



SANYO Semiconductors

DATA SHEET

An ON Semiconductor Company

EMH2407R — N-Channel Silicon MOSFET — General-Purpose Switching Device Applications

Features

- ON-resistance $R_{DS(on)1}$: 16mΩ(typ.)
- Common-drain type
- Halogen free compliance
- Best suited for LiB charging and discharging switch
- 2.5V drive

Specifications

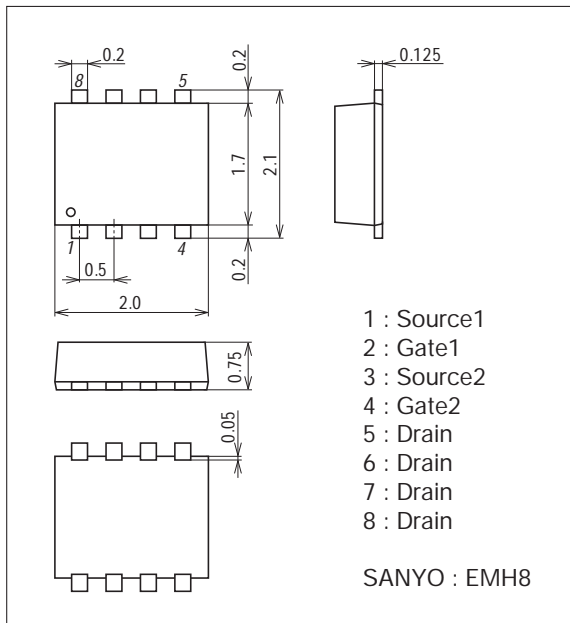
Absolute Maximum Ratings at $T_a=25^\circ\text{C}$

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	V_{DSS}		20	V
Gate-to-Source Voltage	V_{GSS}		± 12	V
Drain Current (DC)	I_D		6	A
Drain Current (Pulse)	I_{DP}	$PW \leq 10\mu\text{s}$, duty cycle $\leq 1\%$	60	A
Allowable Power Dissipation	P_D	When mounted on ceramic substrate (900mm ² ×0.8mm) 1unit	1.3	W
Total Dissipation	P_T	When mounted on ceramic substrate (900mm ² ×0.8mm)	1.4	W
Channel Temperature	T_{ch}		150	°C
Storage Temperature	T_{stg}		-55 to +150	°C

Package Dimensions

unit : mm (typ)

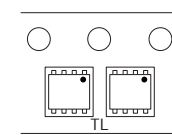
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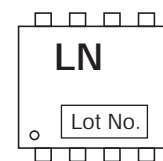
Product & Package Information

- Package : EMH8
- JEITA, JEDEC : -
- Minimum Packing Quantity : 3,000 pcs./reel

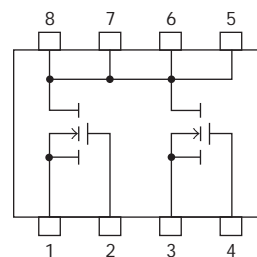
Taping Type : TL



Marking



Electrical Connection

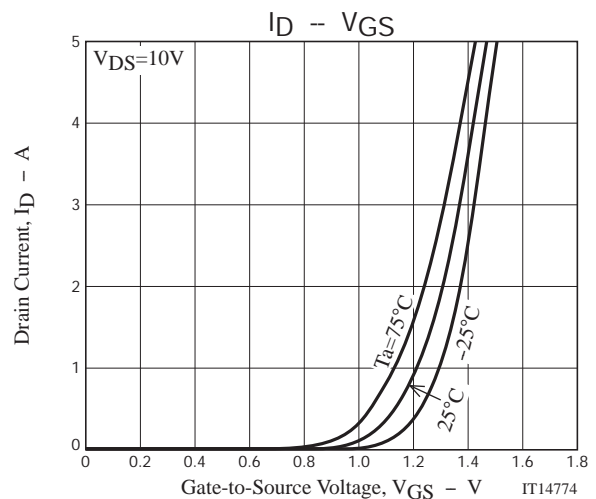
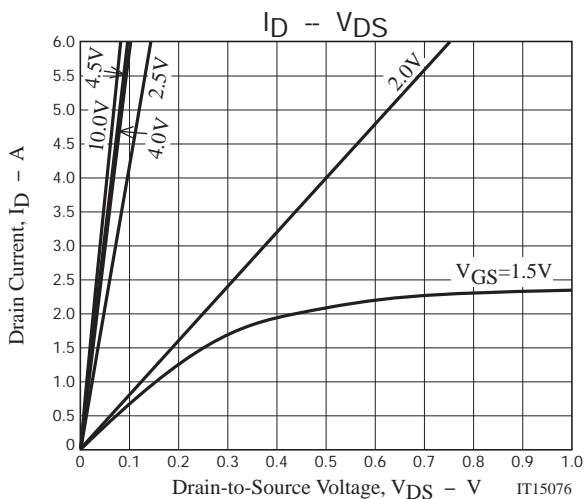
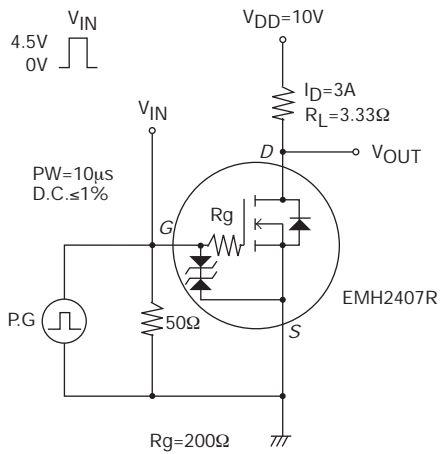


