

Features

- Composite type with a P-Channel Silicon MOSFET and a Schottky Barrier Diode contained in one package facilitating high-density mounting
- [MOSFET] • Low ON-resistance • 1.8V drive
- [SBD] • Small switching noise • Low forward voltage ($I_F=2.0A$, $V_F \text{ max}=0.46V$)
- Halogen free compliance

Specifications

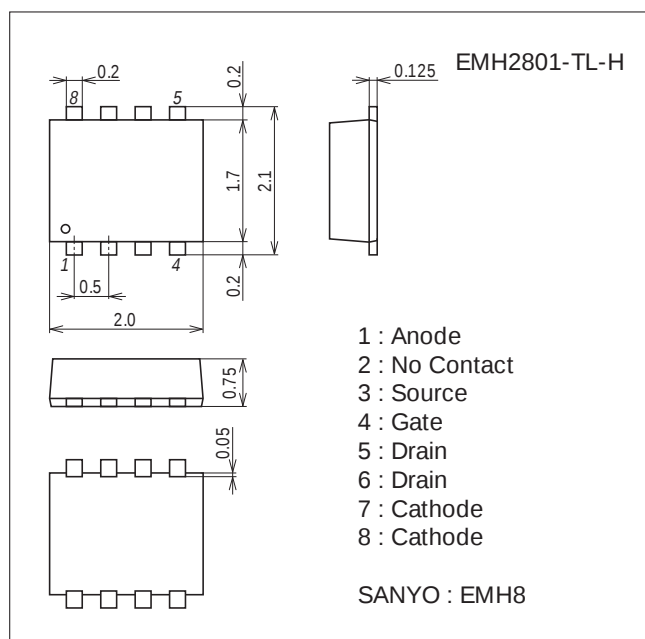
Parameter	Symbol	Conditions	Ratings	Unit
[MOSFET]				
Drain-to-Source Voltage	V _{DSS}		-20	V
Gate-to-Source Voltage	V _{GSS}		±10	V
Drain Current (DC)	I _D		-3	A
Drain Current (Pulse)	I _{DP}	PW≤10μs, duty cycle≤1%	-20	A
Allowable Power Dissipation	P _D	When mounted on ceramic substrate (900mm ² ×0.8mm) 1unit	1.0	W
Channel Temperature	T _{ch}		150	℃
Storage Temperature	T _{stg}		-55 to +125	℃

This product is designed to “ESD immunity < 200V*”, so please take care when handling.

* Machine Model

unit : mm (typ)

7045-007



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

Diagram illustrating a two-layer PCB layout. The top layer (TL) shows two square components, each with four vias (represented by small squares) connecting to the bottom layer (BL). The bottom layer (BL) shows the corresponding vias and the components themselves.

QA
Lot No.

EMH2801

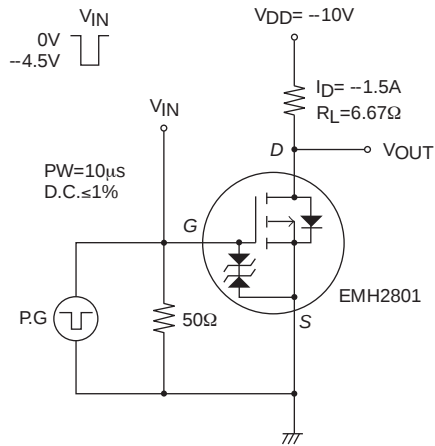
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Parameter	Symbol	Conditions	Ratings	Unit
[SBD]				
Repetitive Peak Reverse Voltage	V_{RRM}		15	V
Nonrepetitive Peak Reverse Surge Voltage	V_{RSM}		15	V
Average Output Current	I_O	Rectangular wave	2.0	A
Surge Forward Current	I_{FSM}	50Hz sine wave, 1 cycle	20	A
Junction Temperature	T_J		-55 to +125	°C
Storage Temperature	T_{stg}		-55 to +125	°C

