

EMH2418R

N-Channel Power MOSFET 24V, 9A, 15mΩ, Dual EMH8



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Features

- Low On-resistance
- 2.5V drive
- Common-Drain Type
- Protection diode in
- Built-in gate protection resistor
- Best suited for LiB charging and discharging switch
- Halogen free compliance

Specifications

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

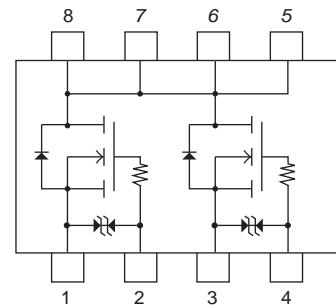
Parameter	Symbol	Value	Unit
Drain to Source Voltage	V_{DSS}	24	V
Gate to Source Voltage	V_{GSS}	± 12	V
Drain Current (DC)	I_D	9	A
Drain Current (Pulse)	I_{DP}	40	A
$PW \leq 10\mu\text{s}$, duty cycle $\leq 1\%$			
Power Dissipation	P_D	1.3	W
When mounted on ceramic substrate($900\text{mm}^2 \times 0.8\text{mm}$) 1unit			
Total Dissipation	P_T	1.4	W
When mounted on ceramic substrate($900\text{mm}^2 \times 0.8\text{mm}$)			
Junction Temperature	T_j	150	$^\circ\text{C}$
Storage Temperature	T_{stg}	-55 to +150	$^\circ\text{C}$

Thermal Resistance Ratings

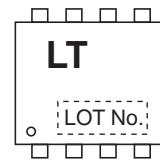
Parameter	Symbol	Value	Unit
Junction to Ambient	$R_{\theta JA}$	96	$^\circ\text{C/W}$
When mounted on ceramic substrate($900\text{mm}^2 \times 0.8\text{mm}$)			

Electrical Connection

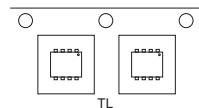
N-channel



Marking



Packing Type: TL



Ordering & Package Information

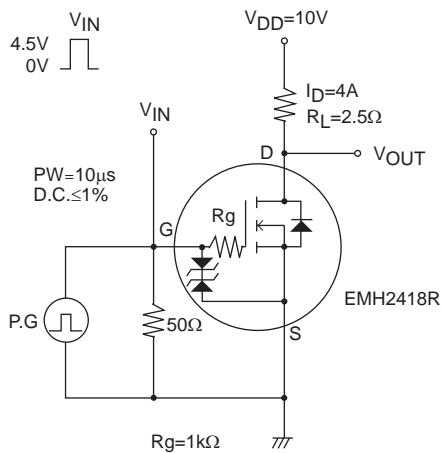
Device	Package	Shipping
EMH2418R-TL-H Pb-free and Halogen Free	EMH8	3,000 pcs. / reel

