

Ordering number : EN8729



SANYO Semiconductors

DATA SHEET

N-Channel Silicon MOSFET
EMH2402 — 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.
- 4V drive.

Specifications

Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	P-channel	Unit
Drain-to-Source Voltage	V _{DSS}		30	V
Gate-to-Source Voltage	V _{GSS}		±20	V
Drain Current (DC)	I _D		3.5	A
Drain Current (Pulse)	I _{DP}	PW≤10μs, duty cycle≤1%	14	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	30			V
Zero-Gate Voltage Drain Current	I _{DSS}	V _{DS} =30V, V _{GS} =0V			1	μA
Gate-to-Source Leakage Current	I _{GSS}	V _{GS} =±16V, V _{DS} =0V			±10	μA
Cutoff Voltage	V _{GS(off)}	V _{DS} =10V, I _D =1mA	1.2		2.6	V
Forward Transfer Admittance	y _{fs}	V _{DS} =10V, I _D =2A	1.5	2.6		S
Static Drain-to-Source On-State Resistance	R _{DS(on)1}	I _D =2A, V _{GS} =10V		53	69	mΩ
	R _{DS(on)2}	I _D =1A, V _{GS} =4V		105	150	mΩ
Input Capacitance	C _{iss}	V _{DS} =10V, f=1MHz		280		pF
Output Capacitance	C _{oss}	V _{DS} =10V, f=1MHz		60		pF
Reverse Transfer Capacitance	C _{rss}	V _{DS} =10V, f=1MHz		47		pF
Turn-ON Delay Time	t _{d(on)}	See specified Test Circuit.		8.6		ns
Rise Time	t _r	See specified Test Circuit.		25.5		ns
Turn-OFF Delay Time	t _{d(off)}	See specified Test Circuit.		23.0		ns
Fall Time	t _f	See specified Test Circuit.		13.5		ns

Marking : LB

Continued on next page.

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EMH2402

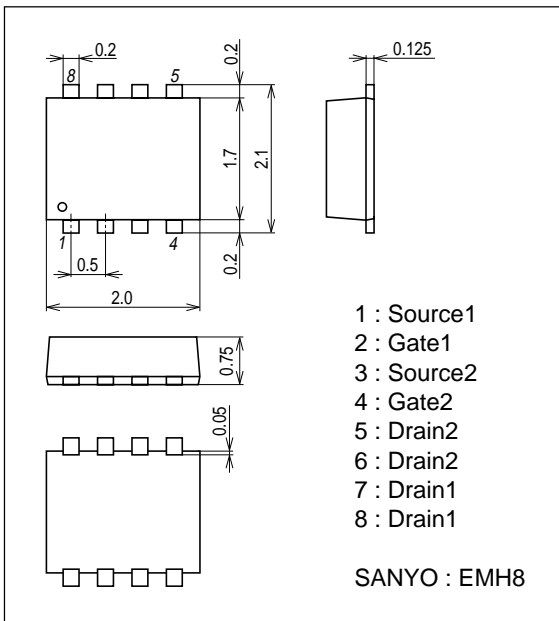
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Total Gate Charge	Qg	$V_{DS}=10V, V_{GS}=10V, I_D=3.5A$		6.4		nC
Gate-to-Source Charge	Qgs	$V_{DS}=10V, V_{GS}=10V, I_D=3.5A$		1.35		nC
Gate-to-Drain "Miller" Charge	Qgd	$V_{DS}=10V, V_{GS}=10V, I_D=3.5A$		1.05		nC
Diode Forward Voltage	V_{SD}	$I_S=3.5A, V_{GS}=0V$		0.85	1.2	V

