



N-Channel Silicon MOSFET

EMH2408 — General-Purpose Switching Device Applications

Features

- The EMH2402 incorporates an N-channel MOSFET that feature low ON-resistance and ultrahigh-speed switching, thereby enabling high-density mounting.
- 1.8V drive.
- Halogen free compliance.

Specifications

Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	V _{DSS}		20	V
Gate-to-Source Voltage	V _{GSS}		±12	V
Drain Current (DC)	I _D		4	A
Drain Current (Pulse)	I _{DP}	PW≤10μs, duty cycle≤1%	16	A
Allowable 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
Channel Temperature	T _{ch}		150	°C
Storage Temperature	T _{stg}		-55 to +150	°C

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	20			V
Zero-Gate Voltage Drain Current	I _{DSS}	V _{DS} =20V, 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	0.4		1.3	V
Forward Transfer Admittance	y _{fs}	V _{DS} =10V, I _D =2A	2.0	3.4		S
Static Drain-to-Source On-State Resistance	R _{DS(on)1}	I _D =4A, V _{GS} =4.5V		34	45	mΩ
	R _{DS(on)2}	I _D =1A, V _{GS} =2.5V		49	67	mΩ
	R _{DS(on)3}	I _D =0.5A, V _{GS} =1.8V		74	115	mΩ

Marking : LH

Continued on next page.

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EMH2408

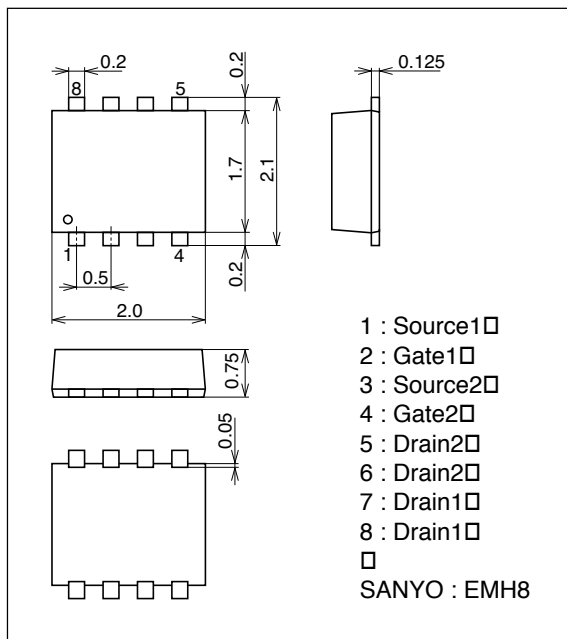
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Input Capacitance	Ciss	V _{DS} =10V, f=1MHz		345		pF
Output Capacitance	Coss	V _{DS} =10V, f=1MHz		67		pF
Reverse Transfer Capacitance	Crss	V _{DS} =10V, f=1MHz		52		pF
Turn-ON Delay Time	t _{d(on)}	See specified Test Circuit.		9.2		ns
Rise Time	t _r	See specified Test Circuit.		60		ns
Turn-OFF Delay Time	t _{d(off)}	See specified Test Circuit.		30		ns
Fall Time	t _f	See specified Test Circuit.		38		ns
Total Gate Charge	Q _g	V _{DS} =10V, V _{GS} =4.5V, I _D =4A		4.7		nC
Gate-to-Source Charge	Q _{gs}	V _{DS} =10V, V _{GS} =4.5V, I _D =4A		0.65		nC
Gate-to-Drain "Miller" Charge	Q _{gd}	V _{DS} =10V, V _{GS} =4.5V, I _D =4A		1.6		nC
Diode Forward Voltage	V _{SD}	I _S =4A, V _{GS} =0V		0.8	1.2	V

