



EMH2314

Power MOSFET -12V, 37mΩ, -5A, Dual P-Channel

ON Semiconductor®

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Features

- ON-resistance $R_{DS(on)} = 28\text{m}\Omega$ (typ.)
- 1.8V drive
- Halogen free compliance
- Protection Diode in

Specifications

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

Parameter	Symbol	Conditions	Value	Unit
Drain-to-Source Voltage	V_{DSS}		-12	V
Gate-to-Source Voltage	V_{GSS}		± 8	V
Drain Current (DC)	I_D		-5	A
Drain Current (Pulse)	I_{DP}	$PW \leq 10\mu\text{s}$, duty cycle $\leq 1\%$	-20	A
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
Junction Temperature	T_j		150	°C
Storage Temperature	T_{stg}		-55 to +150	°C

Stresses exceeding those listed in the Maximum Ratings table may damage the device. If any of these limits are exceeded, device functionality should not be assumed, damage may occur and reliability may be affected.

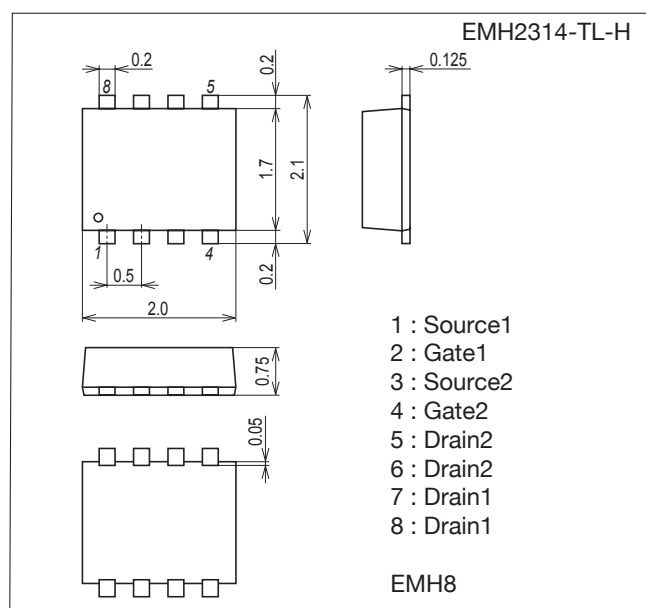
Thermal Resistance Ratings

Parameter	Symbol	Value	Unit
Junction to Ambient When mounted on ceramic substrate (900mm ² × 0.8mm) 1unit	$R_{\theta JA}$	125	°C/W

Package Dimensions

unit : mm (typ)

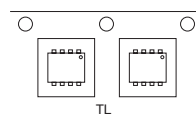
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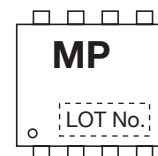
Product & Package Information

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

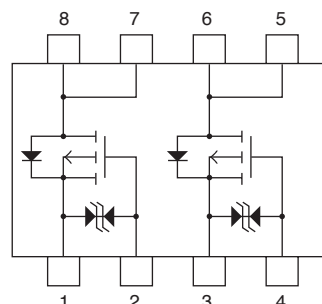
Taping Type : TL



Marking



Electrical Connection



ORDERING INFORMATION

See detailed ordering and shipping information on page 2 of this data sheet.