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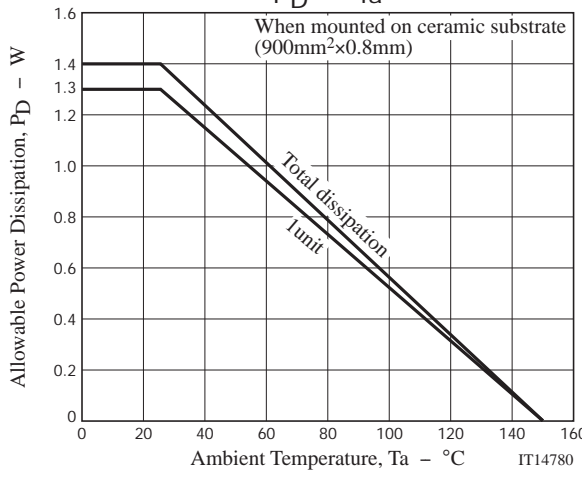
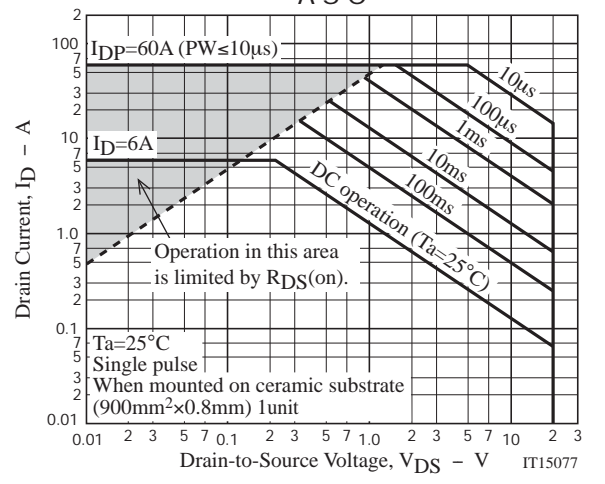
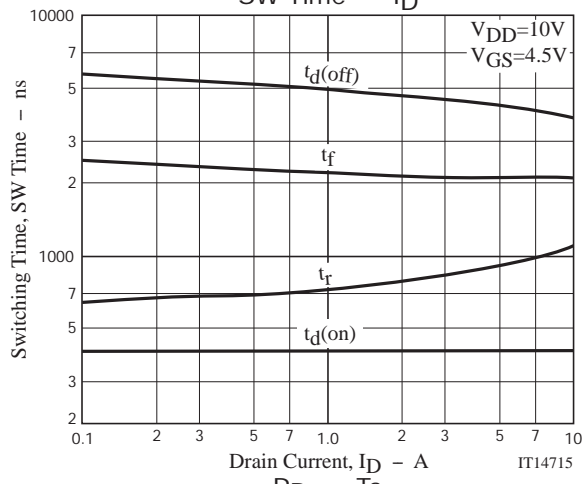
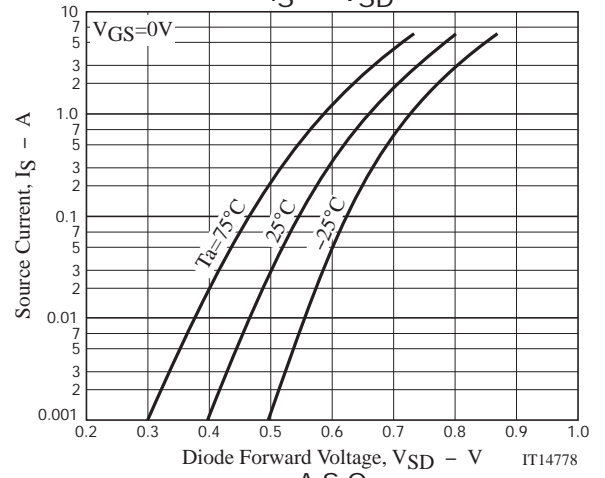
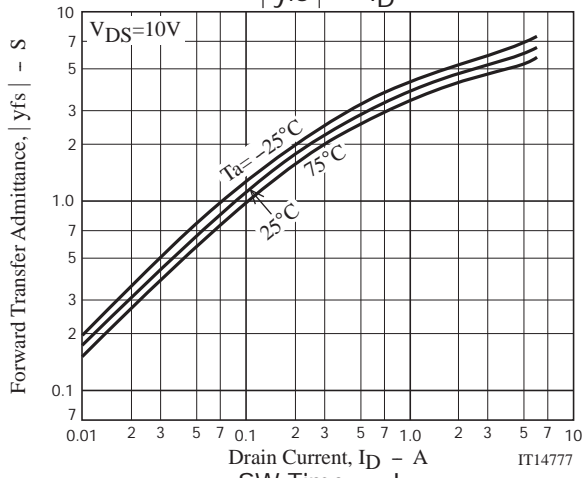
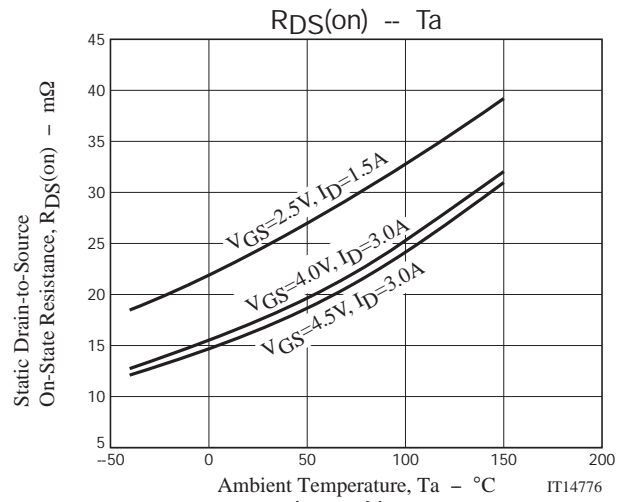
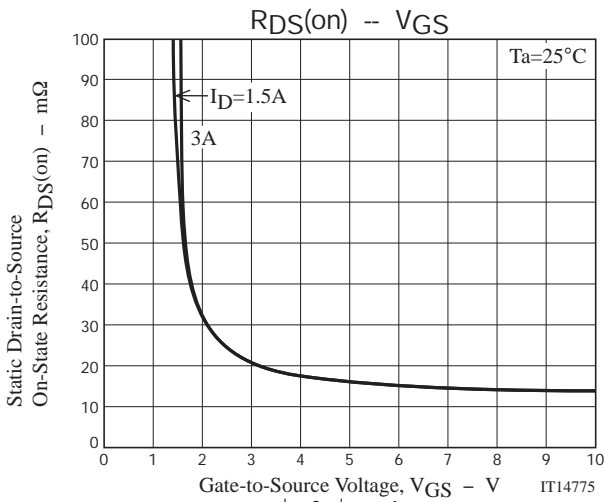
Electrical Characteristics at Ta=25°C

