



EMH2412

N-Channel Power MOSFET 24V, 6A, 27mΩ, Dual EMH8

ON Semiconductor®

<http://onsemi.com>

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 $T_a=25^\circ\text{C}$

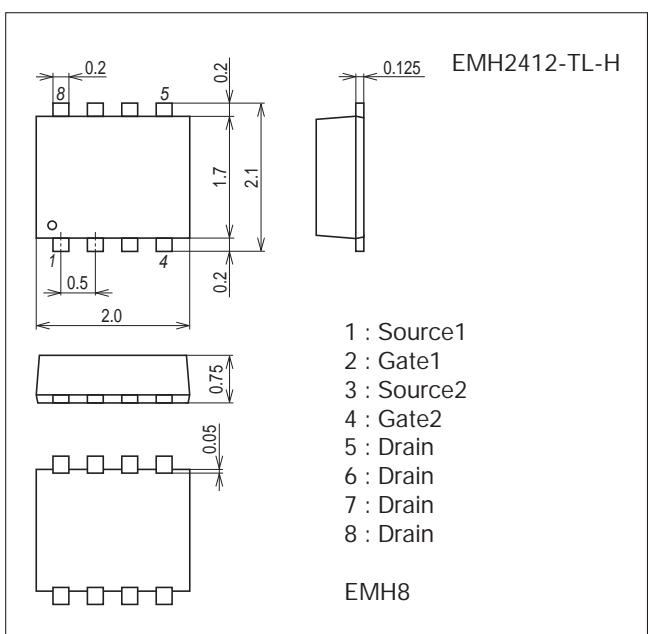
Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	V _{DSS}		24	V
Gate-to-Source Voltage	V _{GSS}		±12	V
Drain Current (DC)	I _D		6	A
Drain Current (Pulse)	I _{DP}	PW≤10μs, duty cycle≤1%	60	A
Allowable Power Dissipation	P _D	When mounted on ceramic substrate (900mm ² ×0.8mm) 1unit	1.3	W
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

Stresses exceeding Maximum Ratings may damage the device. Maximum Ratings are stress ratings only. Functional operation above the Recommended Operating Conditions is not implied. Extended exposure to stresses above the Recommended Operating Conditions may affect device reliability.

Package Dimensions

unit : mm (typ)

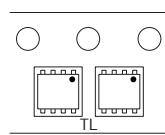
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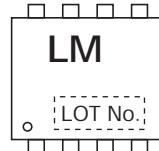
Product & Package Information

