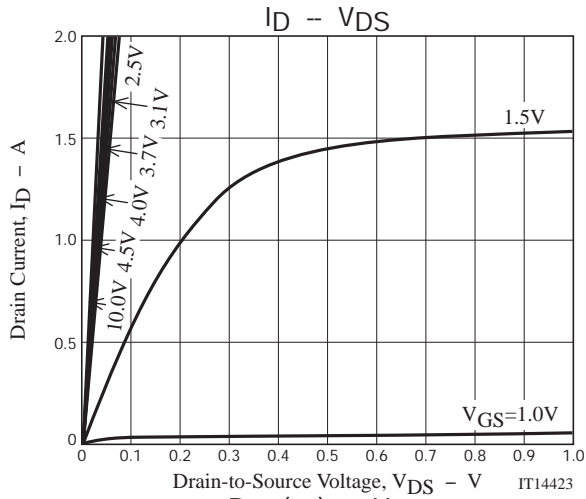
Switching Time Test Circuit



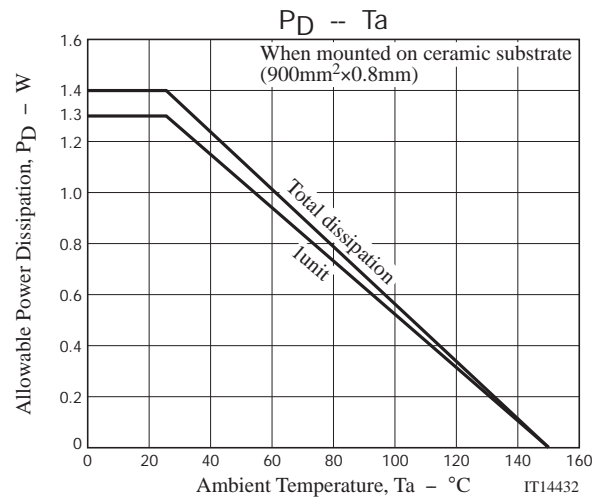
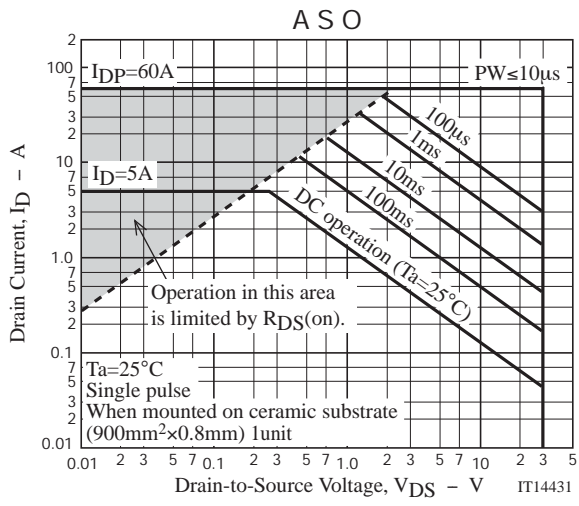
Ordering Information

Device	Package	Shipping	memo
EMH2411R-TL-H	EMH8	3,000pcs./reel	Pb Free and Halogen Free

EMH2411R



EMH2411R



EMH2411R

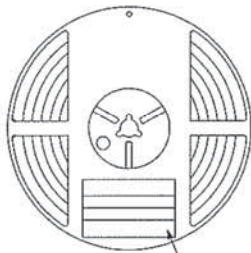
Embossed Taping Specification

EMH2411R-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

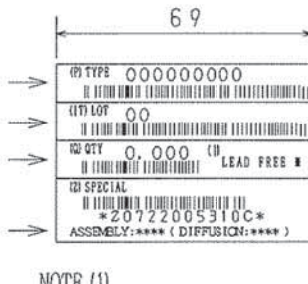
Packing method



Reel label

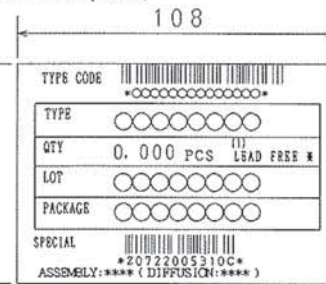
Type No. →
LOT No. →
Quantity →
Origin →

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.



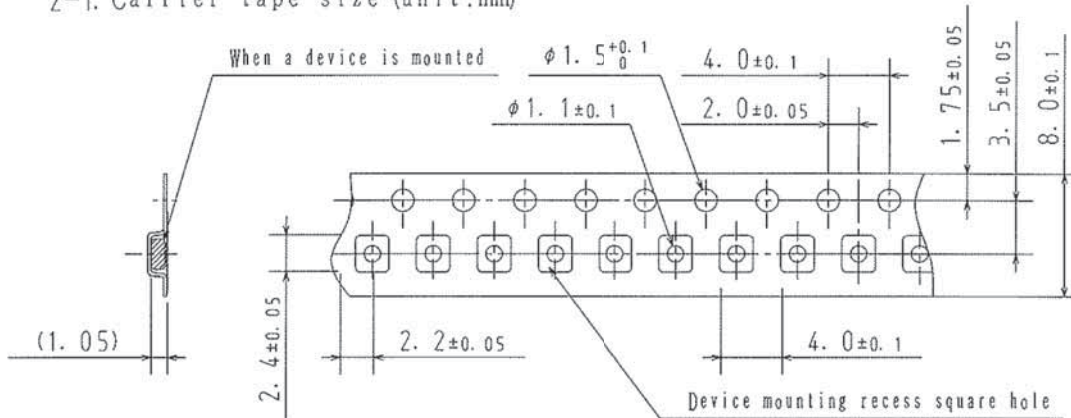
NOTE (1)

