

Ordering number : EN8726



SANYO Semiconductors

## DATA SHEET

# EMH2302 — P-Channel Silicon MOSFET General-Purpose Switching Device Applications

## Features

- The EMH2302 incorporates a P-channel MOSFET that feature low ON-resistance and ultrahigh-speed switching, thereby enabling high-density mounting.
- 4V drive.

## Specifications

Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	P-channel	Unit
Drain-to-Source Voltage	V <sub>DSS</sub>		-30	V
Gate-to-Source Voltage	V <sub>GSS</sub>		±20	V
Drain Current (DC)	I <sub>D</sub>		-2	A
Drain Current (Pulse)	I <sub>DP</sub>	PW≤10μs, duty cycle≤1%	-8	A
Allowable Power Dissipation	P <sub>D</sub>	Mounted on a ceramic board (900mm²×0.8mm) 1unit	1.0	W
Total Dissipation	P <sub>T</sub>	Mounted on a ceramic board (900mm²×0.8mm)	1.2	W
Channel Temperature	T <sub>ch</sub>		150	°C
Storage Temperature	T <sub>stg</sub>		-55 to +150	°C

Electrical Characteristics at Ta=25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Drain-to-Source Breakdown Voltage	V <sub>(BR)DSS</sub>	I <sub>D</sub> =-1mA, V <sub>GS</sub> =0V	-30			V
Zero-Gate Voltage Drain Current	I <sub>DSS</sub>	V <sub>DS</sub> =-30V, V <sub>GS</sub> =0V			-1	μA
Gate-to-Source Leakage Current	I <sub>GSS</sub>	V <sub>GS</sub> =±16V, V <sub>DS</sub> =0V			±10	μA
Cutoff Voltage	V <sub>GS(off)</sub>	V <sub>DS</sub> =-10V, I <sub>D</sub> =-1mA	-1.2		-2.6	V
Forward Transfer Admittance	y <sub>fs</sub>	V <sub>DS</sub> =-10V, I <sub>D</sub> =-1A	1.3	2.2		S
Static Drain-to-Source On-State Resistance	R <sub>DS(on)1</sub>	I <sub>D</sub> =-1A, V <sub>GS</sub> =-10V		115	150	mΩ
	R <sub>DS(on)2</sub>	I <sub>D</sub> =-0.5A, V <sub>GS</sub> =-4V		215	310	mΩ
Input Capacitance	C <sub>iss</sub>	V <sub>DS</sub> =-10V, f=1MHz		285		pF
Output Capacitance	C <sub>oss</sub>	V <sub>DS</sub> =-10V, f=1MHz		65		pF
Reverse Transfer Capacitance	C <sub>rss</sub>	V <sub>DS</sub> =-10V, f=1MHz		52		pF
Turn-ON Delay Time	t <sub>d(on)</sub>	See specified Test Circuit.		8.4		ns
Rise Time	t <sub>r</sub>	See specified Test Circuit.		15.5		ns
Turn-OFF Delay Time	t <sub>d(off)</sub>	See specified Test Circuit.		29		ns
Fall Time	t <sub>f</sub>	See specified Test Circuit.		25.5		ns

Marking : MB

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TOKYO OFFICE Tokyo Bldg., 1-10, 1 Chome, Ueno, Taito-ku, TOKYO, 110-8534 JAPAN