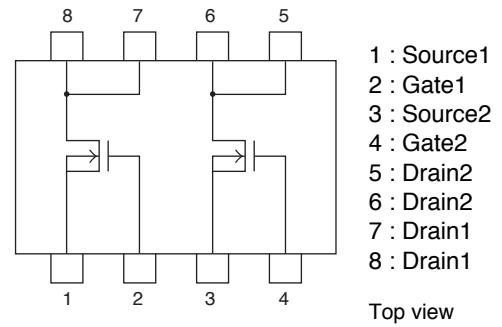
Package Dimensions

unit : mm (typ)

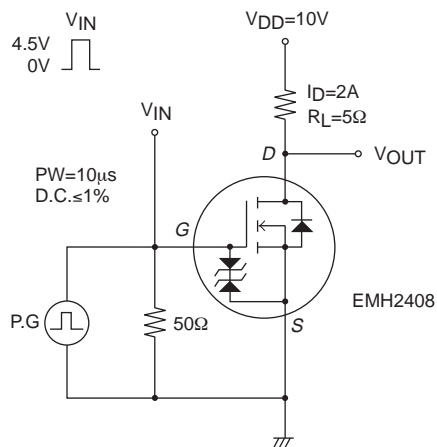
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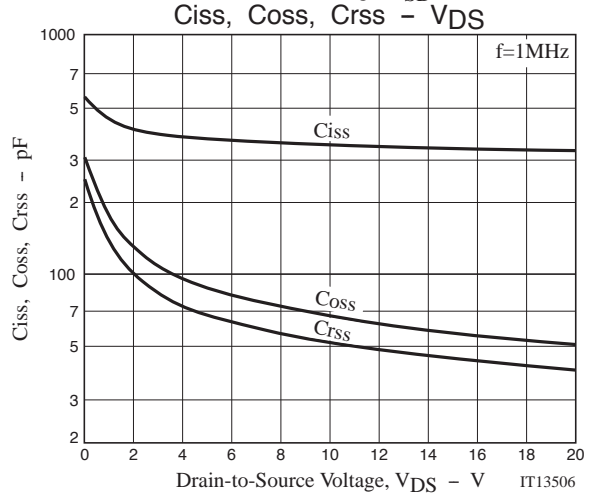
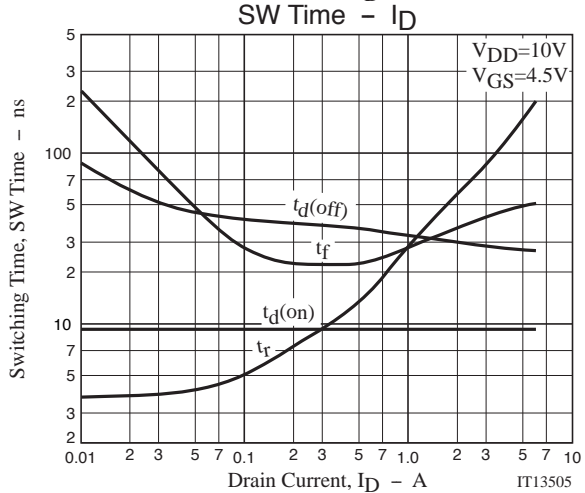
