



EMH1303 — P-Channel Silicon MOSFET

General-Purpose Switching Device Applications

Features

- Low ON-resistance.
- 1.8V drive.

Specifications

Absolute Maximum Ratings at $T_a=25^\circ\text{C}$

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	V_{DSS}		-12	V
Gate-to-Source Voltage	V_{GSS}		± 10	V
Drain Current (DC)	I_D		-7	A
Drain Current (Pulse)	I_{DP}	$PW \leq 10\mu\text{s}$, duty cycle $\leq 1\%$	-28	A
Allowable Power Dissipation	P_D	Mounted on a ceramic board (1200mm ² ×0.8mm)	1.5	W
Channel Temperature	T_{ch}		150	$^\circ\text{C}$
Storage Temperature	T_{stg}		-55 to +150	$^\circ\text{C}$

Electrical Characteristics at $T_a=25^\circ\text{C}$

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Drain-to-Source Breakdown Voltage	$V_{(BR)DSS}$	$I_D=-1\text{mA}$, $V_{GS}=0\text{V}$	-12			V
Zero-Gate Voltage Drain Current	I_{DSS1}	$V_{DS}=-8\text{V}$, $V_{GS}=0\text{V}$			-1	μA
	I_{DSS2}	$V_{DS}=-12\text{V}$, $V_{GS}=0\text{V}$			-10	μA
Gate-to-Source Leakage Current	I_{GSS}	$V_{GS}=\pm 8\text{V}$, $V_{DS}=0\text{V}$			± 10	μA
Cutoff Voltage	$V_{GS(off)}$	$V_{DS}=-6\text{V}$, $I_D=-1\text{mA}$	-0.4		-1.2	V
Forward Transfer Admittance	$ y_{fs} $	$V_{DS}=-6\text{V}$, $I_D=-3\text{A}$	7.2	12		S
Static Drain-to-Source On-State Resistance	$R_{DS(on)1}$	$I_D=-6\text{A}$, $V_{GS}=-4.5\text{V}$		18	23	$\text{m}\Omega$
	$R_{DS(on)2}$	$I_D=-6\text{A}$, $V_{GS}=-2.5\text{V}$		27	36	$\text{m}\Omega$
	$R_{DS(on)3}$	$I_D=-0.5\text{A}$, $V_{GS}=-1.8\text{V}$		40	65	$\text{m}\Omega$

Marking : JC

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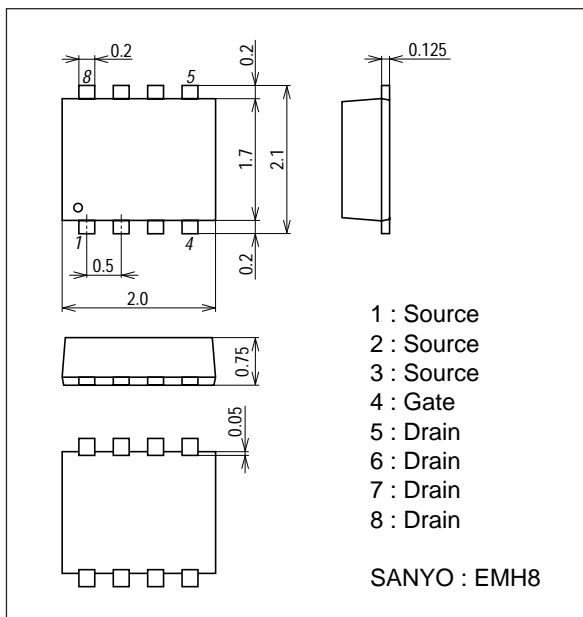
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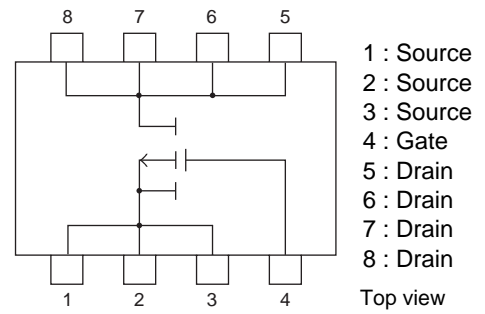
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Input Capacitance	Ciss	$V_{DS}=-6V, f=1MHz$		1100		pF
Output Capacitance	Coss	$V_{DS}=-6V, f=1MHz$		350		pF
Reverse Transfer Capacitance	Crss	$V_{DS}=-6V, f=1MHz$		265		pF
Turn-ON Delay Time	$t_d(on)$	See specified Test Circuit.		11		ns
Rise Time	t_r	See specified Test Circuit.		165		ns
Turn-OFF Delay Time	$t_d(off)$	See specified Test Circuit.		100		ns
Fall Time	t_f	See specified Test Circuit.		105		ns
Total Gate Charge	Qg	$V_{DS}=-6V, V_{GS}=-4.5V, I_D=-7A$		12.0		nC
Gate-to-Source Charge	Qgs	$V_{DS}=-6V, V_{GS}=-4.5V, I_D=-7A$		1.9		nC
Gate-to-Drain "Miller" Charge	Qgd	$V_{DS}=-6V, V_{GS}=-4.5V, I_D=-7A$		2.9		nC
Diode Forward Voltage	VSD	$I_S=-7A, V_{GS}=0V$		-0.8	-1.2	V

