



SANYO Semiconductors

DATA SHEET

EMH2401 — N-Channel Silicon MOSFET

General-Purpose Switching Device Applications

Features

- The EMH2401 incorporates an N-channel MOSFET that feature low ON-resistance and ultrahigh-speed switching, thereby enabling high-density mounting.
- 1.8V drive.

Specifications

Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	P-channel	Unit
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%	12	A
Allowable Power Dissipation	P _D	Mounted on a ceramic board (900mm²×0.8mm) 1unit	1.0	W
Total Dissipation	P _T	Mounted on a ceramic board (900mm²×0.8mm)	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 =1.5A	2.4	4.0		S
Static Drain-to-Source On-State Resistance	R _{DS(on)1}	I _D =1.5A, V _{GS} =4V		58	76	mΩ
	R _{DS(on)2}	I _D =0.8A, V _{GS} =2.5V		71	99	mΩ
	R _{DS(on)3}	I _D =0.3A, V _{GS} =1.8V		98	150	mΩ
Input Capacitance	C _{iss}	V _{DS} =10V, f=1MHz		365		pF
Output Capacitance	C _{oss}	V _{DS} =10V, f=1MHz		77		pF
Reverse Transfer Capacitance	C _{rss}	V _{DS} =10V, f=1MHz		67		pF
Turn-ON Delay Time	t _{d(on)}	See specified Test Circuit.		11.2		ns
Rise Time	t _r	See specified Test Circuit.		45		ns
Turn-OFF Delay Time	t _{d(off)}	See specified Test Circuit.		42		ns
Fall Time	t _f	See specified Test Circuit.		46		ns

Marking : LA

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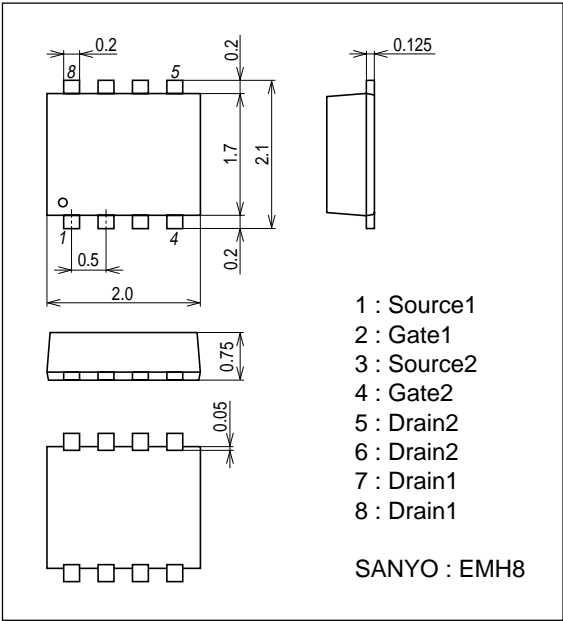
EMH2401

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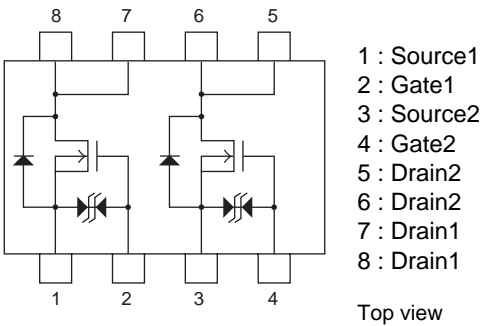
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Total Gate Charge	Qg	$V_{DS}=10V, V_{GS}=4V, I_D=3A$		4.9		nC
Gate-to-Source Charge	Qgs	$V_{DS}=10V, V_{GS}=4V, I_D=3A$		0.7		nC
Gate-to-Drain "Miller" Charge	Qgd	$V_{DS}=10V, V_{GS}=4V, I_D=3A$		2.0		nC
Diode Forward Voltage	V_{SD}	$I_S=3A, V_{GS}=0V$		0.85	1.2	V