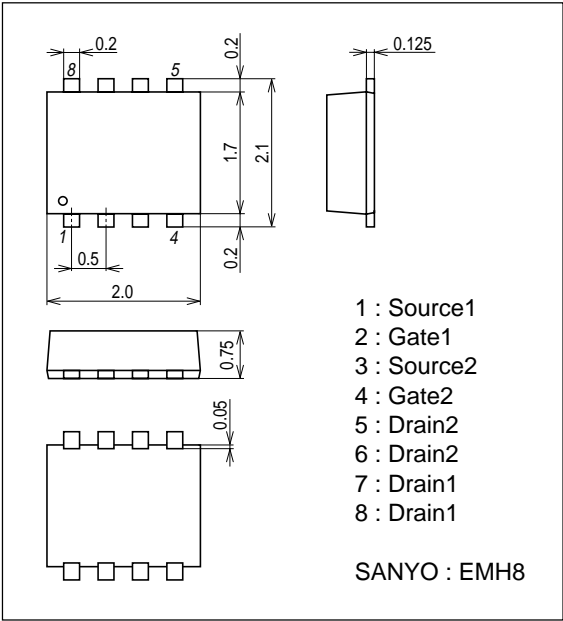
EMH2302

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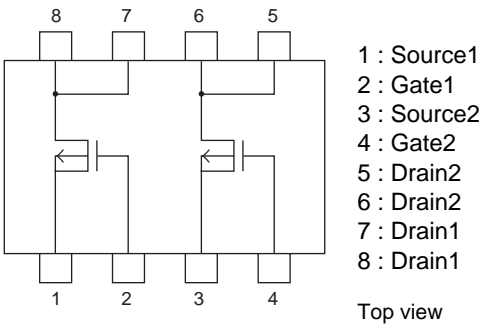
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Total Gate Charge	Qg	$V_{DS}=-10V, V_{GS}=-10V, I_D=-2A$		6.7		nC
Gate-to-Source Charge	Qgs	$V_{DS}=-10V, V_{GS}=-10V, I_D=-2A$		1.1		nC
Gate-to-Drain "Miller" Charge	Qgd	$V_{DS}=-10V, V_{GS}=-10V, I_D=-2A$		1.05		nC
Diode Forward Voltage	$V_{SD}$	$I_S=-2A, V_{GS}=0V$		-0.85	-1.2	V

Package Dimensions

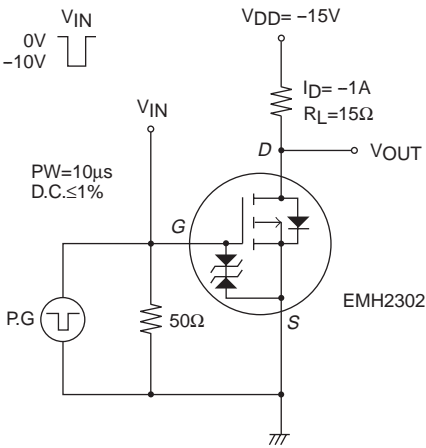
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7045-002