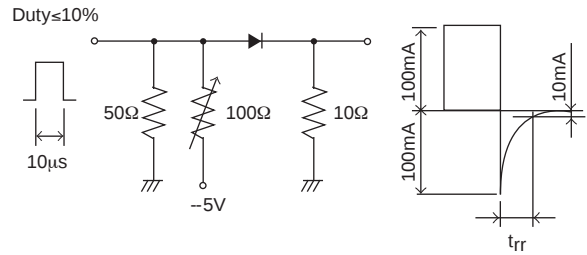
Electrical Characteristics at $T_a=25^{\circ}\text{C}$

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
[MOSFET]						
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		3.6		S
Static Drain-to-Source On-State Resistance	RDS(on)1	ID=-1.5A, VGS=-4.5V		65	85	mΩ
	RDS(on)2	ID=-1A, VGS=-2.5V		98	137	mΩ
	RDS(on)3	ID=-0.5A, VGS=-1.8V		155	235	mΩ
Input Capacitance	Ciss	VDS=-10V, f=1MHz		320		pF
Output Capacitance	Coss			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	VDS=-10V, VGS=-4.5V, ID=-3A		4.0		nC
Gate-to-Source Charge	Qgs			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
[SBD]						
Reverse Voltage	VR	IR=1mA	15			V
Forward Voltage	VF1	IF=1.0A		0.33	0.39	V
	VF2	IF=2.0A		0.39	0.46	V
Reverse Current	IR	VR=7.5V			300	μA
Interterminal Capacitance	C	VR=10V, f=1MHz		35		pF

Switching Time Test Circuit (MOSFET)

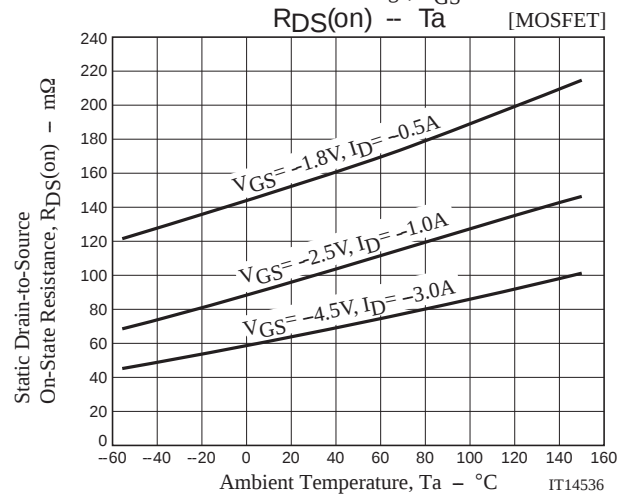
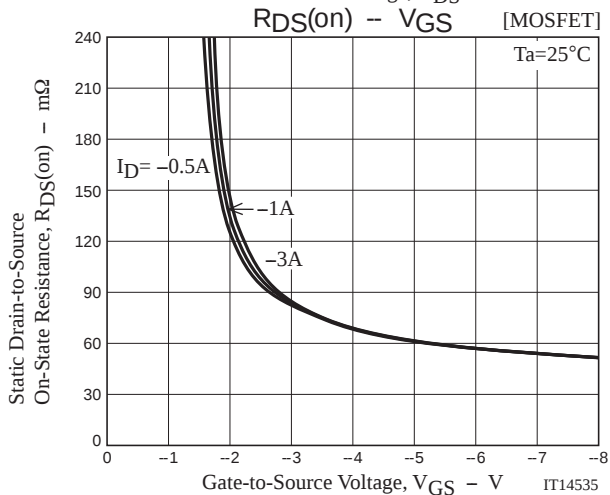
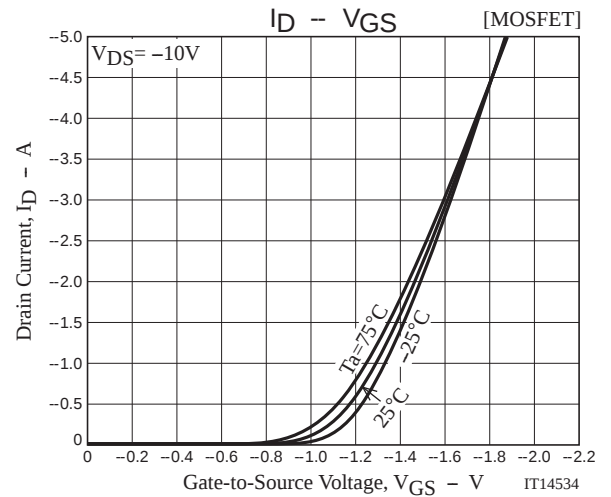
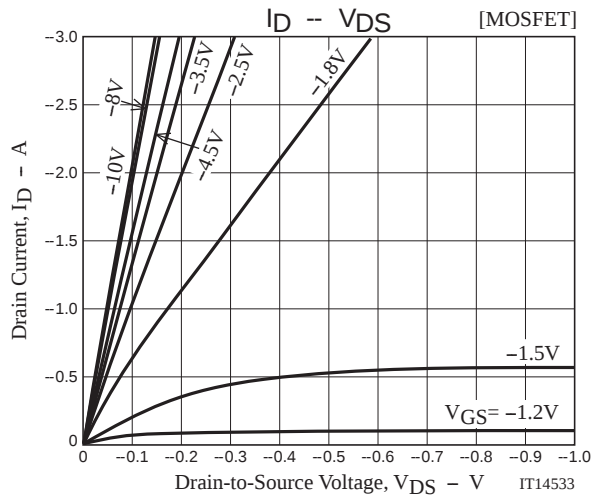