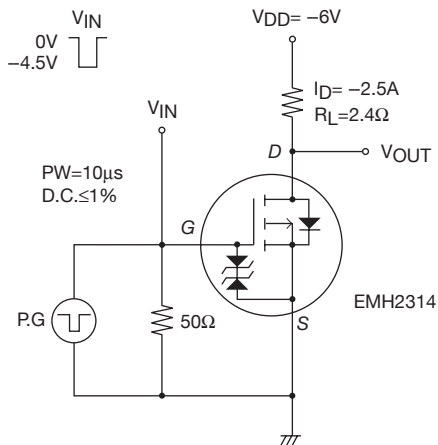
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Electrical Characteristics at Ta=25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Drain-to-Source Breakdown Voltage	$V_{(BR)DSS}$	$I_D = -1mA, V_{GS} = 0V$	-12			V
Zero-Gate Voltage Drain Current	I_{DSS}	$V_{DS} = -12V, V_{GS} = 0V$			-10	μA
Gate-to-Source Leakage Current	I_{GSS}	$V_{GS} = \pm 8V, V_{DS} = 0V$			± 10	μA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = -6V, I_D = -1mA$	-0.4		-1.3	V
Forward Transconductance	g_{FS}	$V_{DS} = -6V, I_D = -2.5A$		11		S
Static Drain-to-Source On-State Resistance	$R_{DS(on)1}$	$I_D = -2.5A, V_{GS} = -4.5V$		28	37	$m\Omega$
	$R_{DS(on)2}$	$I_D = -1.5A, V_{GS} = -2.5V$		53	75	$m\Omega$
	$R_{DS(on)3}$	$I_D = -0.5A, V_{GS} = -1.8V$		133	200	$m\Omega$
Input Capacitance	C_{iss}			1300		pF
Output Capacitance	C_{oss}	$V_{DS} = -6V, f = 1MHz$		158		pF
Reverse Transfer Capacitance	C_{rss}			143		pF
Turn-ON Delay Time	$t_{d(on)}$	See specified Test Circuit.		16		ns
Rise Time	t_r			77		ns
Turn-OFF Delay Time	$t_{d(off)}$			79		ns
Fall Time	t_f			58		ns
Total Gate Charge	Q_g				12	
Gate-to-Source Charge	Q_{gs}	$V_{DS} = -6V, V_{GS} = -4.5V, I_D = -5A$		3		nC
Gate-to-Drain "Miller" Charge	Q_{gd}			2		nC
Forward Diode Voltage	V_{SD}	$I_S = -5A, V_{GS} = 0V$		-0.9	-1.2	V

