

P-Channel Silicon MOSFET

EMH1307 — General-Purpose Switching Device

Applications

Features

- ON-resistance $R_{DS(on)1}$: 20m Ω (typ.)
- 1.8V drive
- Protection diode in
- Input Capacitance C_{iss} =1100pF(typ.)
- Halogen free compliance

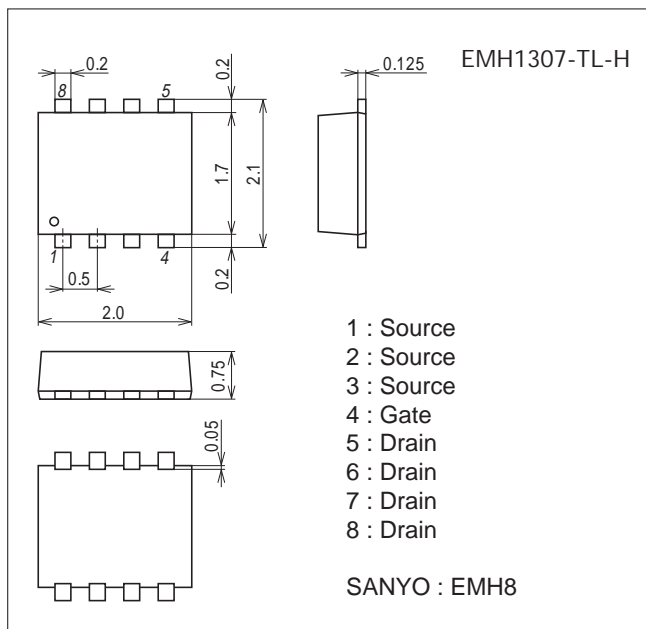
Specifications

Absolute Maximum Ratings at $T_a=25^\circ\text{C}$

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	V_{DSS}		-20	V
Gate-to-Source Voltage	V_{GSS}		± 10	V
Drain Current (DC)	I_D		-6.5	A
Drain Current (Pulse)	I_{DP}	$PW \leq 10\mu s$, duty cycle $\leq 1\%$	-26	A
Allowable Power Dissipation	P_D	When mounted on ceramic substrate (1200mm ² x0.8mm)	1.5	W
Channel Temperature	T_{ch}		150	$^\circ\text{C}$
Storage Temperature	T_{stg}		-55 to +150	$^\circ\text{C}$