Package Dimensions

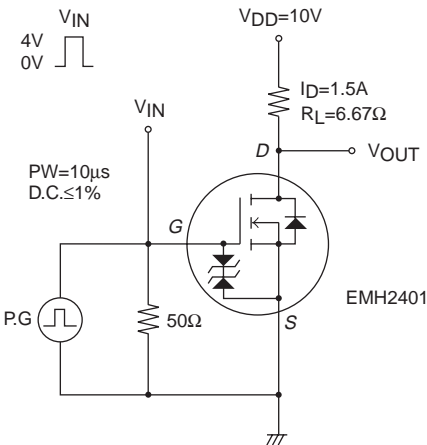
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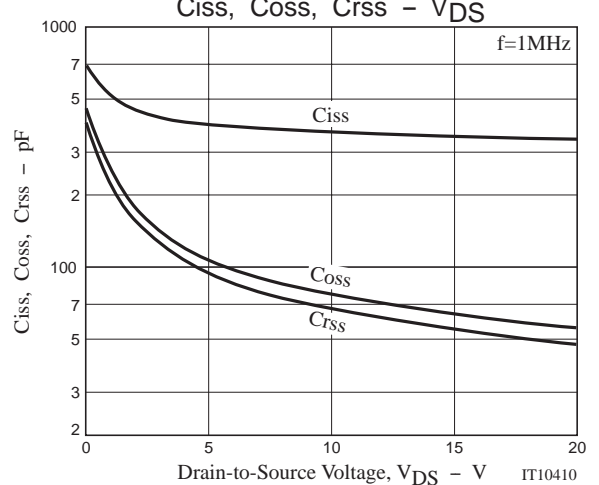
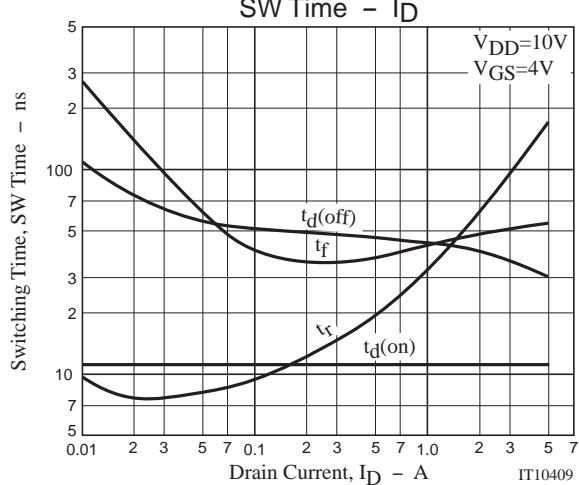
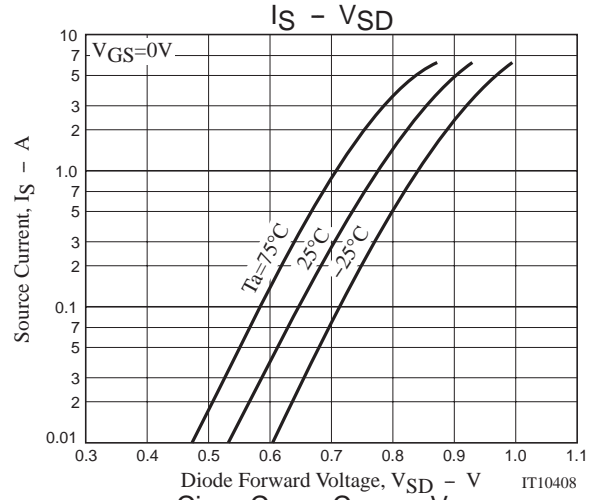