Package Dimensions

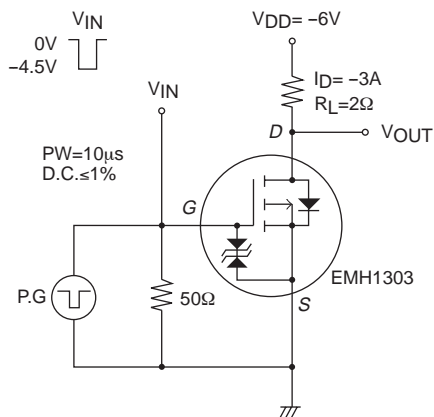
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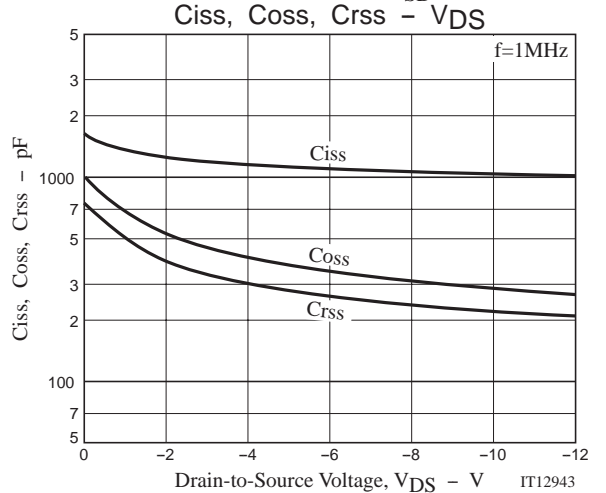
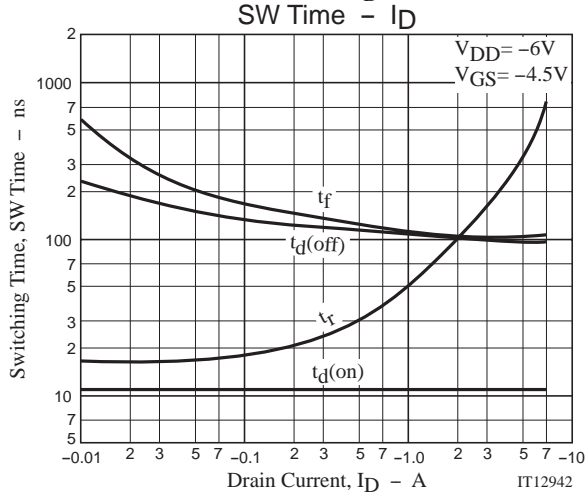
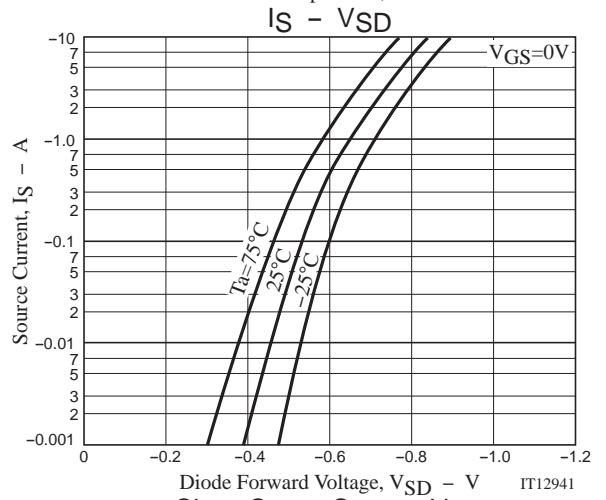