Package Dimensions

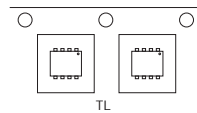
unit : mm (typ)
7045-001



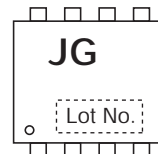
Product & Package Information

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

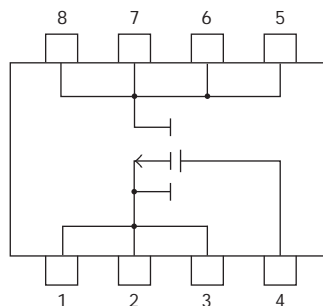
Taping Type : TL



Marking



Electrical Connection

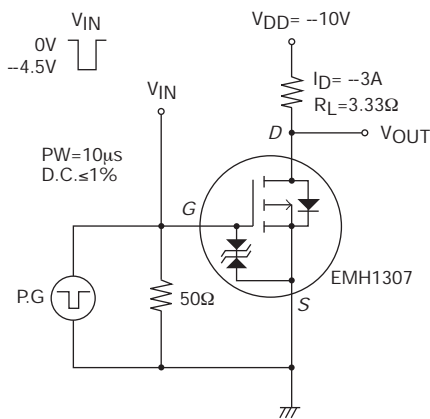


EMH1307

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

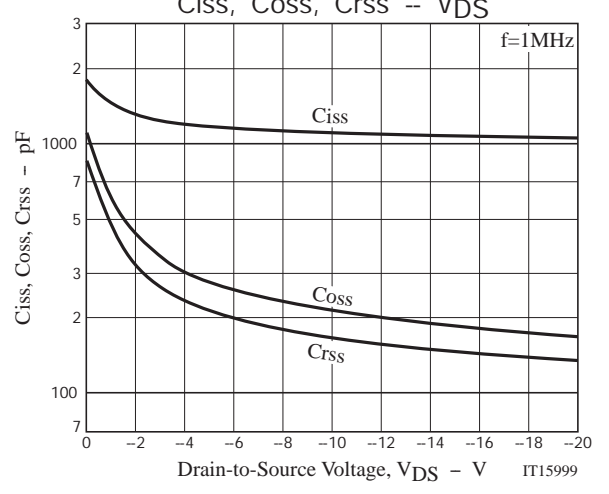
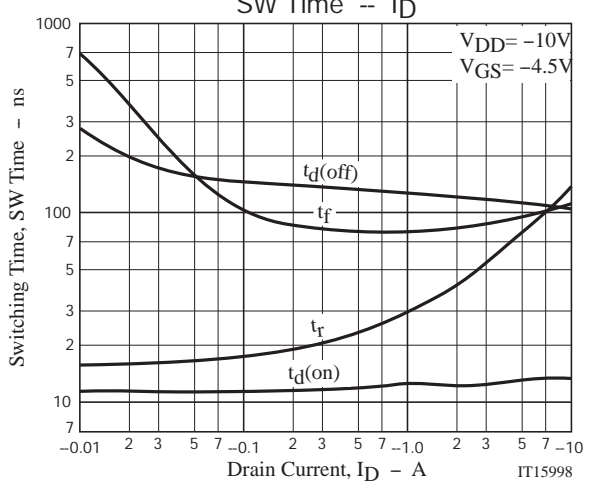
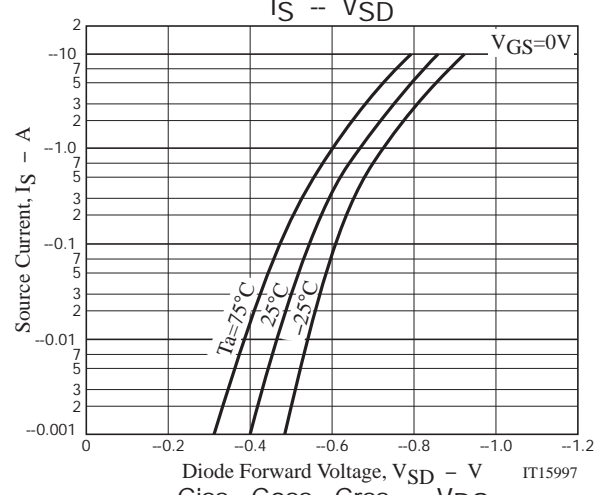
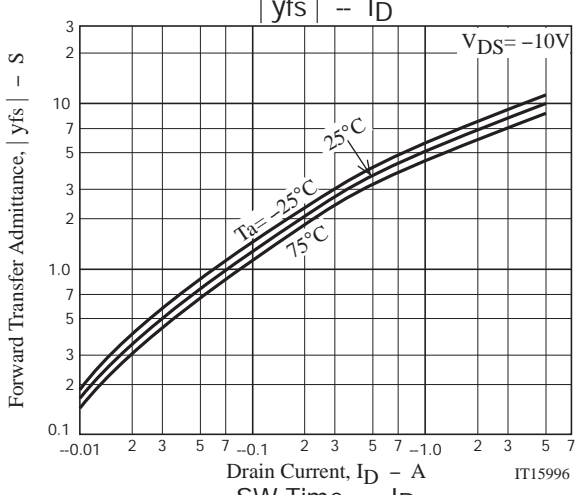
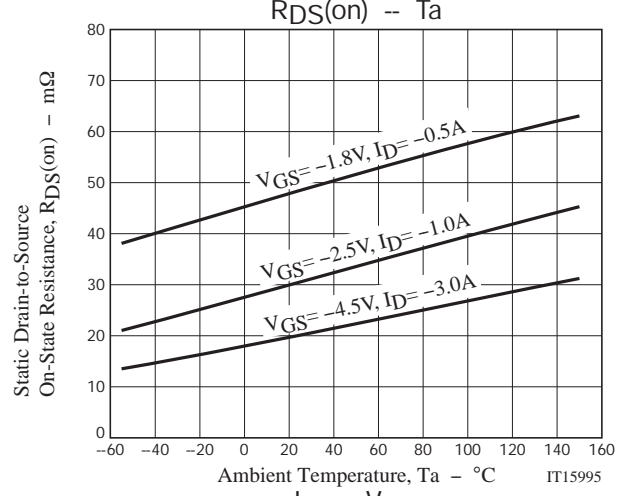
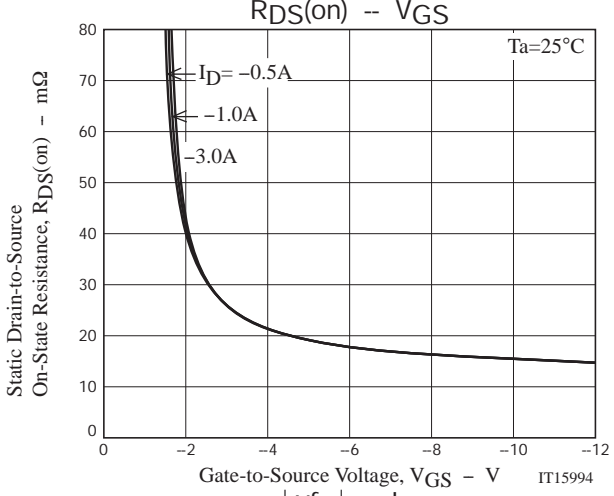
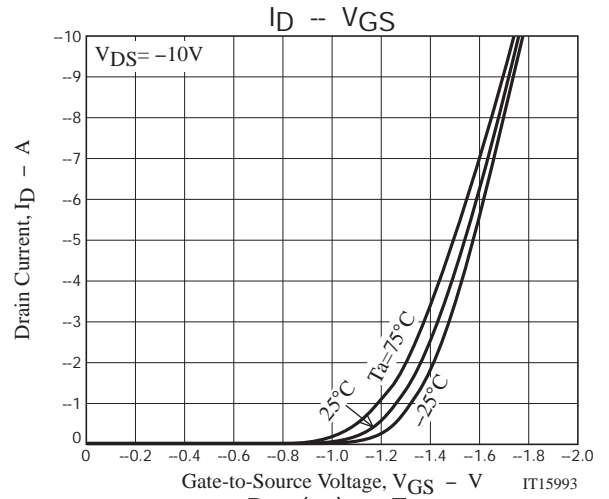
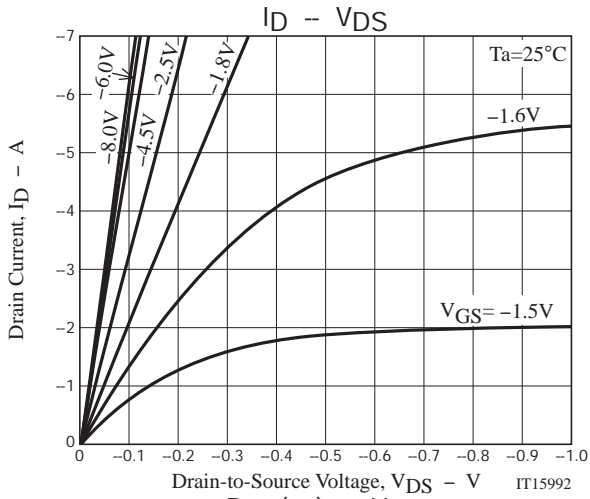
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Drain-to-Source Breakdown Voltage	$V_{(BR)DSS}$	$I_D=-1\text{mA}, V_{GS}=0\text{V}$	-20			V
Zero-Gate Voltage Drain Current	I_{DSS}	$V_{DS}=-20\text{V}, V_{GS}=0\text{V}$			-1	μA
Gate-to-Source Leakage Current	I_{GSS}	$V_{GS}=\pm 8\text{V}, V_{DS}=0\text{V}$			± 10	μA