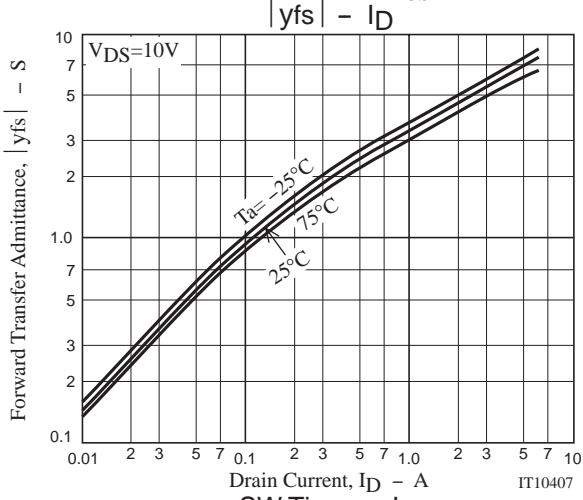
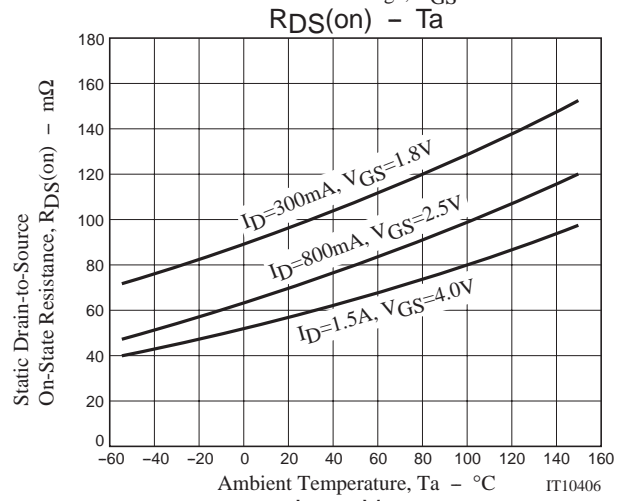
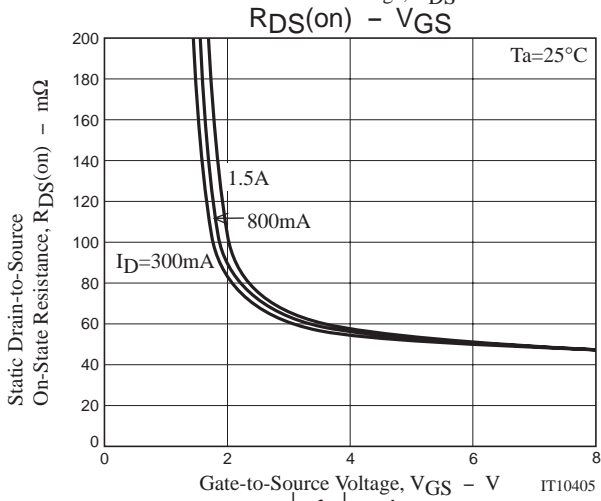
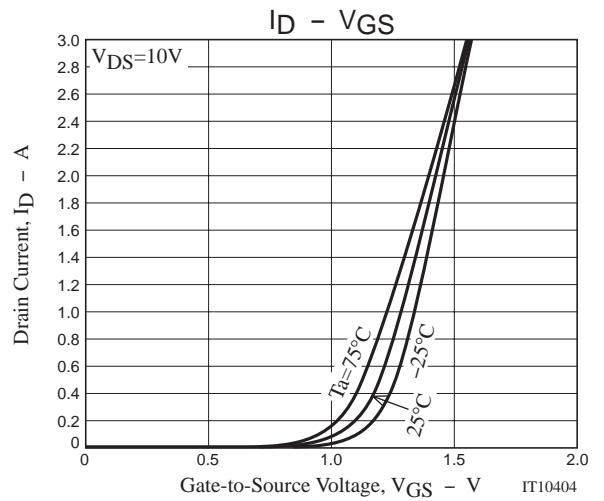
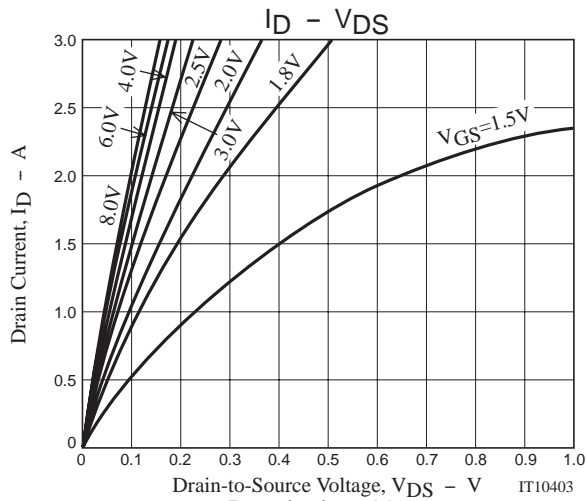