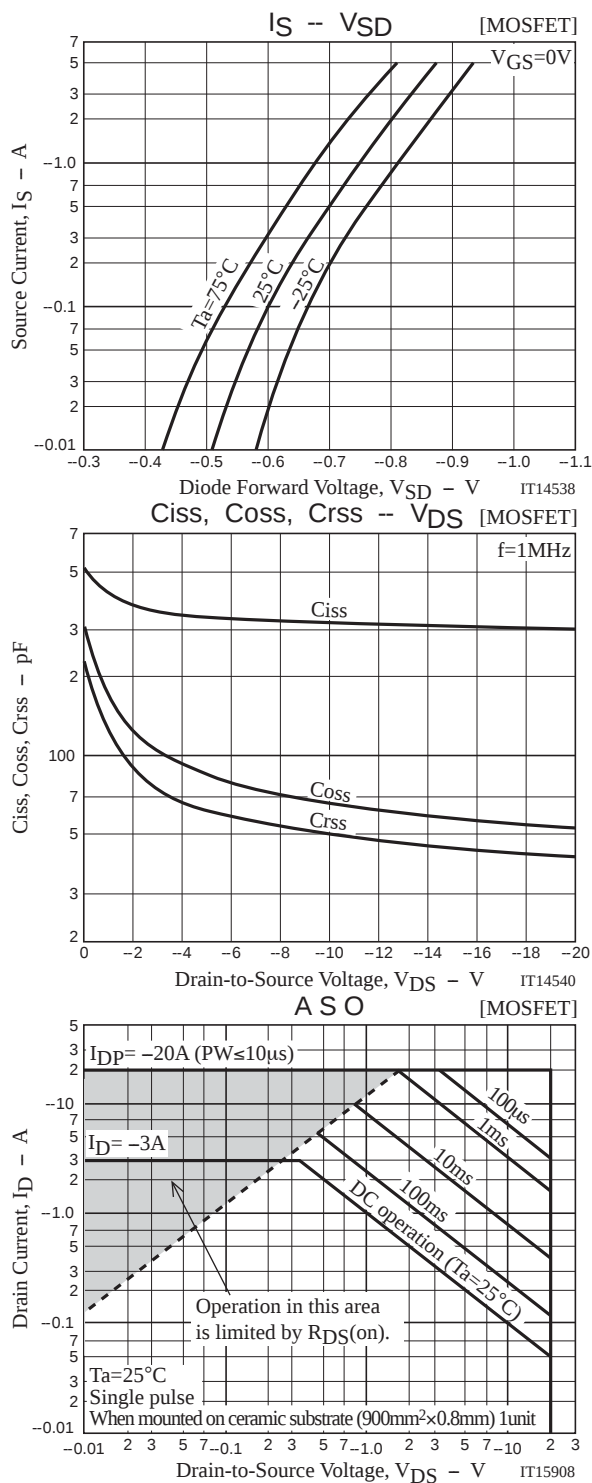
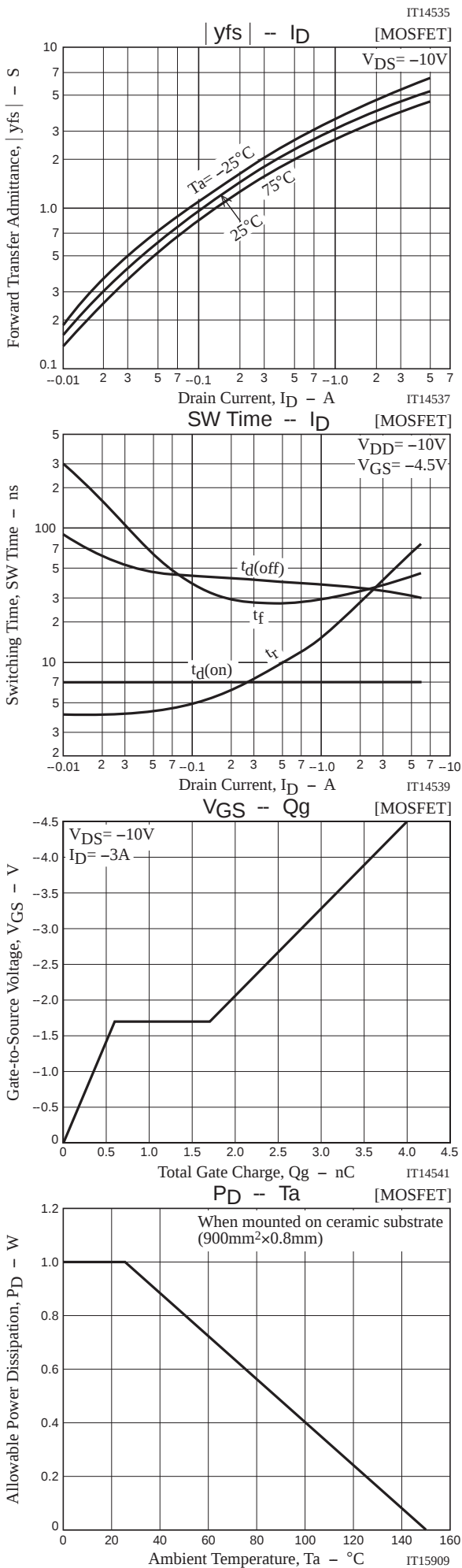
t_{rr} Test Circuit (SBD)