Cutoff Voltage	$V_{GS(off)}$	$V_{DS}=-10\text{V}, I_D=-1\text{mA}$	-0.4		-1.3	V
Forward Transfer Admittance	$ y_{fs} $	$V_{DS}=-10\text{V}, I_D=-3\text{A}$		8.2		S
Static Drain-to-Source On-State Resistance	$R_{DS(on)1}$	$I_D=-3\text{A}, V_{GS}=-4.5\text{V}$		20	26	$\text{m}\Omega$
	$R_{DS(on)2}$	$I_D=-1.5\text{A}, V_{GS}=-2.5\text{V}$		31	44	$\text{m}\Omega$
	$R_{DS(on)3}$	$I_D=-0.5\text{A}, V_{GS}=-1.8\text{V}$		49	78	$\text{m}\Omega$
Input Capacitance	C_{iss}			1100		pF
Output Capacitance	C_{oss}	$V_{DS}=-10\text{V}, f=1\text{MHz}$		210		pF
Reverse Transfer Capacitance	C_{rss}			160		pF
Turn-ON Delay Time	$t_{d(on)}$	See specified Test Circuit.		12.8		ns
Rise Time	t_r			55		ns
Turn-OFF Delay Time	$t_{d(off)}$			120		ns
Fall Time	t_f			88		ns
Total Gate Charge	Q_g				13	
Gate-to-Source Charge	Q_{gs}	$V_{DS}=-10\text{V}, V_{GS}=-4.5\text{V}, I_D=-6.5\text{A}$		1.9		nC
Gate-to-Drain "Miller" Charge	Q_{gd}			3.7		nC
Diode Forward Voltage	V_{SD}	$I_S=-6.5\text{A}, V_{GS}=0\text{V}$		-0.8	-1.2	V