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}	$V_{GS}=\pm 8V, V_{DS}=0V$			± 10	μA
Cutoff Voltage	$V_{GS(off)}$	$V_{DS}=10V, I_D=1mA$	0.5		1.3	V
Forward Transfer Admittance	$ y_{fs} $	$V_{DS}=10V, I_D=3A$		5		S
Static Drain-to-Source On-State Resistance	$R_{DS(on)1}$	$I_D=3A, V_{GS}=4.5V$	11	16	21	$m\Omega$
	$R_{DS(on)2}$	$I_D=3A, V_{GS}=4V$	11.5	17	23	$m\Omega$
	$R_{DS(on)3}$	$I_D=1.5A, V_{GS}=2.5V$	14	24	34	$m\Omega$
Turn-ON Delay Time	$t_{d(on)}$	See specified Test Circuit.		400		ns
Rise Time	t_r	See specified Test Circuit.		820		ns
Turn-OFF Delay Time	$t_{d(off)}$	See specified Test Circuit.		4500		ns
Fall Time	t_f	See specified Test Circuit.		2100		ns
Total Gate Charge	Q_g	$V_{DS}=10V, V_{GS}=4.5V, I_D=6A$		60		nC
Gate-to-Source Charge	Q_{gs}	$V_{DS}=10V, V_{GS}=4.5V, I_D=6A$		14		nC
Gate-to-Drain "Miller" Charge	Q_{gd}	$V_{DS}=10V, V_{GS}=4.5V, I_D=6A$		13		nC
Diode Forward Voltage	V_{SD}	$I_S=6A, V_{GS}=0V$		0.8	1.2	V

Switching Time Test Circuit



EMH2407R



Note on usage : Since the EMH2407R is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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