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

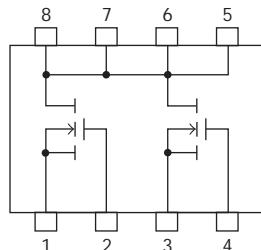
Taping Type : TL



Marking



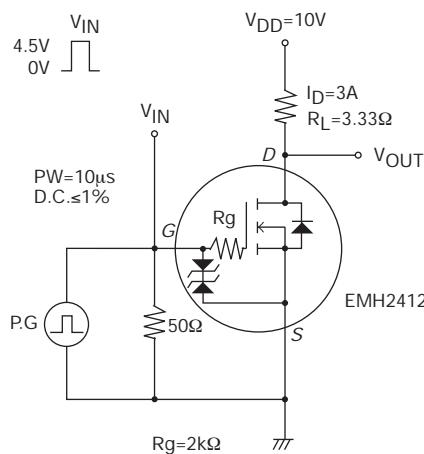
Electrical Connection



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

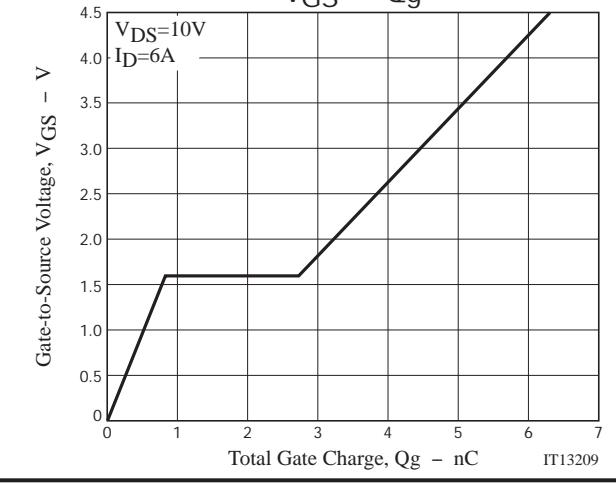
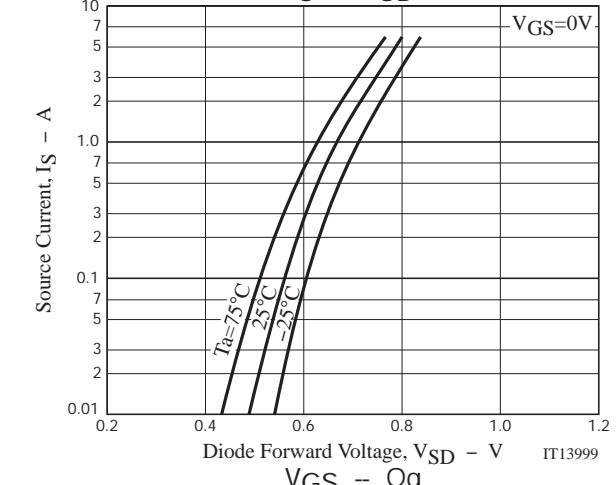
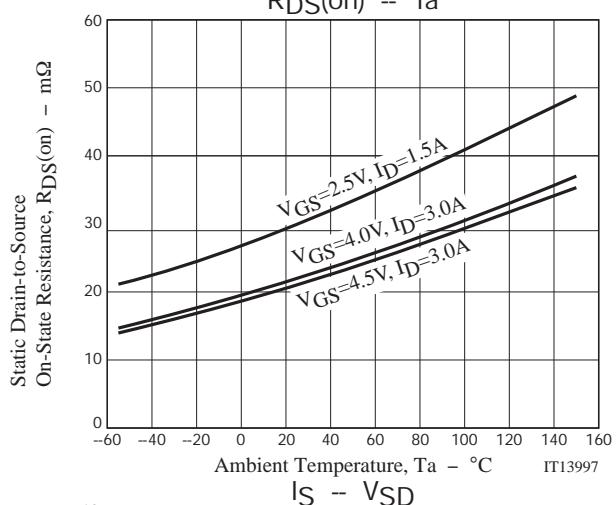
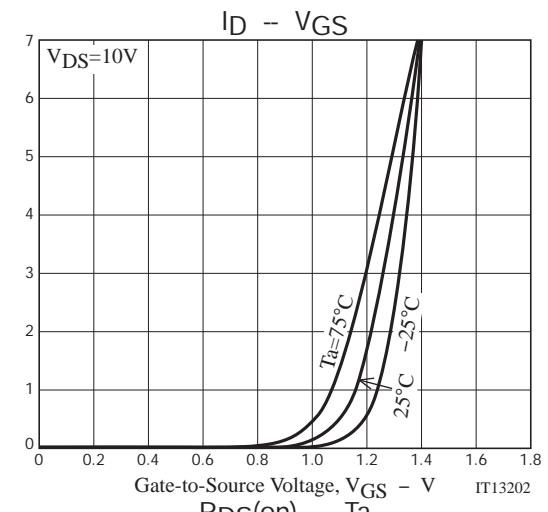
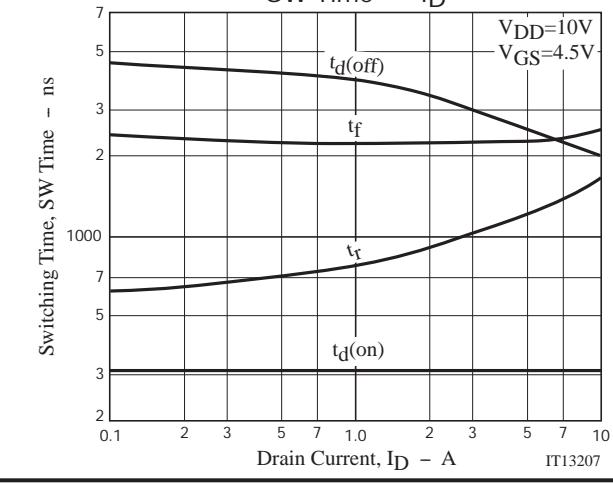
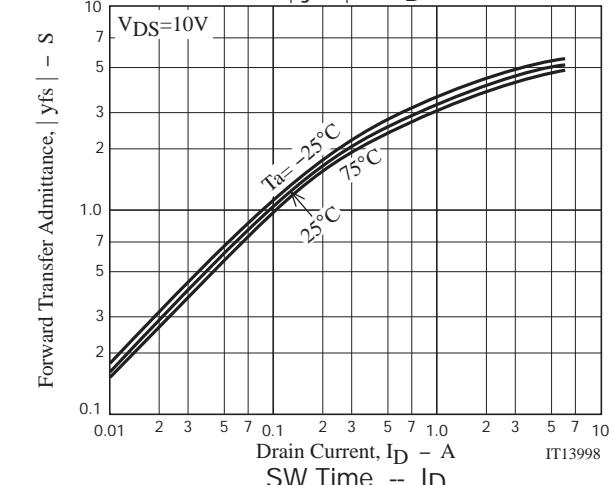
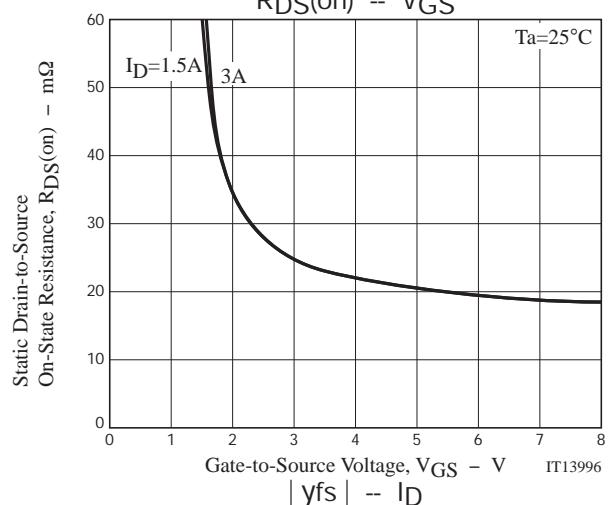
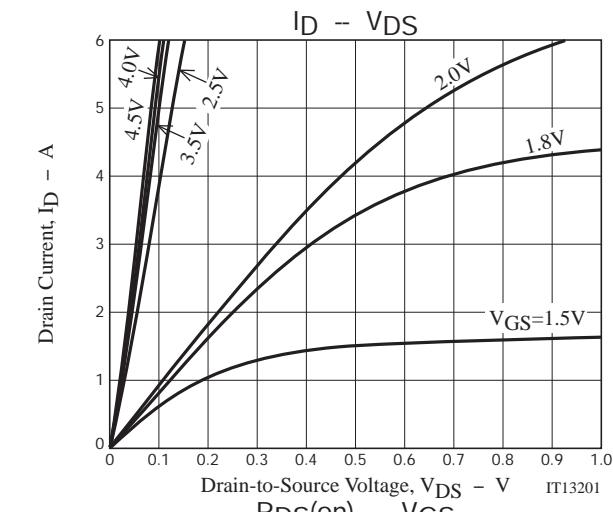
Parameter	Symbol	Conditions	Ratings			Unit	
			min	typ	max		
Drain-to-Source Breakdown Voltage	$V_{(\text{BR})\text{DSS}}$	$I_D=1\text{mA}, V_{GS}=0\text{V}$	24			V	
Zero-Gate Voltage Drain Current	I_{DSS}	$V_{DS}=20\text{V}, V_{GS}=0\text{V}$			-1	μA	
Gate-to-Source Leakage Current	I_{GSS}	$V_{GS}=\pm 8\text{V}, V_{DS}=0\text{V}$			± 10	μA	