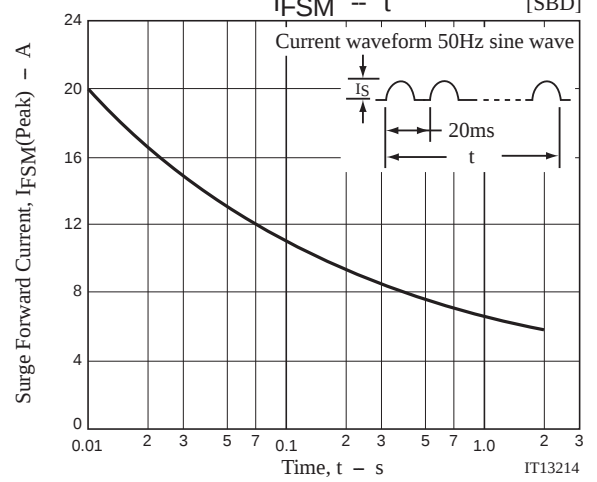
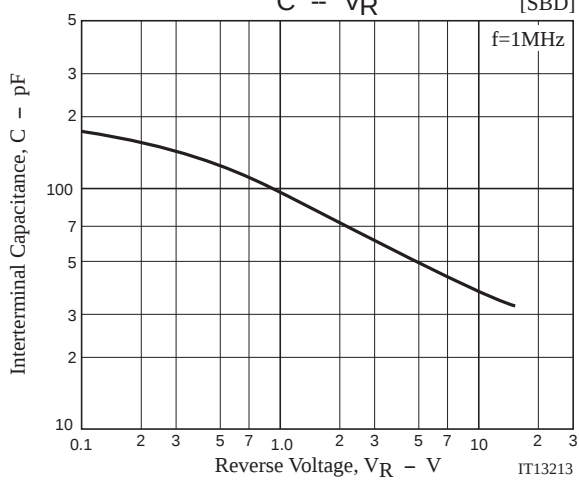
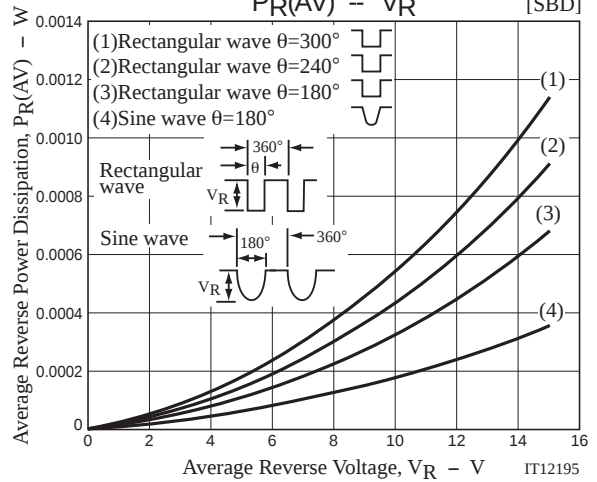