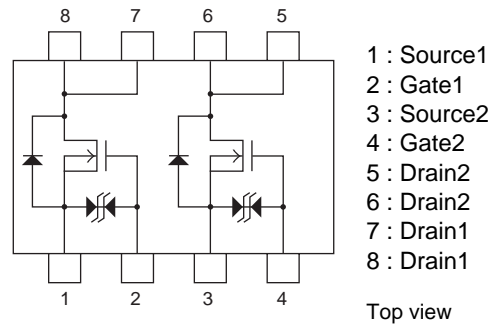
Package Dimensions

unit : mm

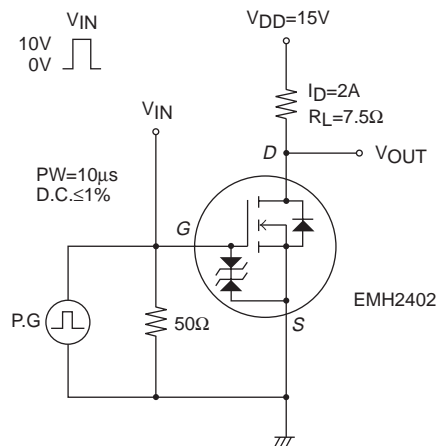
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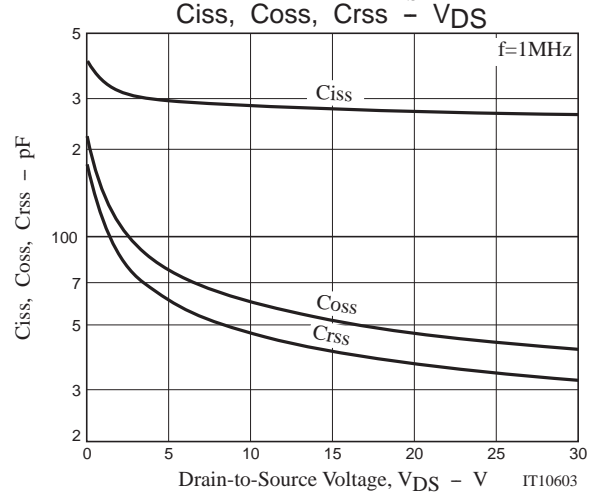
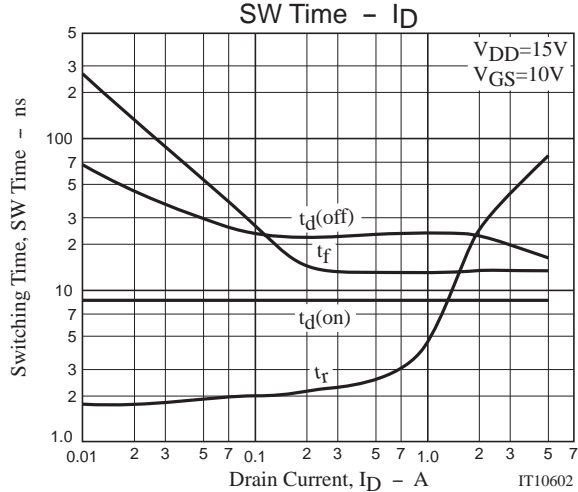