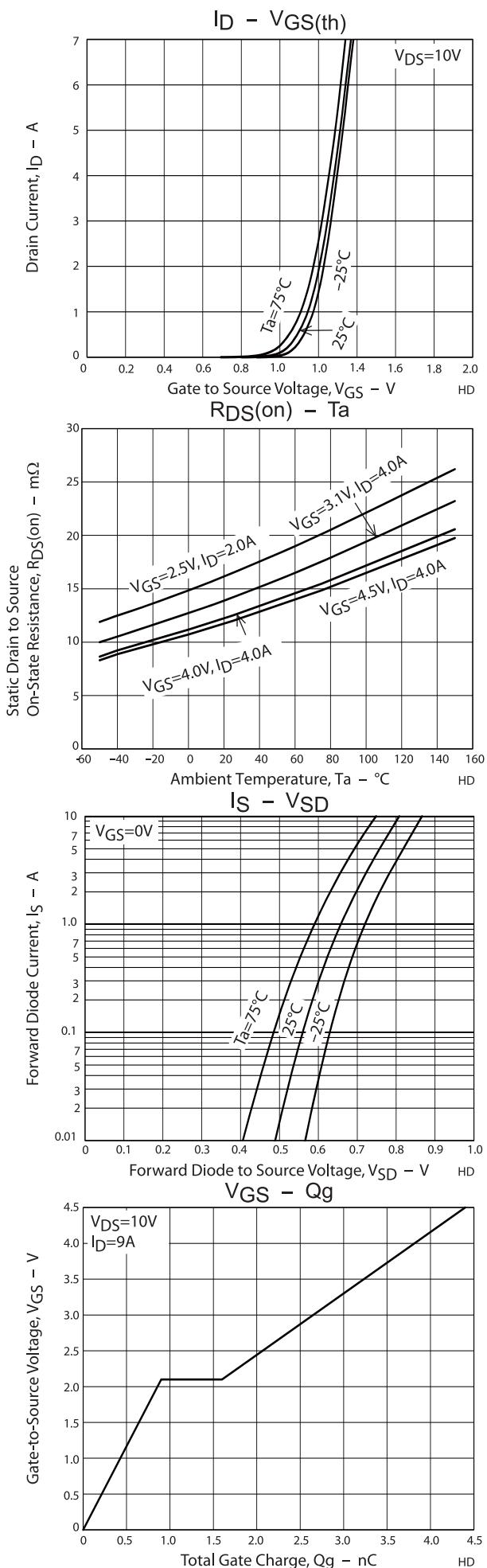
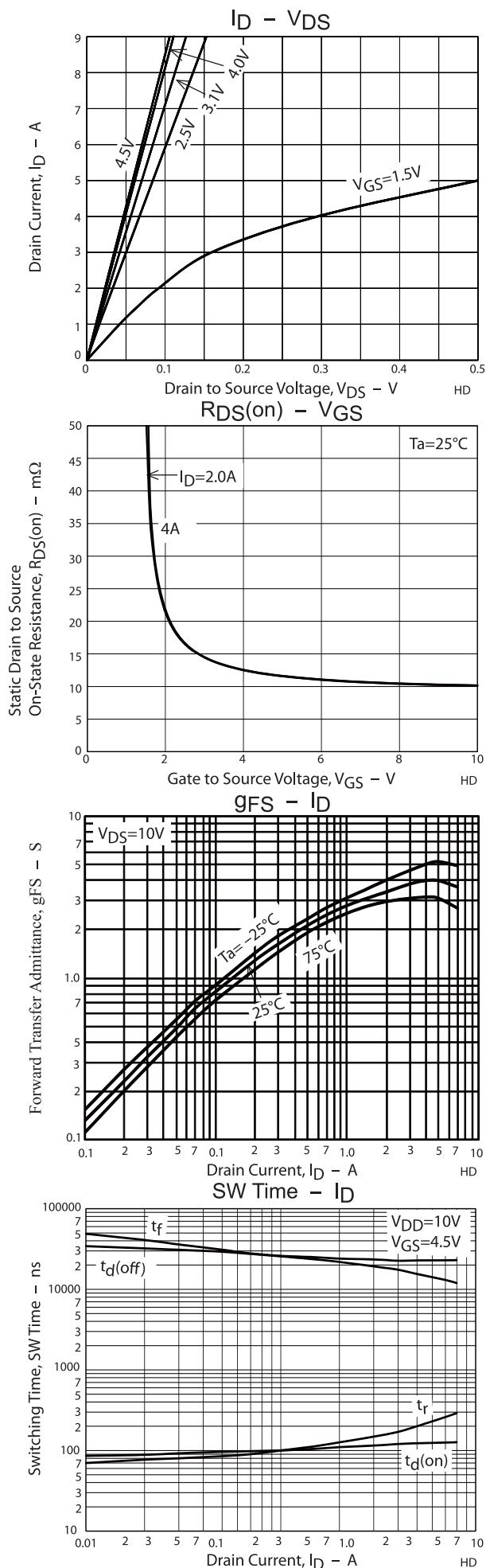
Stresses exceeding Maximum Ratings may damage the device. Maximum Ratings are stress ratings only. Functional operation above the Recommended Operating Conditions is not implied. Extended exposure to stresses above the Recommended Operating Conditions may affect device reliability.