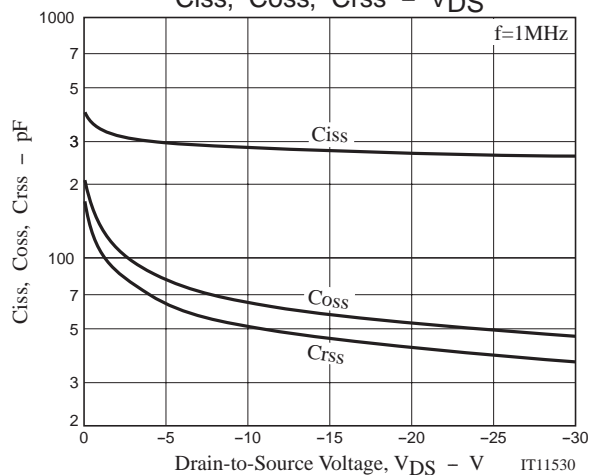
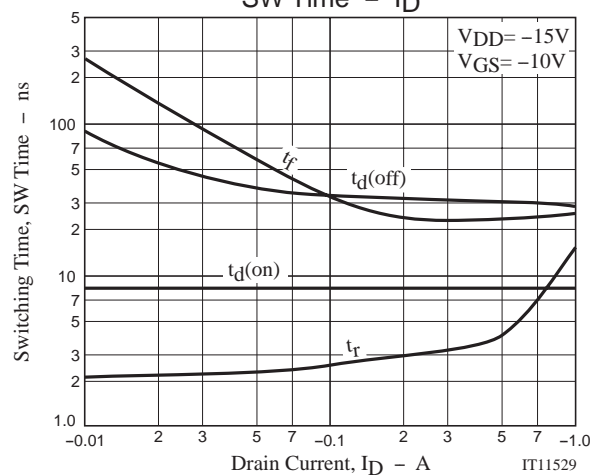
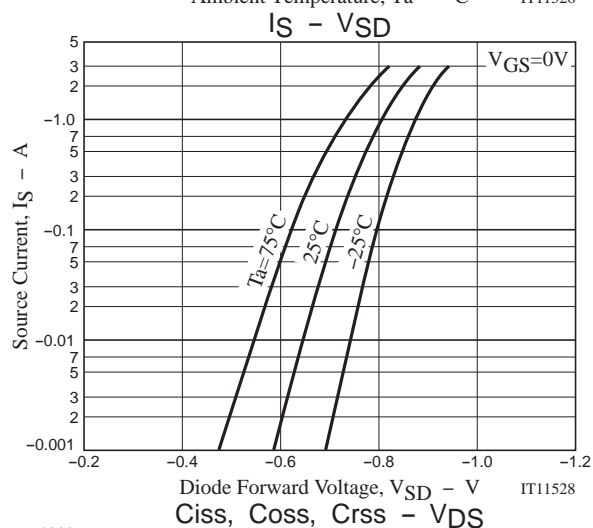
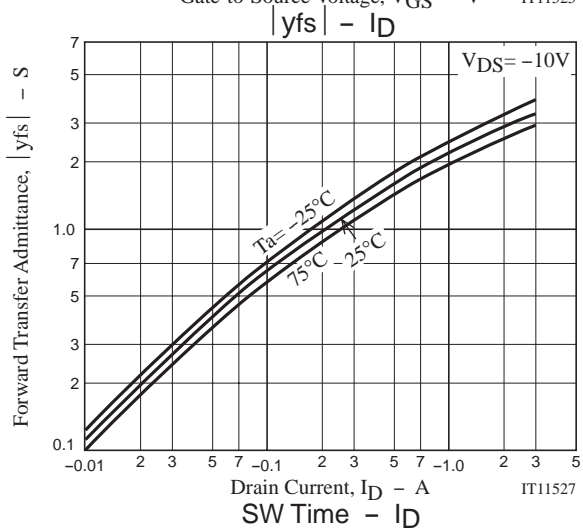
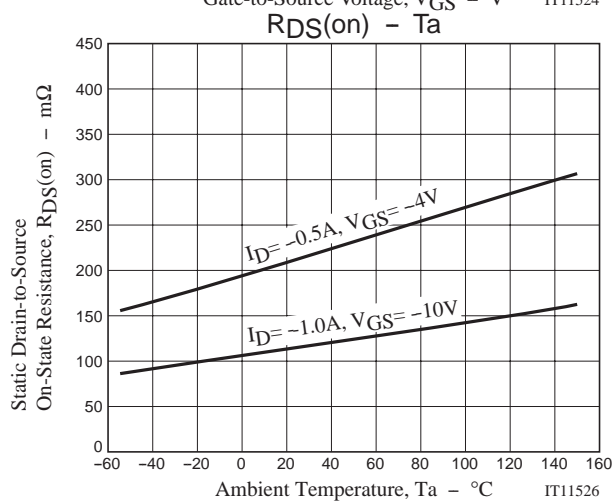
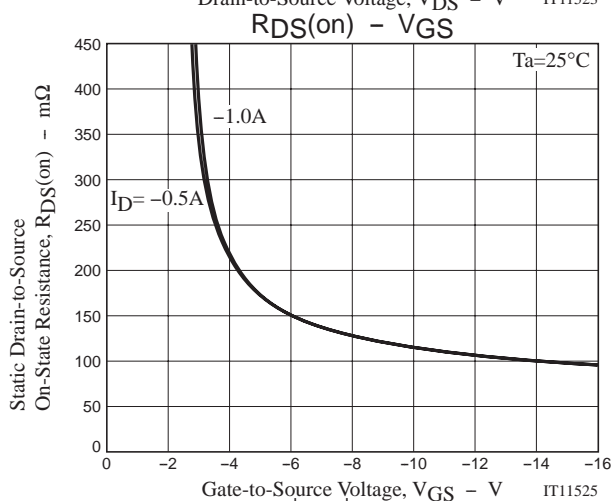
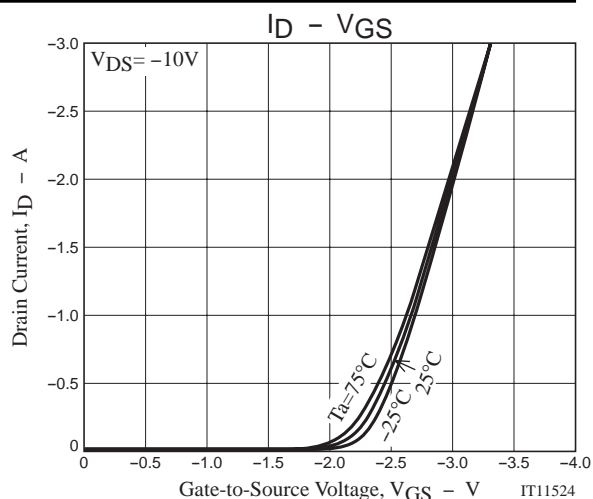
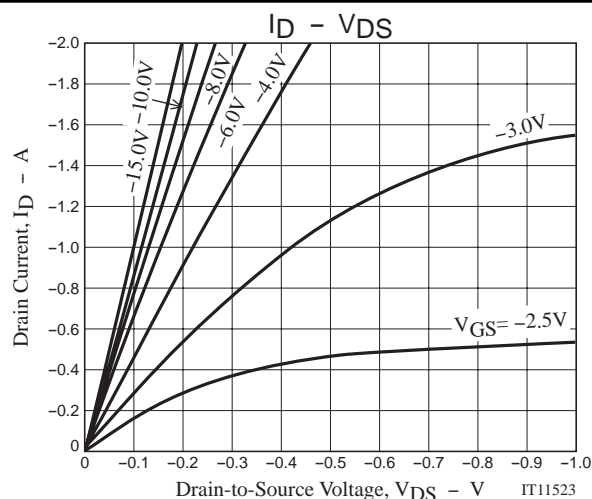
Electrical Connection