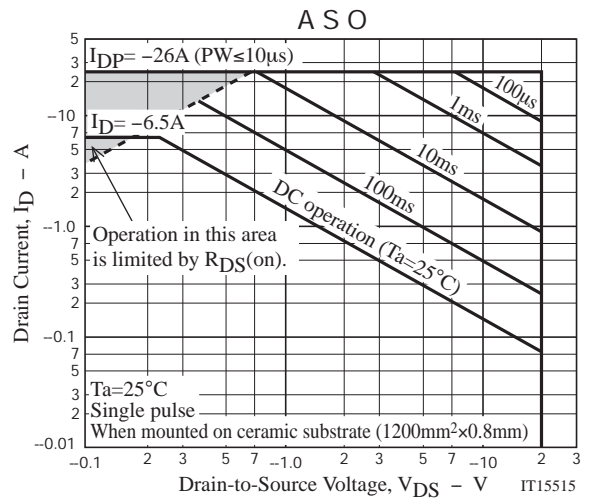
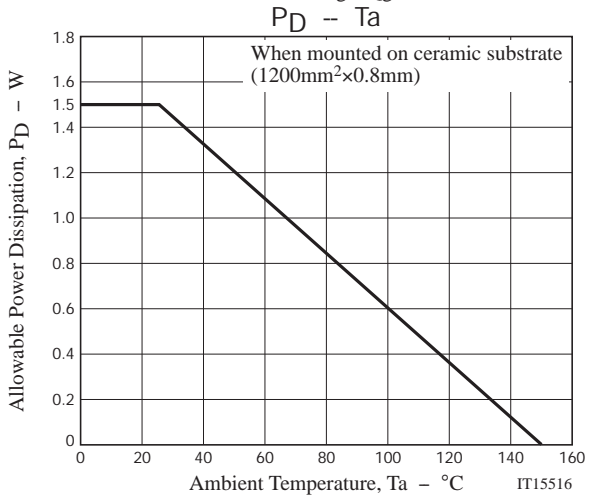
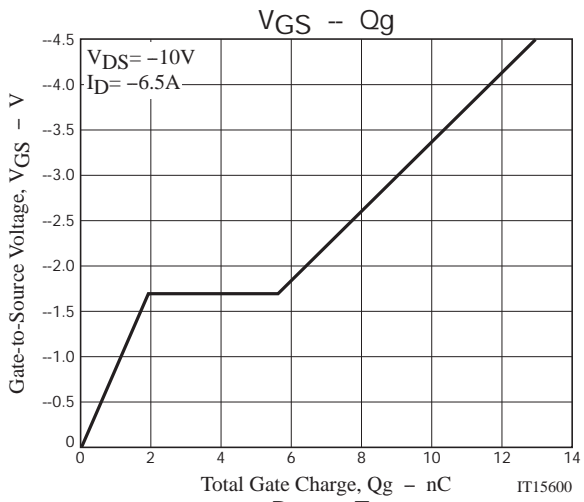
Switching Time Test Circuit