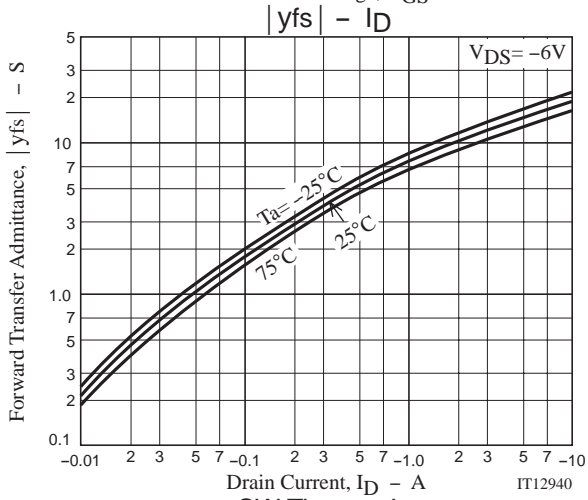
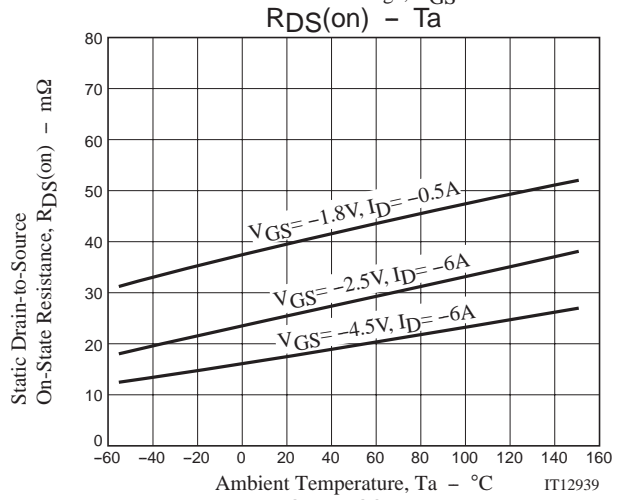
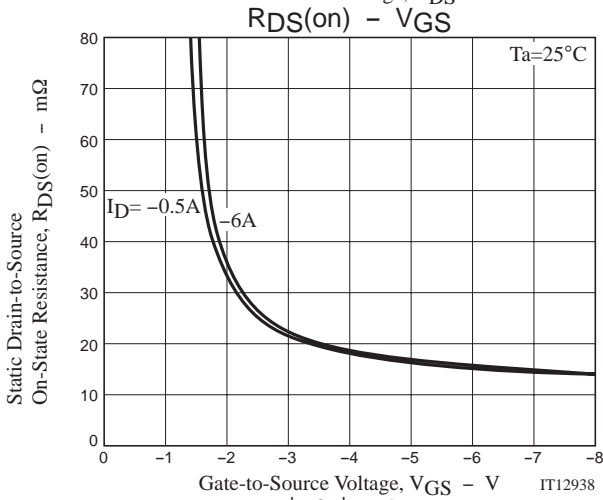
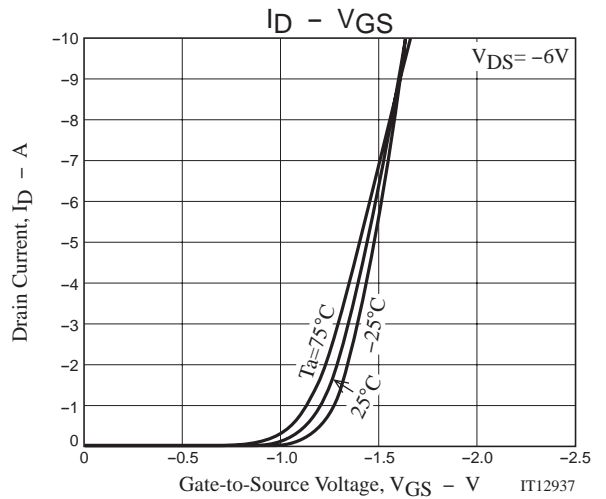
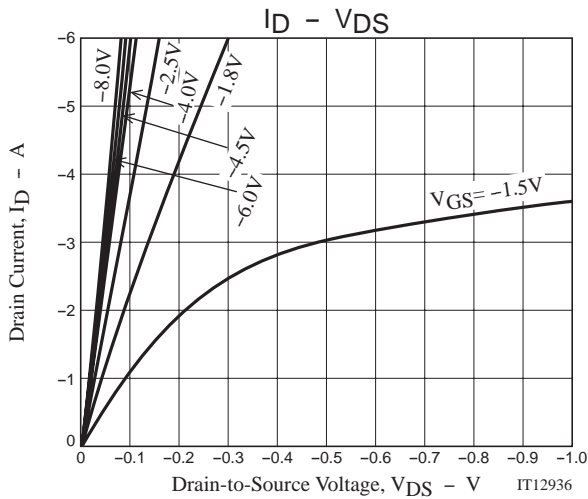


