

SANYO Semiconductors DATA SHEET

N-Channel Silicon MOSFET EMH2401—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	VDSS		20	V
Gate-to-Source Voltage	VGSS		±10	V
Drain Current (DC)	۱ _D		3	А
Drain Current (Pulse)	IDP	PW≤10µs, duty cycle≤1%	12	А
Allowable Power Dissipation	PD	Mounted on a ceramic board (900mm ² X0.8mm) 1unit	1.0	W
Total Dissipation	PT	Mounted on a ceramic board (900mm ² X0.8mm)	1.2	W
Channel Temperature	Tch		150	°C
Storage Temperature	Tstg		-55 to +150	°C

Electrical Characteristics at Ta=25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	Unit
Drain-to-Source Breakdown Voltage	V(BR)DSS	ID=1mA, VGS=0V	20			V
Zero-Gate Voltage Drain Current	IDSS	V _{DS} =20V, V _{GS} =0V			1	μΑ
Gate-to-Source Leakage Current	IGSS	V _{GS} =±8V, V _{DS} =0V			±10	μΑ
Cutoff Voltage	VGS(off)	VDS=10V, ID=1mA	0.4		1.3	V
Forward Transfer Admittance	yfs	V _{DS} =10V, I _D =1.5A	2.4	4.0		S
Static Drain-to-Source On-State Resistance	R _{DS} (on)1	ID=1.5A, VGS=4V		58	76	mΩ
	RDS(on)2	ID=0.8A VGS=2.5V		71	99	mΩ
	RDS(on)3	ID=0.3A, VGS=1.8V		98	150	mΩ
Input Capacitance	Ciss	V _{DS} =10V, f=1MHz		365		pF
Output Capacitance	Coss	VDS=10V, f=1MHz		77		pF
Reverse Transfer Capacitance	Crss	V _{DS} =10V, f=1MHz		67		pF
Turn-ON Delay Time	t _d (on)	See specified Test Circuit.		11.2		ns
Rise Time	tr	See specified Test Circuit.		45		ns
Turn-OFF Delay Time	t _d (off)	See specified Test Circuit.		42		ns
Fall Time	tf	See specified Test Circuit.		46		ns
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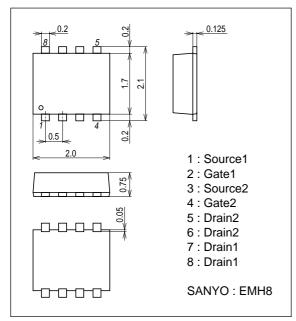
SANYO Electric Co., Ltd. Semiconductor Company TOKYO OFFICE Tokyo Bldg., 1-10, 1 Chome, Ueno, Taito-ku, TOKYO, 110-8534 JAPAN

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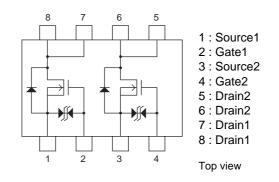
Parameter	Symbol	Conditions	Ratings			Unit
	Symbol		min	typ	max	Unit
Total Gate Charge	Qg	VDS=10V, VGS=4V, ID=3A		4.9		nC
Gate-to-Source Charge	Qgs	V _{DS} =10V, V _{GS} =4V, I _D =3A		0.7		nC
Gate-to-Drain "Miller" Charge	Qgd	VDS=10V, VGS=4V, ID=3A		2.0		nC
Diode Forward Voltage	VSD	IS=3A, VGS=0V		0.85	1.2	V

Package Dimensions

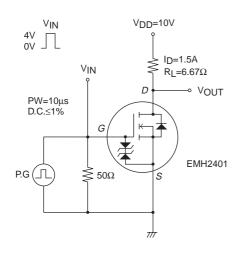
unit : mm 7045-002

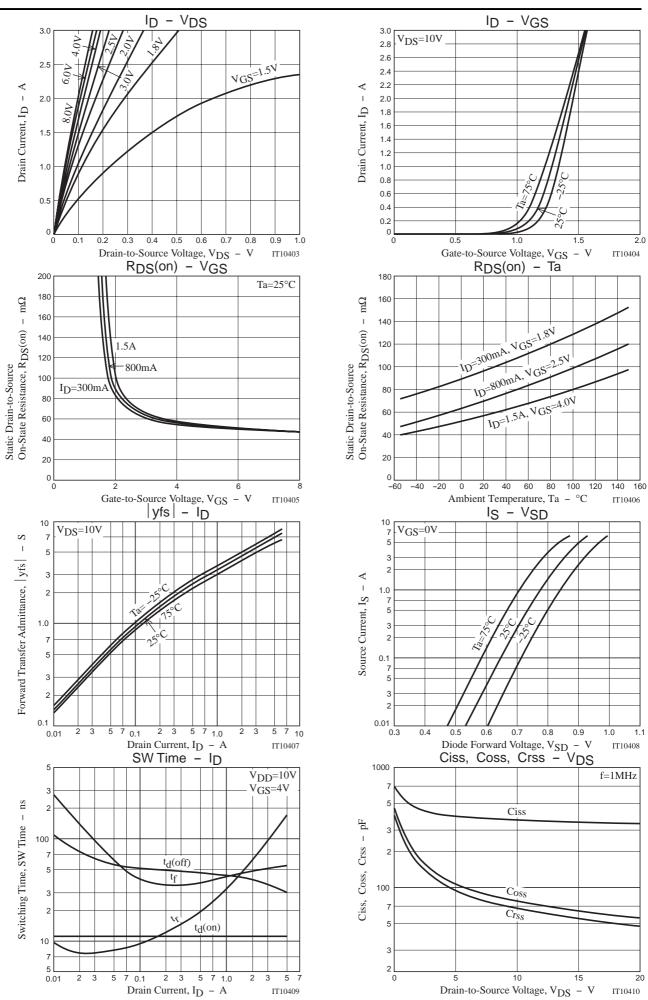


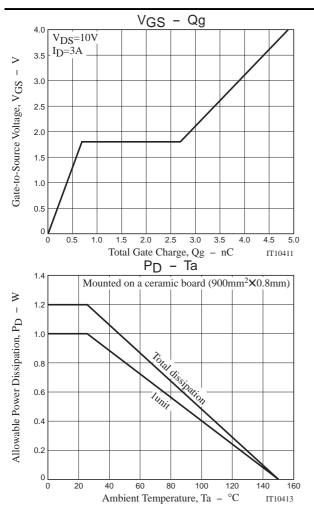
Electrical Connection

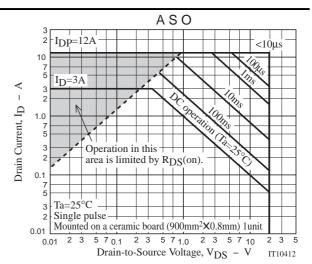


Switching Time Test Circuit









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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