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

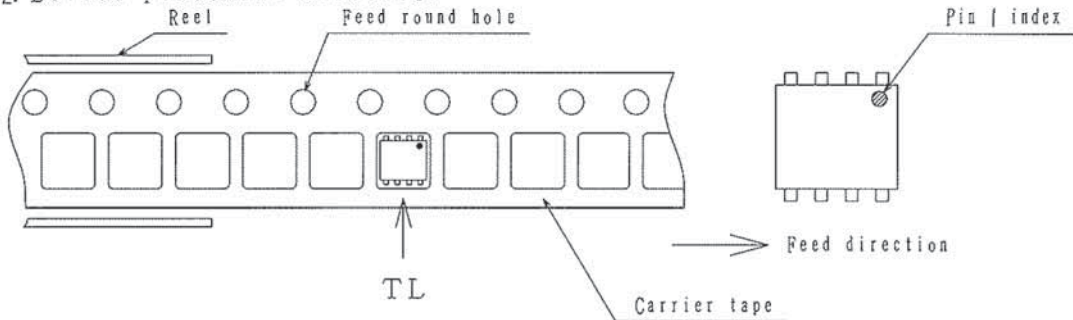
Label	JEITA Phase
LEAD FREE 3	JEITA Phase 3A
LEAD FREE 4	JEITA Phase 3

2. Taping configuration

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



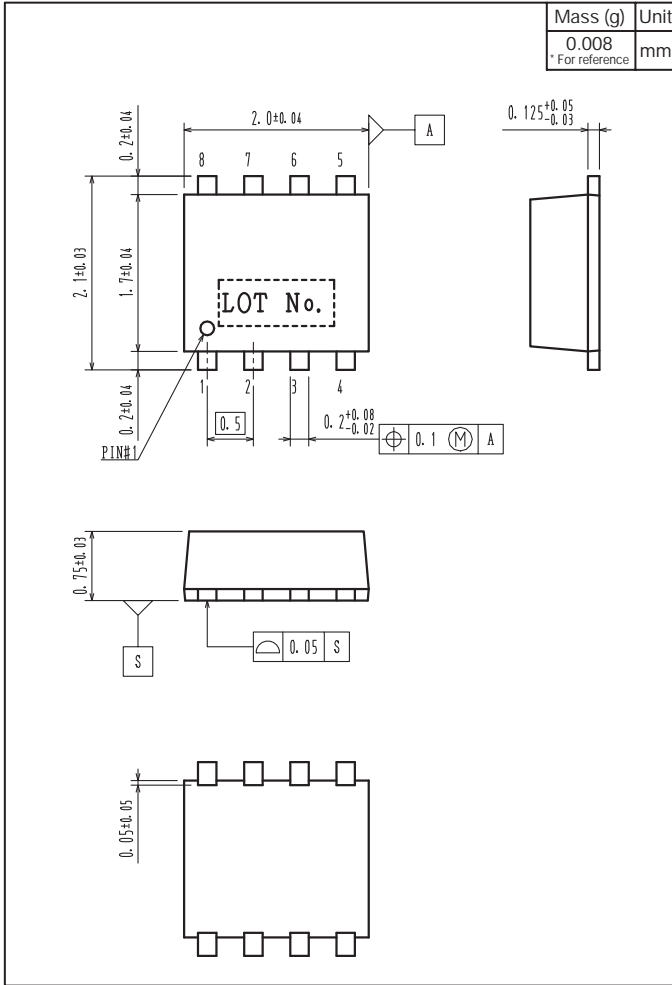
2-2. Device placement direction



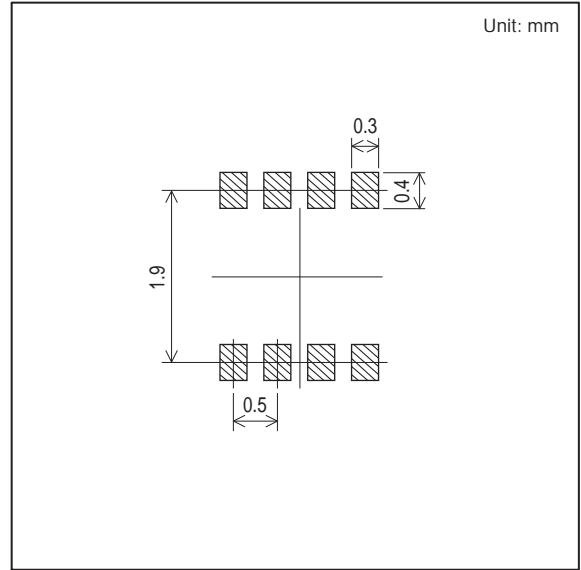
Those with pin | index on the feed hole side.....TL

EMH2411R

Outline Drawing EMH2411R-TL-H



Land Pattern Example



Note on usage : Since the EMH2411R is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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