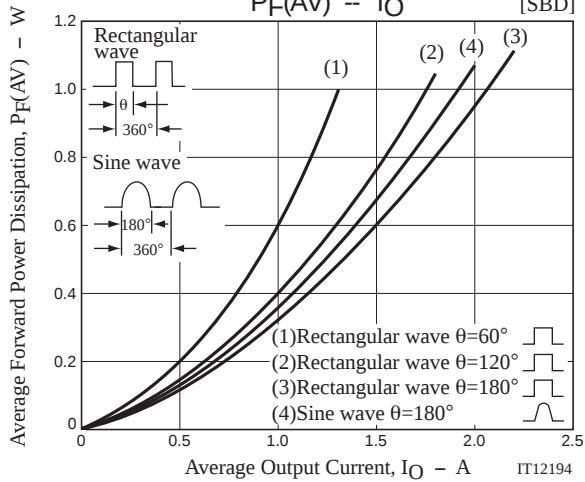
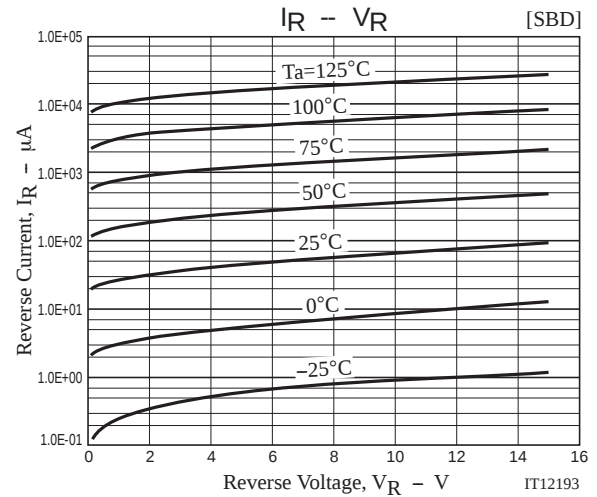
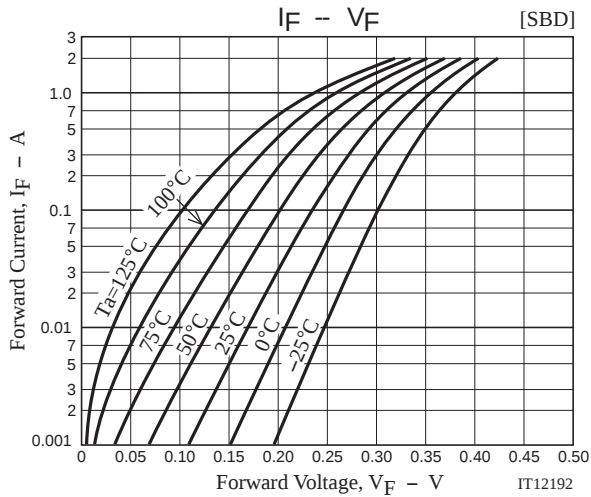