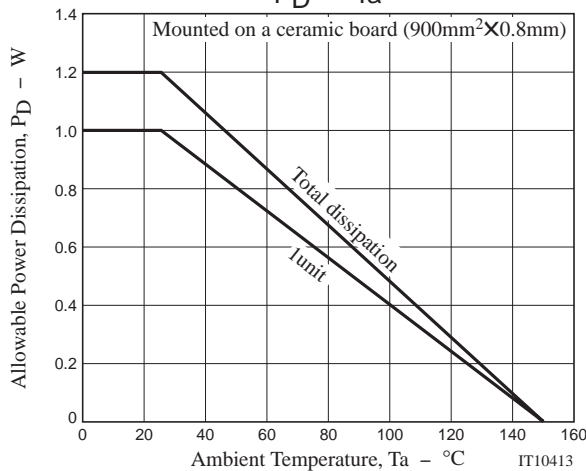
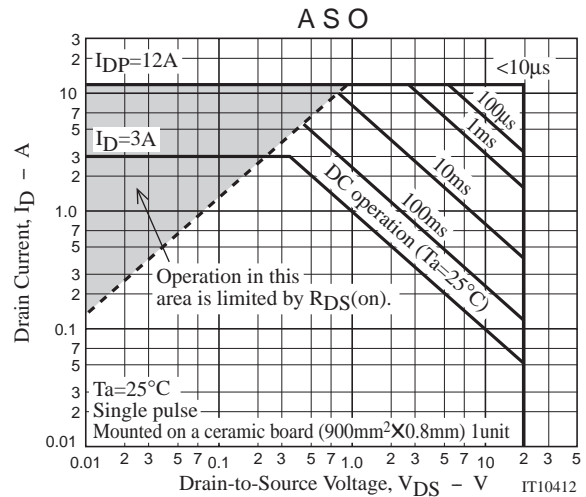
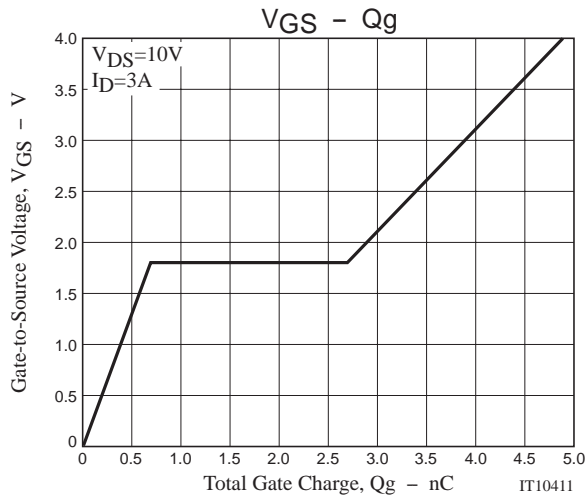
Electrical Connection



Switching Time Test Circuit







Note on usage : Since the EMH2401 is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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