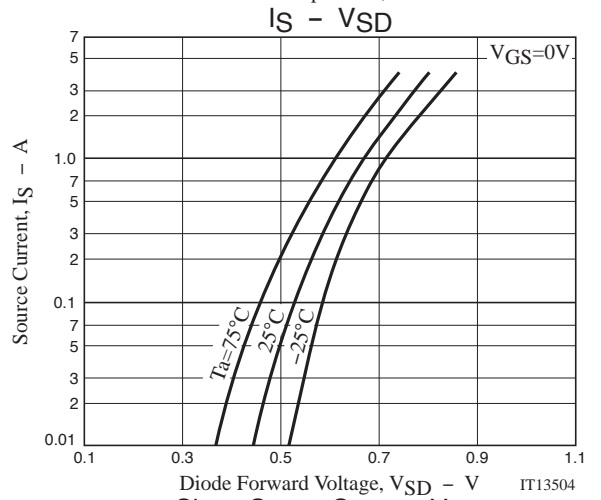
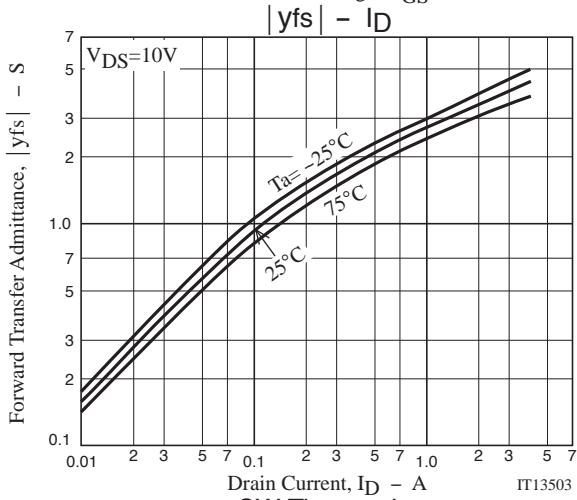
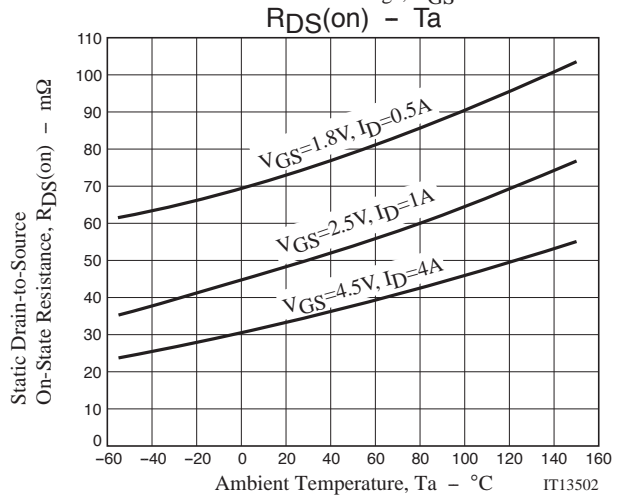
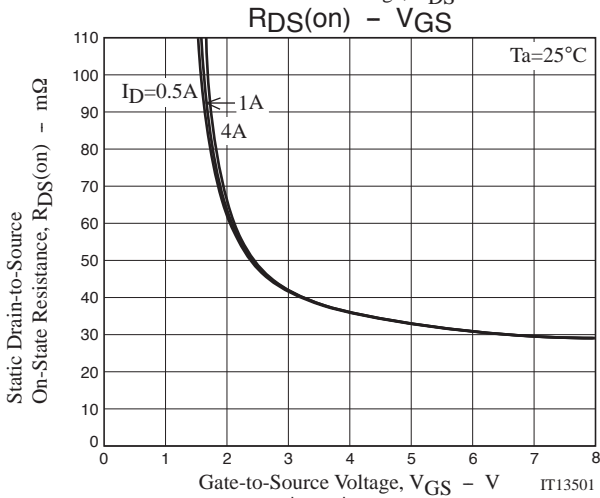
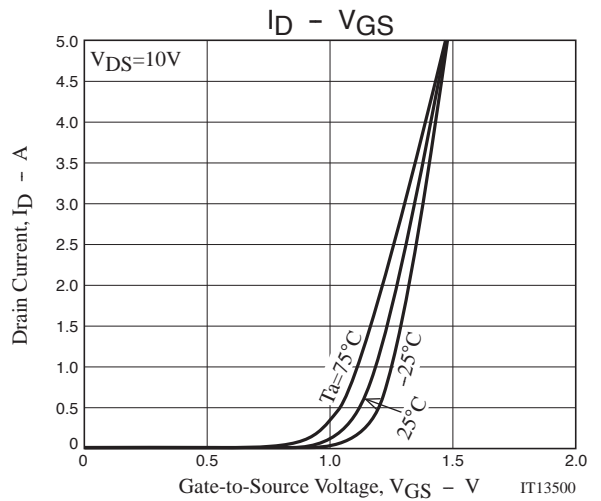
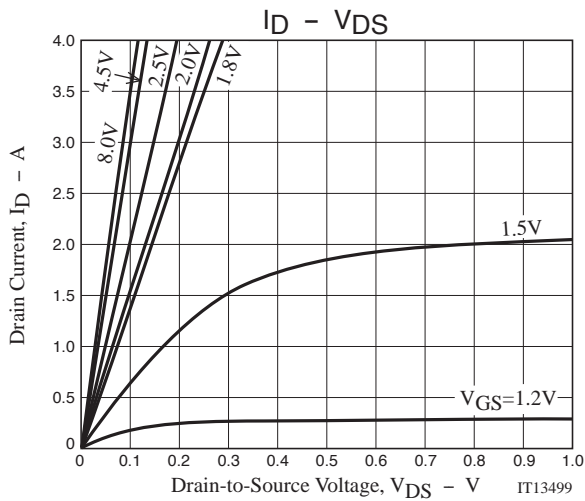