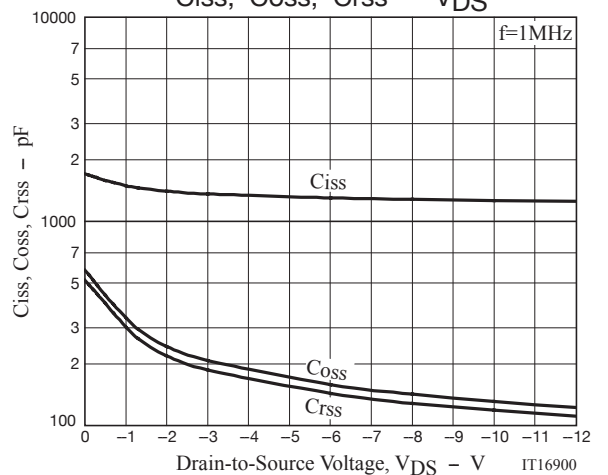
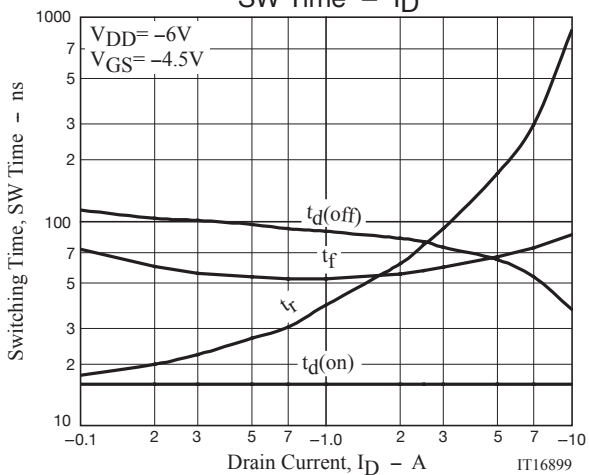
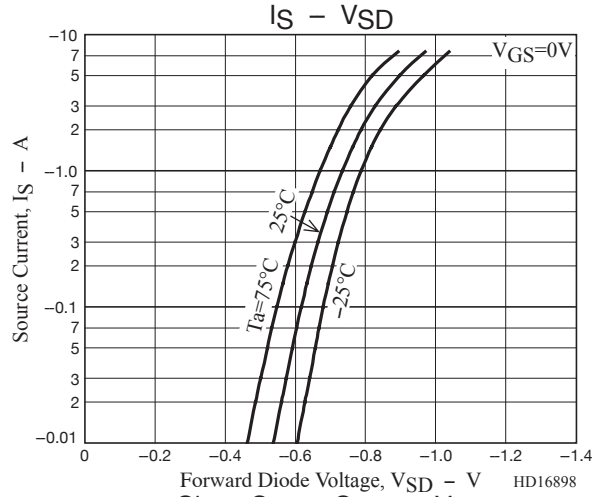
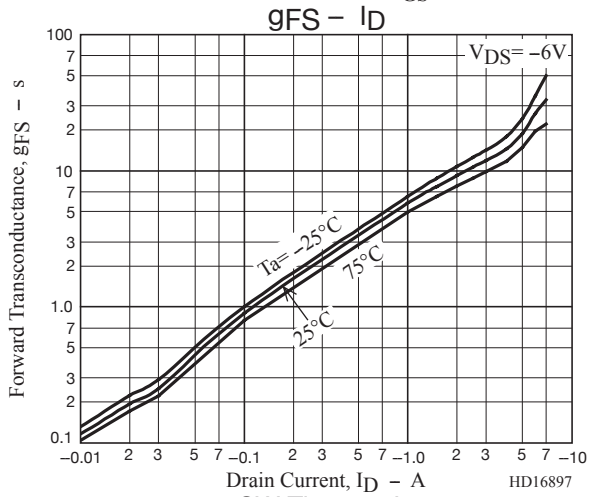
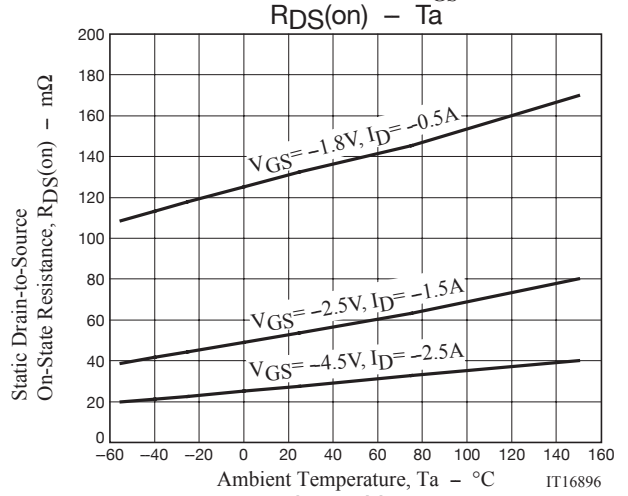
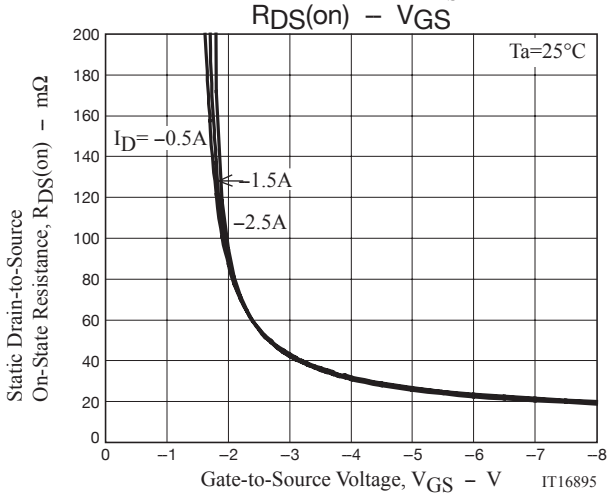
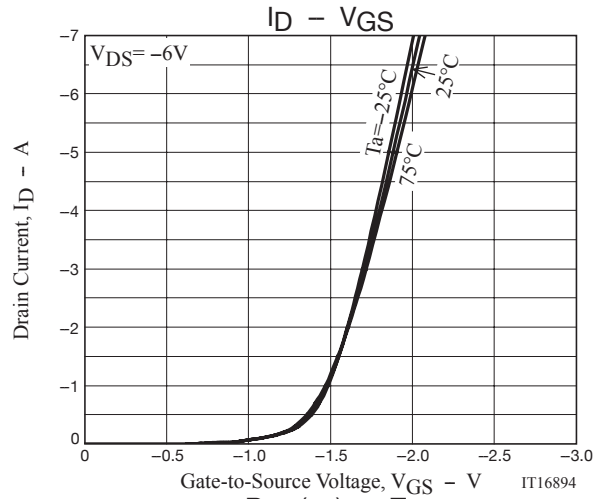
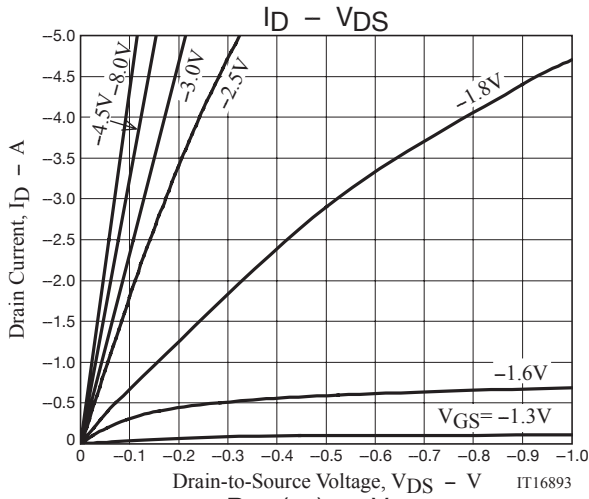
Product parametric performance is indicated in the Electrical Characteristics for the listed test conditions, unless otherwise noted. Product performance may not be indicated by the Electrical Characteristics if operated under different conditions.