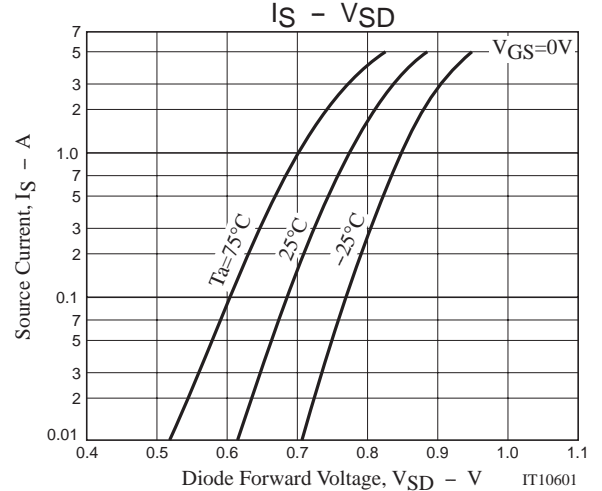
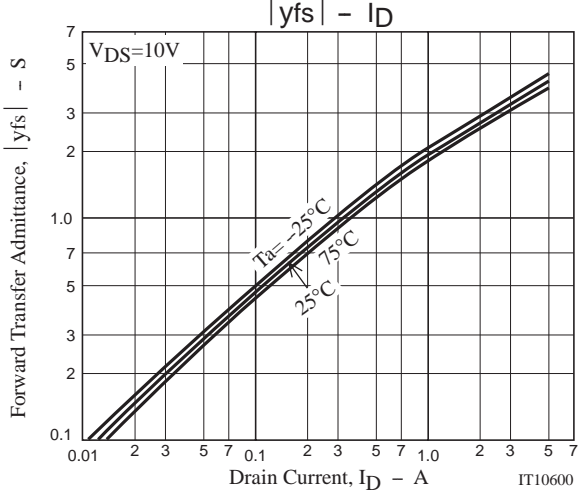
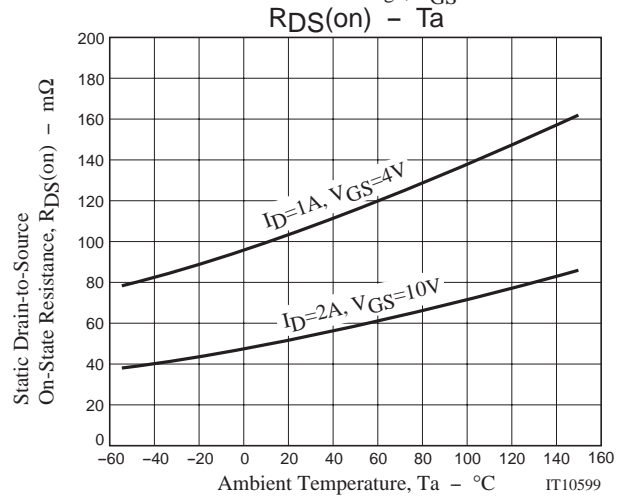
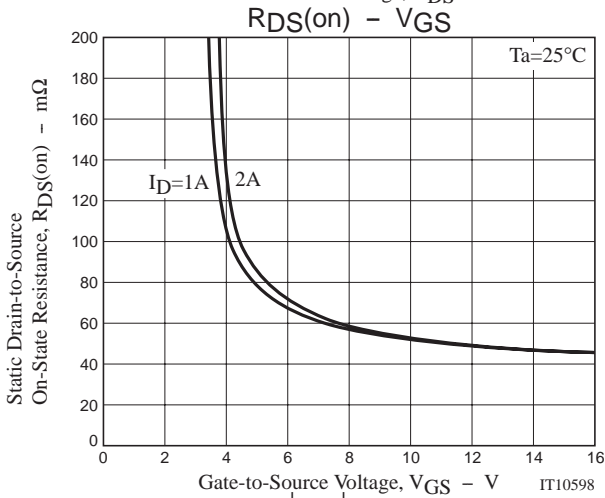
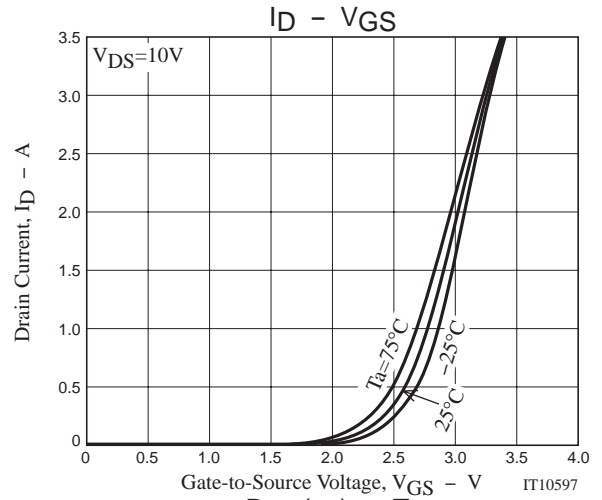
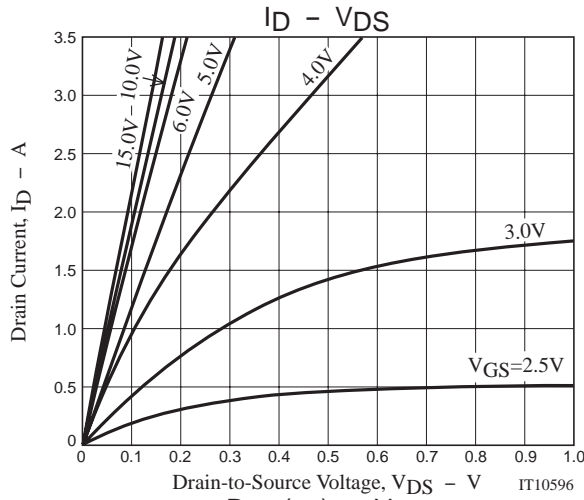
Electrical Connection