Ordering Information

Device	Package	Shipping	memo
EMH2801-TL-H	EMH8	3,000pcs./reel	Pb Free and Halogen Free







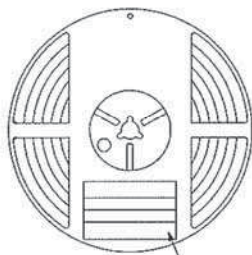
Embossed Taping Specification

EMH2801-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)

TYPE	0000000000
LOT	00
QTY	0,000 (LEAD FREE)
SPECIAL	ASSEMBLY:**** (DIFFUSION:****)

Outer box label

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

TYPE CODE	0000000000
TYPE	00000000
QTY	0,000 PCS (LEAD FREE)
LOT	00000000
PACKAGE	00000000
SPECIAL	ASSEMBLY:**** (DIFFUSION:****)

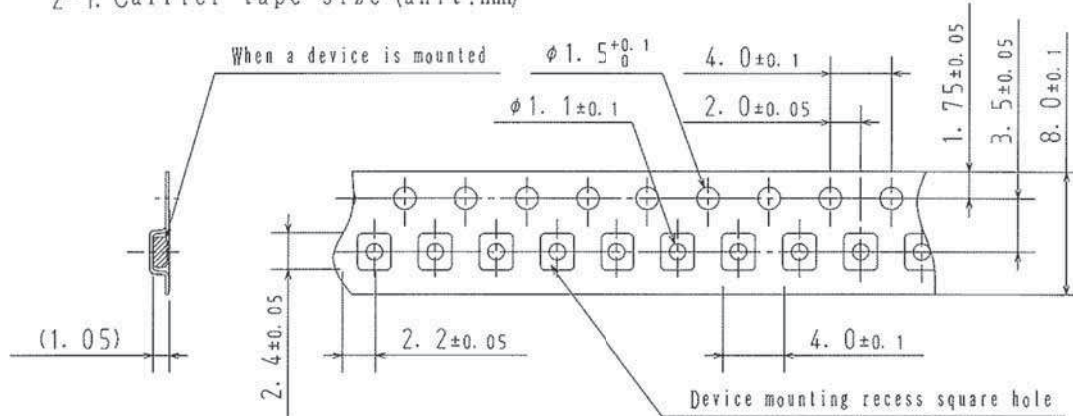
NOTE (1)

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

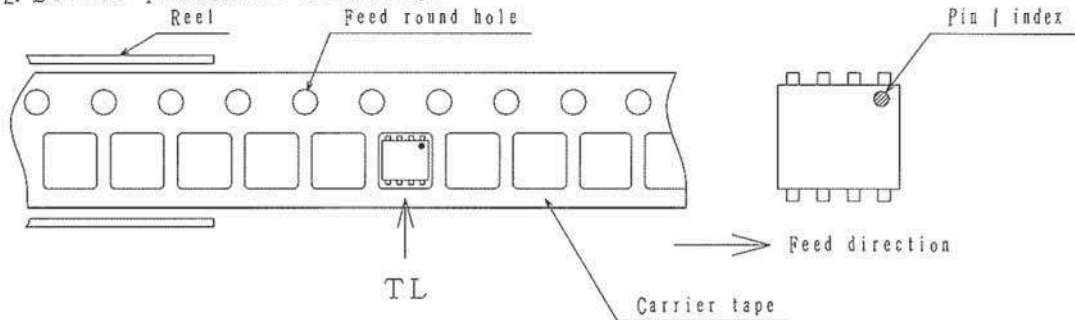
Label	JEITA Phase
LEAD FREE 3	JEITA Phase 3A
LEAD FREE 4	JEITA Phase 3