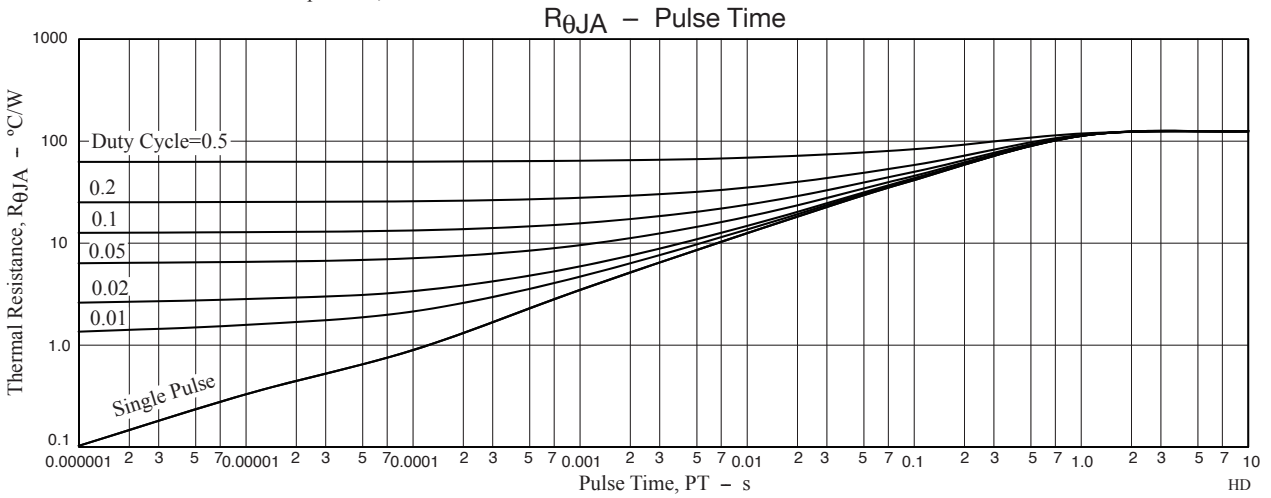
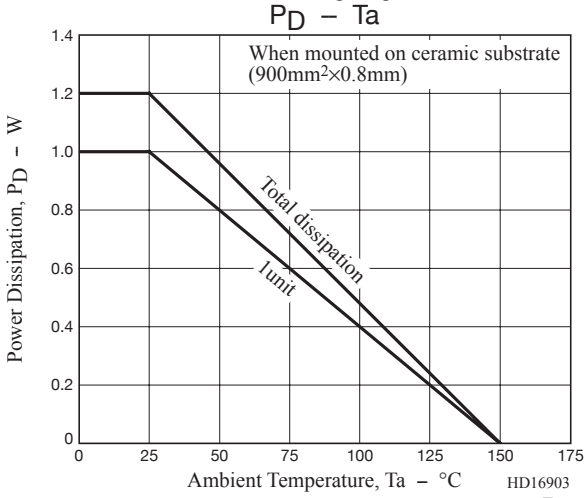
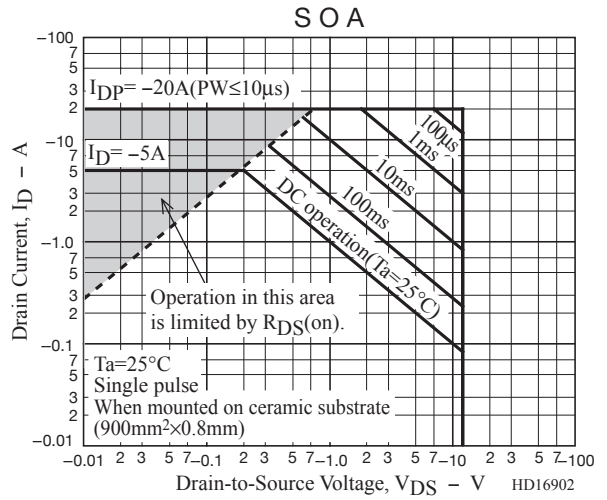
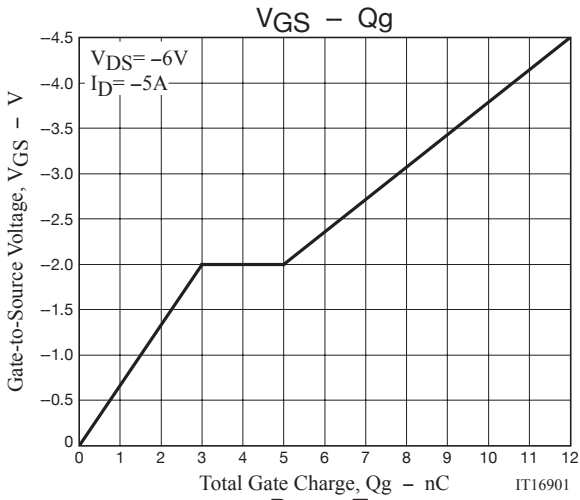
Switching Time Test Circuit