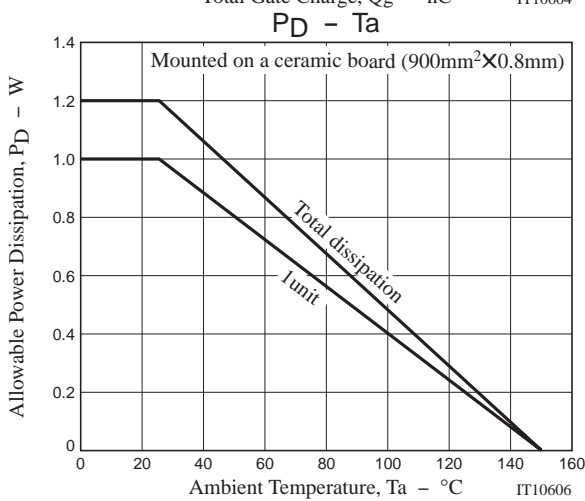
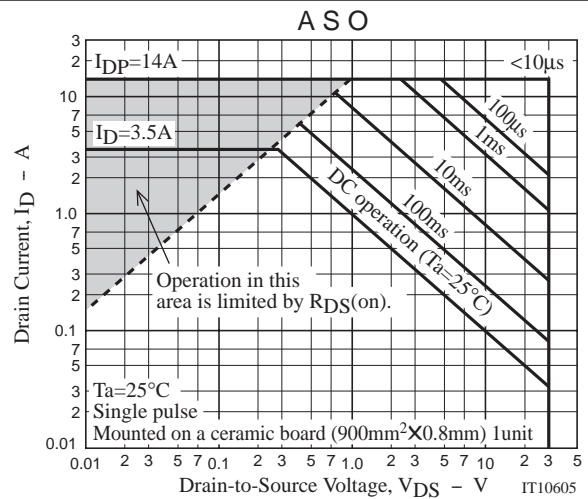
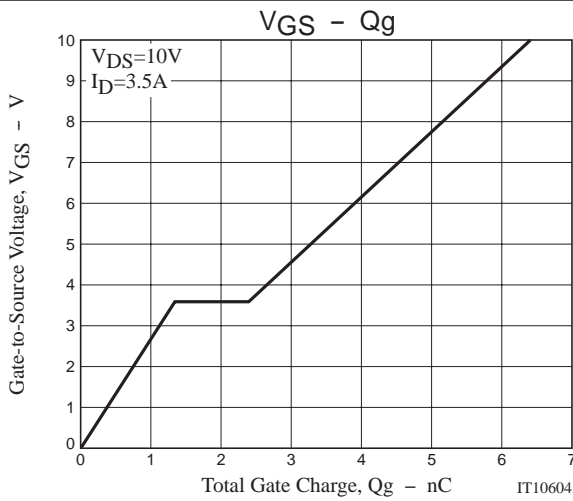
Switching Time Test Circuit



EMH2402



EMH2402



Note on usage : Since the EMH2402 is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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