Cutoff Voltage	$V_{GS(\text{off})}$	$V_{DS}=10\text{V}, I_D=1\text{mA}$	0.5		1.3	V	
Forward Transfer Admittance	$ y_{fs} $	$V_{DS}=10\text{V}, I_D=3\text{A}$	2.8	4.8		S	
Static Drain-to-Source On-State Resistance	$R_{DS(\text{on})1}$	$I_D=3\text{A}, V_{GS}=4.5\text{V}$	16	21	27	$\text{m}\Omega$	
	$R_{DS(\text{on})2}$	$I_D=3\text{A}, V_{GS}=4\text{V}$	17	22	29	$\text{m}\Omega$	
	$R_{DS(\text{on})3}$	$I_D=3\text{A}, V_{GS}=3.1\text{V}$	18	25	34	$\text{m}\Omega$	
	$R_{DS(\text{on})4}$	$I_D=1.5\text{A}, V_{GS}=2.5\text{V}$	21	30	42	$\text{m}\Omega$	
Turn-ON Delay Time	$t_{\text{d}(\text{on})}$	See specified Test Circuit.			310	ns	
Rise Time	t_r				1020	ns	
Turn-OFF Delay Time	$t_{\text{d}(\text{off})}$				3000	ns	
Fall Time	t_f				2250	ns	
Total Gate Charge	Q_g	$V_{DS}=10\text{V}, V_{GS}=4.5\text{V}, I_D=6\text{A}$			6.3	nC	
Gate-to-Source Charge	Q_{gs}				0.83	nC	
Gate-to-Drain "Miller" Charge	Q_{gd}				1.9	nC	
Diode Forward Voltage	V_{SD}	$I_S=6\text{A}, V_{GS}=0\text{V}$			0.8	1.2	V