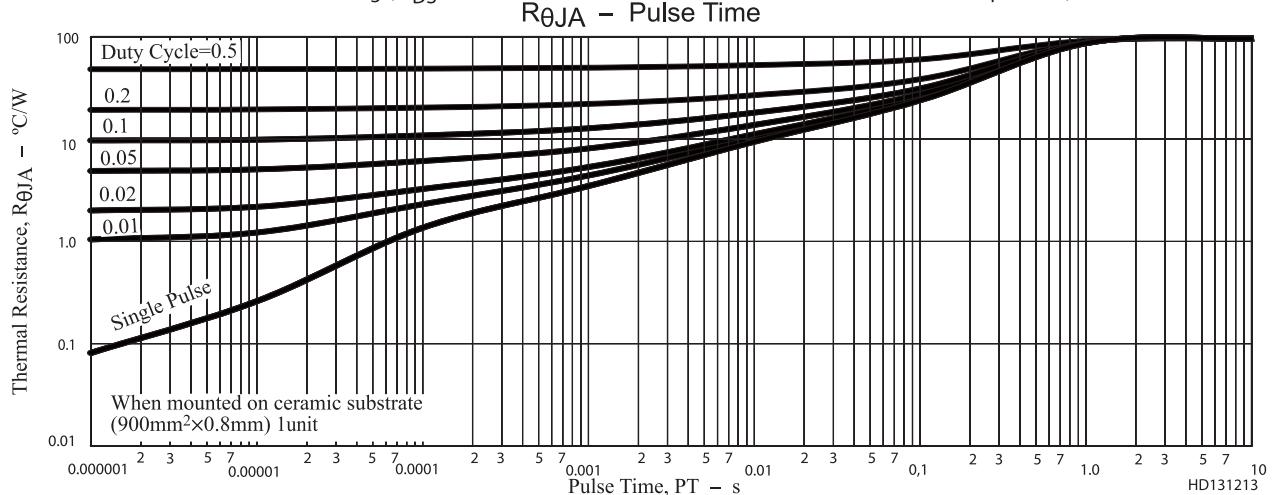
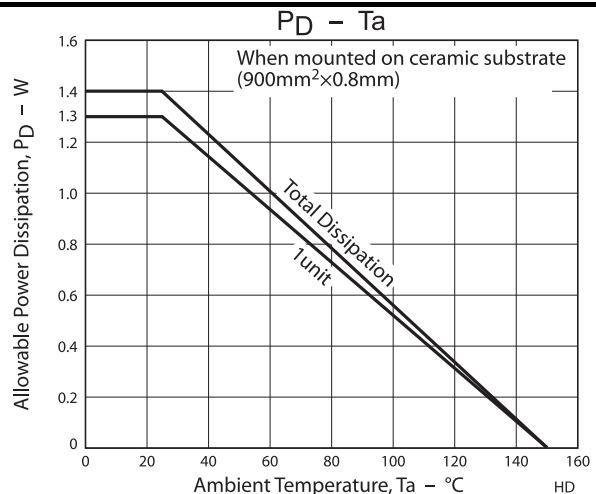
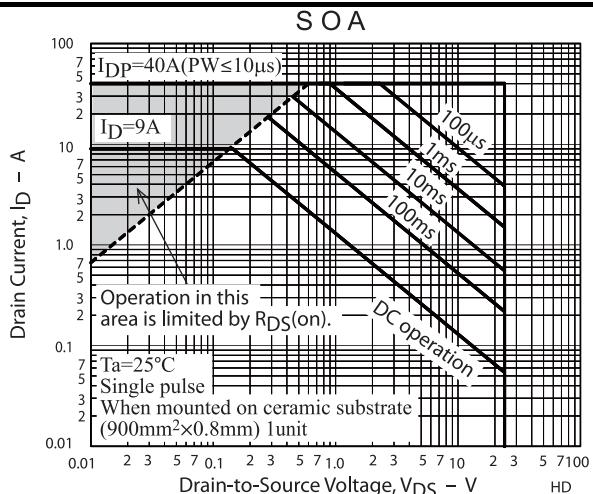
Electrical Characteristics at $T_a = 25^\circ\text{C}$