2. Taping configuration

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



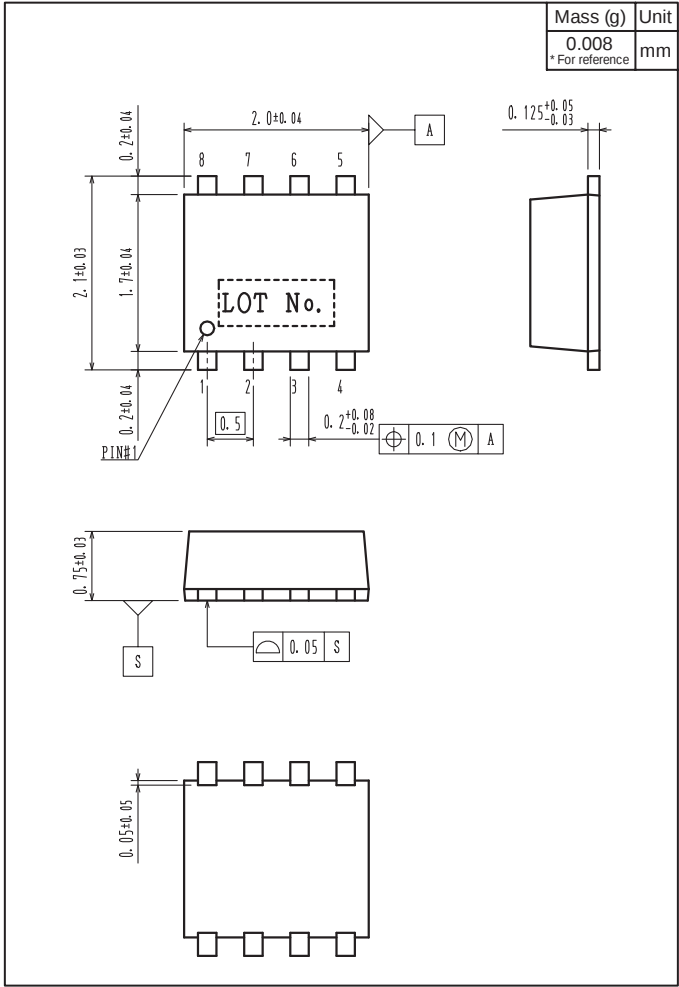
2-2. Device placement direction



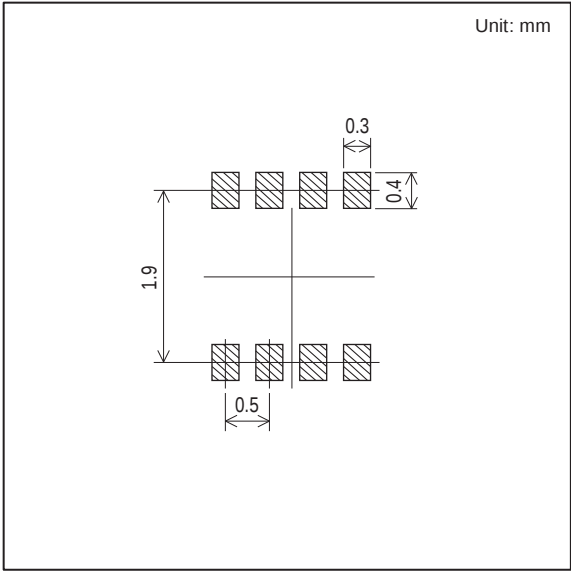
Those with pin 1 index on the feed hole side.....TL

EMH2801

Outline Drawing
EMH2801-TL-H



Land Pattern Example



Note on usage : Since the EMH2801 is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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