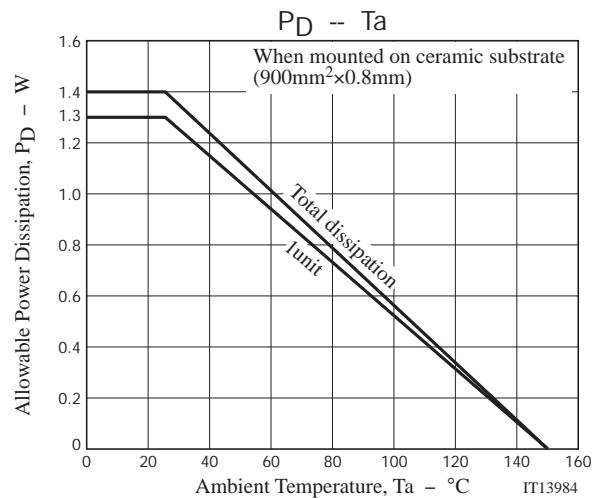
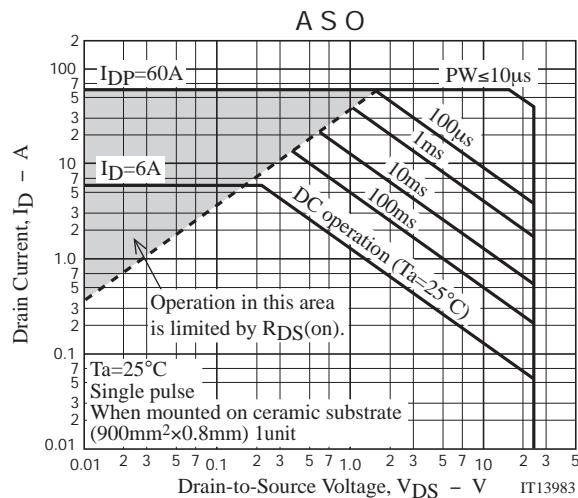
Switching Time Test Circuit



Ordering Information

Device	Package	Shipping	memo
EMH2412-TL-H	EMH8	3,000pcs./reel	Pb Free and Halogen Free