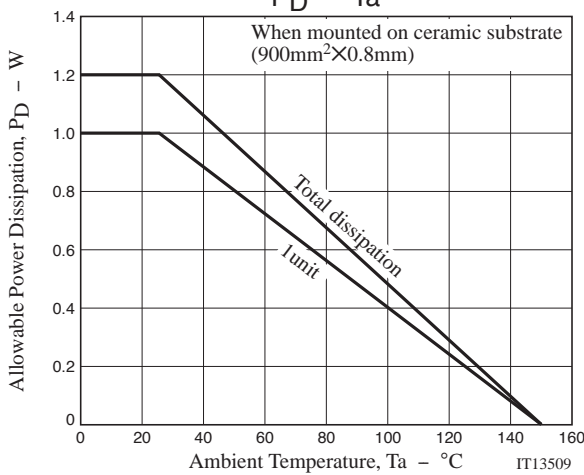
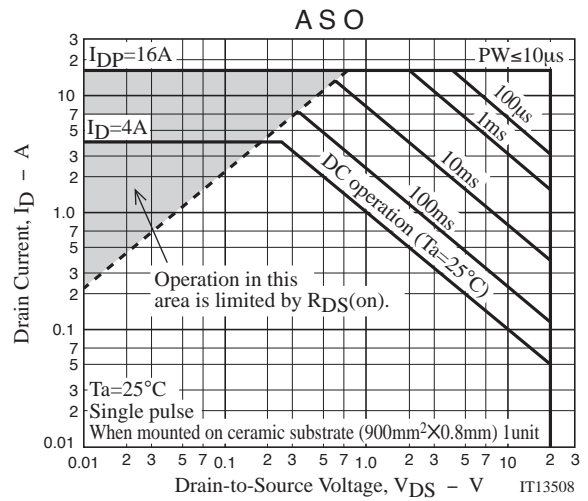
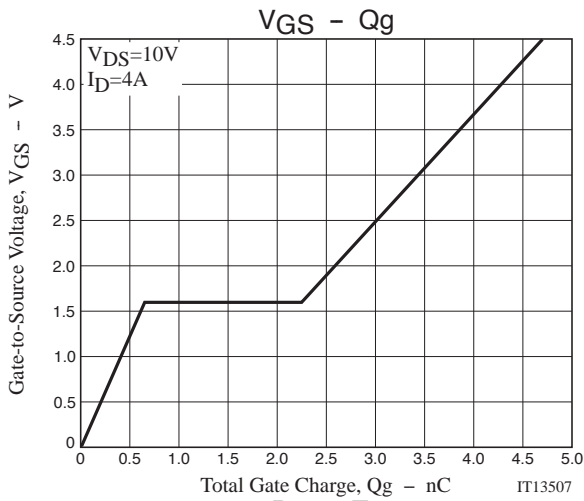
Electrical Connection



Switching Time Test Circuit







Note on usage : Since the EMH2408 is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.ged objects.ged objects.

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