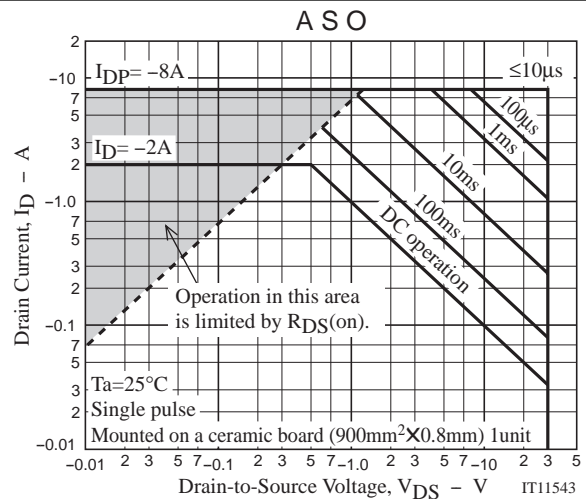
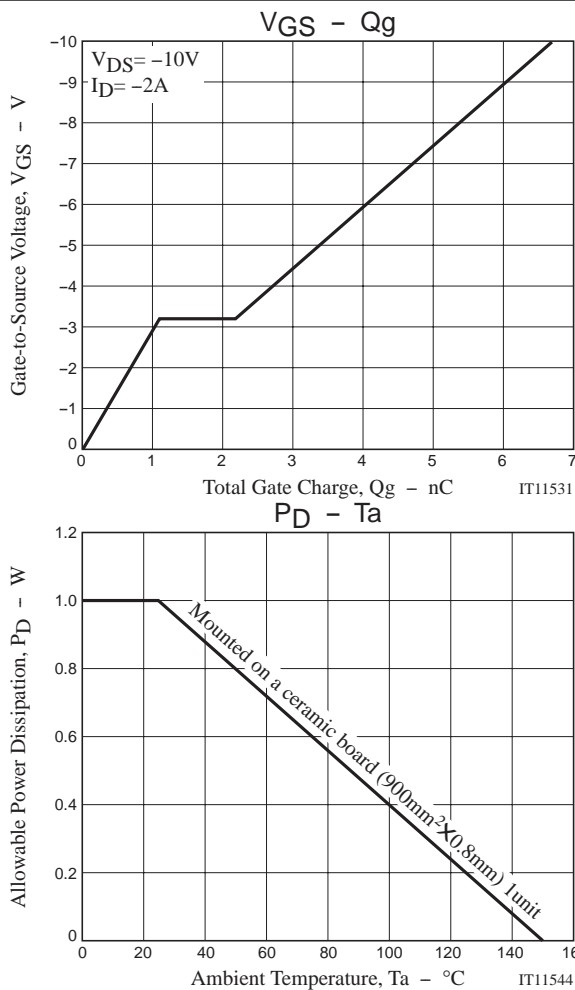
Switching Time Test Circuit



# EMH2302



## EMH2302



Note on usage : Since the EMH2302 is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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