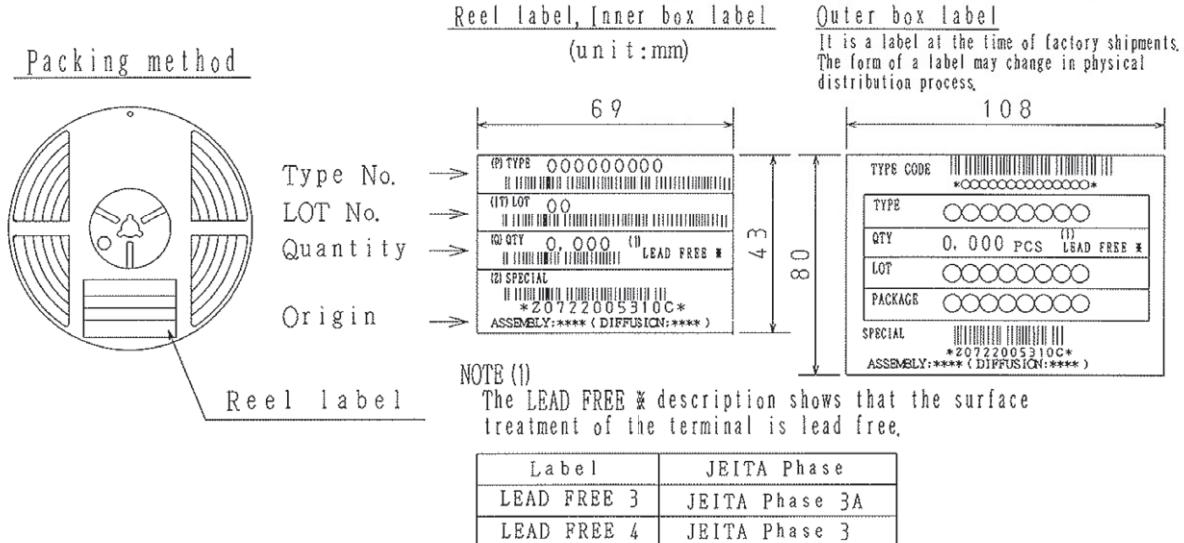


Embossed Taping Specification

EMH2412-TL-H

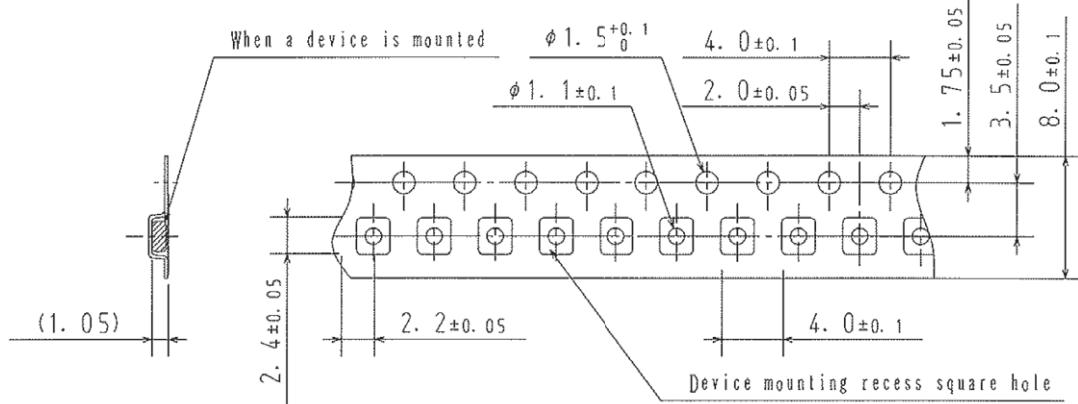
1. Packing Format

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

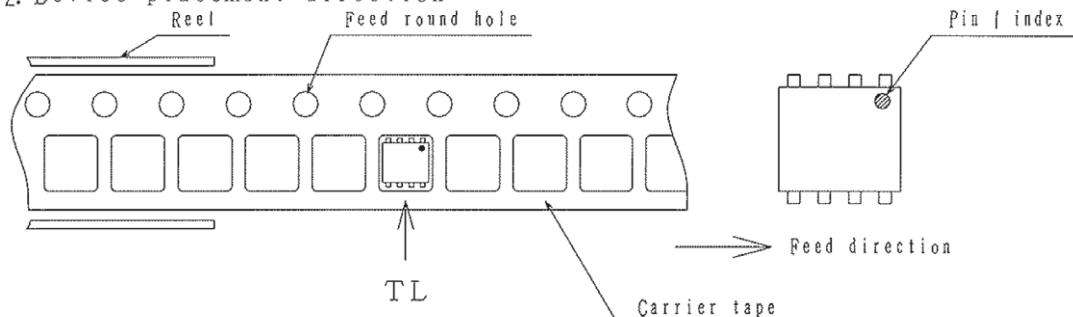


2. Taping configuration

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