Ordering Information

Device	Package	Shipping	memo
EMH1307-TL-H	EMH8	3,000pcs./reel	Pb Free and Halogen Free





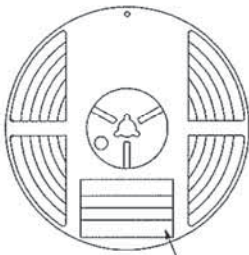
Embossed Taping Specification

EMH1307-TL-H

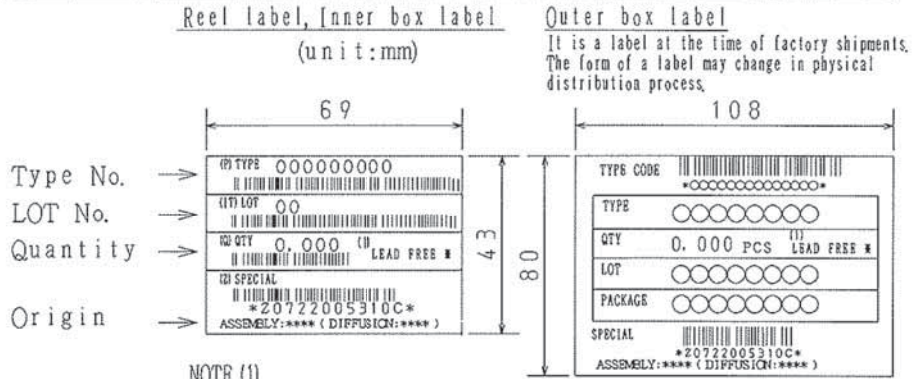
1. Packing Format

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

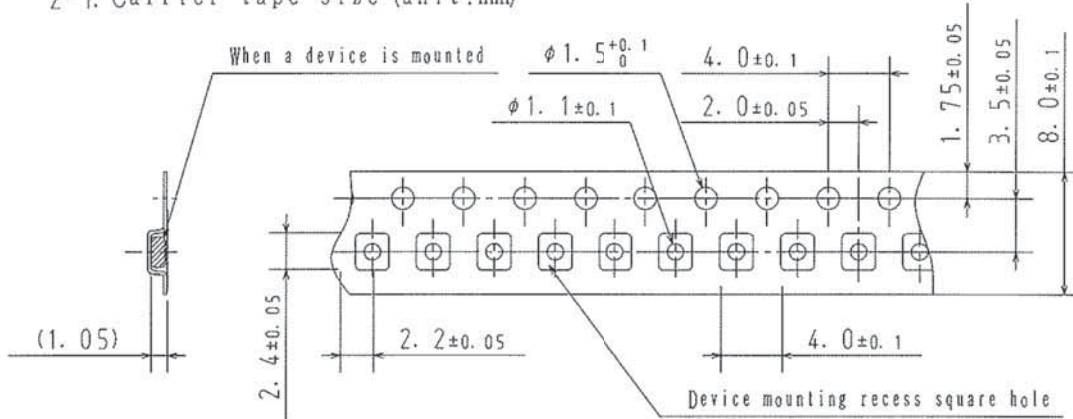


NOTE (1)
The LEAD FREE * description shows that the surface treatment of the terminal is lead free.

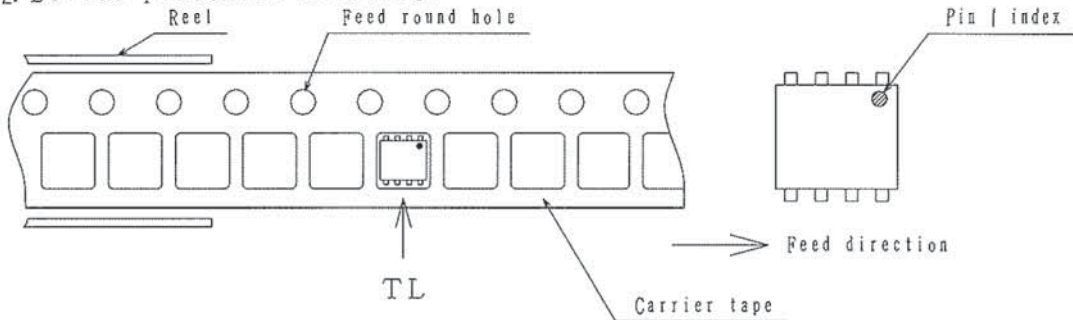
Label	JEITA Phase
LEAD FREE 3	JEITA Phase 3A
LEAD FREE 4	JEITA Phase 3

2. Taping configuration

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



2-2. Device placement direction



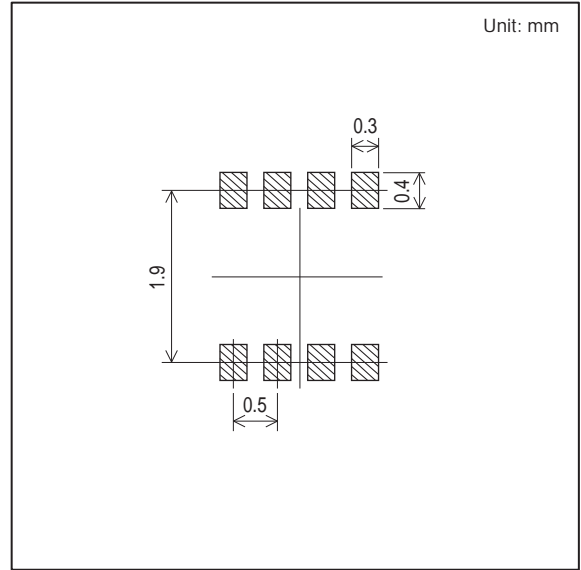
Those with pin | index on the feed hole side.....TL

EMH1307

Outline Drawing EMH1307-TL-H



Land Pattern Example



Note on usage : Since the EMH1307 is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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