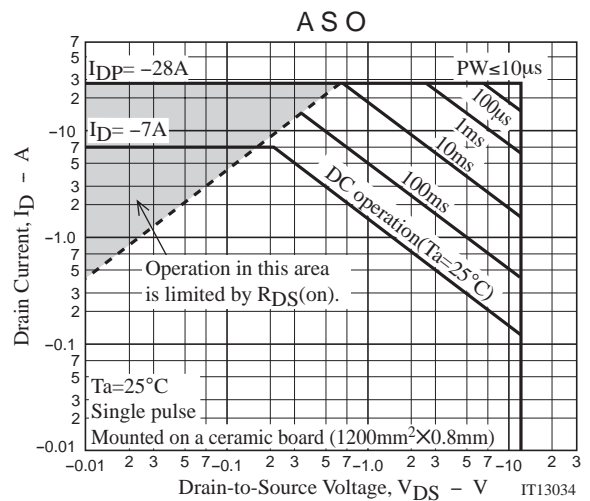
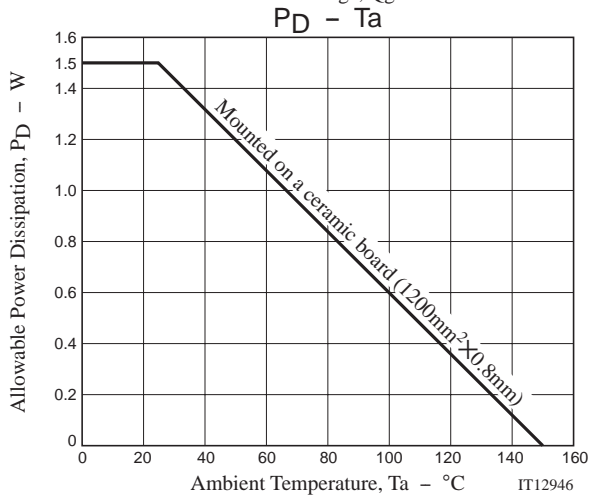
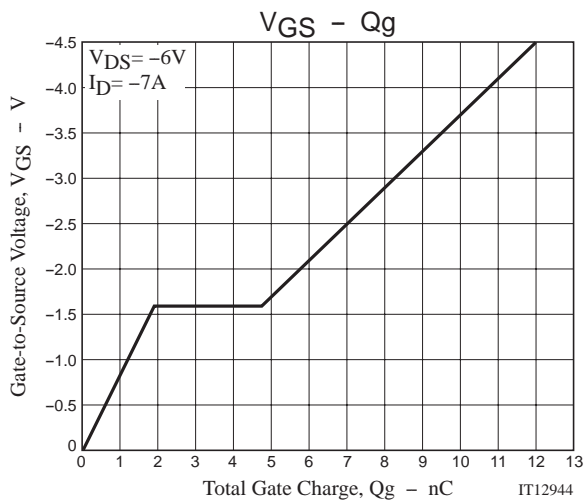
Electrical Connection



Switching Time Test Circuit







Note on usage : Since the EMH1303 is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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