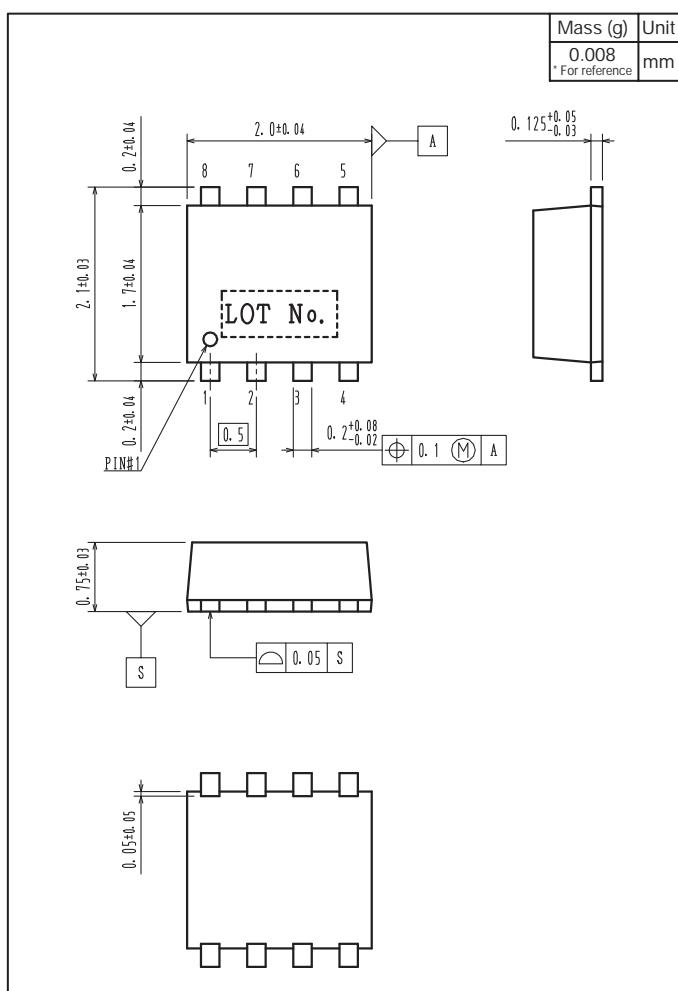


2-2. Device placement direction

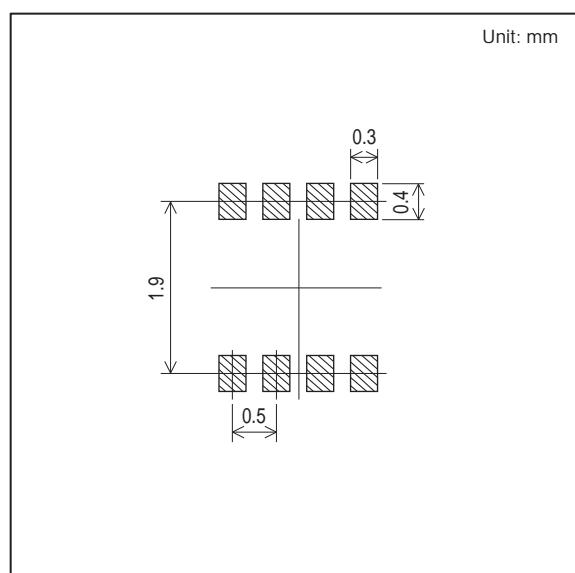


Outline Drawing

EMH2412-TL-H



Land Pattern Example



Note on usage : Since the EMH2412 is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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