Ordering Information

Device	Package	Shipping	memo
EMH2314-TL-H	EMH8	3,000pcs./reel	Pb-Free and Halogen Free

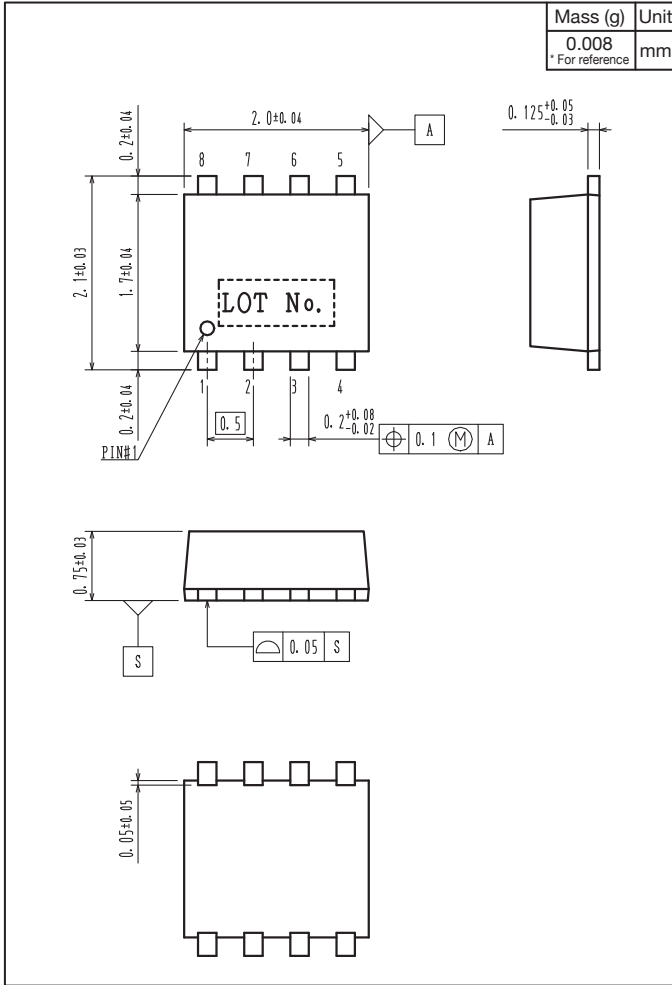




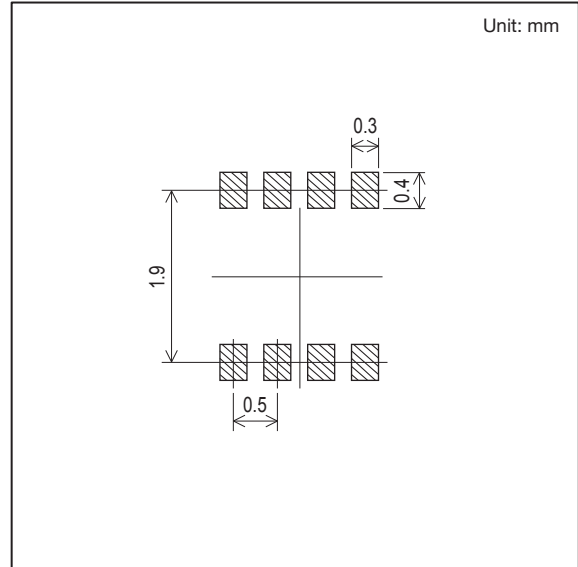
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Outline Drawing

EMH2314-TL-H



Land Pattern Example



Note on usage : Since the EMH2314 is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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