Parameter	Symbol	Conditions	Value			Unit
			min	typ	max	
Drain to Source Breakdown Voltage	$V(\text{BR})_{\text{DSS}}$	$I_D=1\text{mA}, V_{GS}=0\text{V}$	24			V
Zero-Gate Voltage Drain Current	I_{DSS}	$V_{DS}=20\text{V}, V_{GS}=0\text{V}$			1	μA
Gate to Source Leakage Current	I_{GSS}	$V_{GS}=\pm 8\text{V}, V_{DS}=0\text{V}$			± 1	μA
Gate Threshold Voltage	$V_{GS(\text{th})}$	$V_{DS}=10\text{V}, I_D=1\text{mA}$	0.5		1.3	V
Forward Transconductance	g_{FS}	$V_{DS}=10\text{V}, I_D=4\text{A}$		4		S
Static Drain to Source On-State Resistance	$R_{DS(\text{on})1}$	$I_D=4\text{A}, V_{GS}=4.5\text{V}$	9.6	12	15	$\text{m}\Omega$
	$R_{DS(\text{on})2}$	$I_D=4\text{A}, V_{GS}=4.0\text{V}$	10.0	12.5	16.3	$\text{m}\Omega$
	$R_{DS(\text{on})3}$	$I_D=4\text{A}, V_{GS}=3.1\text{V}$	11.3	14.2	20	$\text{m}\Omega$
	$R_{DS(\text{on})4}$	$I_D=2\text{A}, V_{GS}=2.5\text{V}$	13.2	16.5	23.1	$\text{m}\Omega$
Turn-ON Delay Time	$t_{\text{d}(\text{on})}$	See specified Test Circuit.		120		ns
Rise Time	t_r			170		ns
Turn-OFF Delay Time	$t_{\text{d}(\text{off})}$			17500		ns
Fall Time	t_f			22600		ns
Total Gate Charge	Q_g	$V_{DS}=10\text{V}, V_{GS}=4.5\text{V}, I_D=9\text{A}$		4.4		nC
Gate to Source Charge	Q_{gs}			0.9		nC
Gate to Drain "Miller" Charge	Q_{gd}			0.7		nC
Forward Diode Voltage	V_{SD}	$I_S=9\text{A}, V_{GS}=0\text{V}$		0.8	1.2	V

Switching Time Test Circuit







Package Dimensions

EMH2418R-TL-H

SOT-383FL/EMH8

CASE419AT

ISSUE O

Unit : mm

1: Source1

2: Gate1

3: Source2

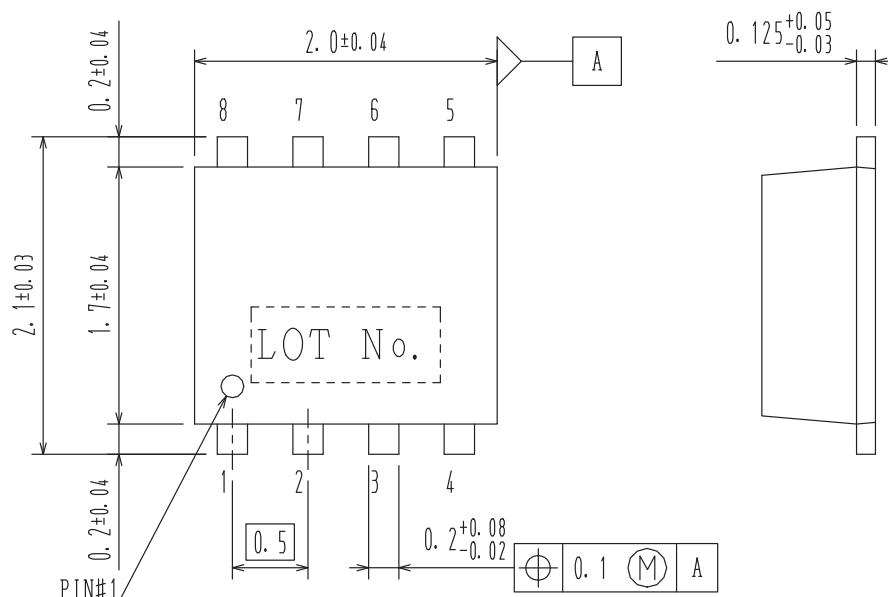
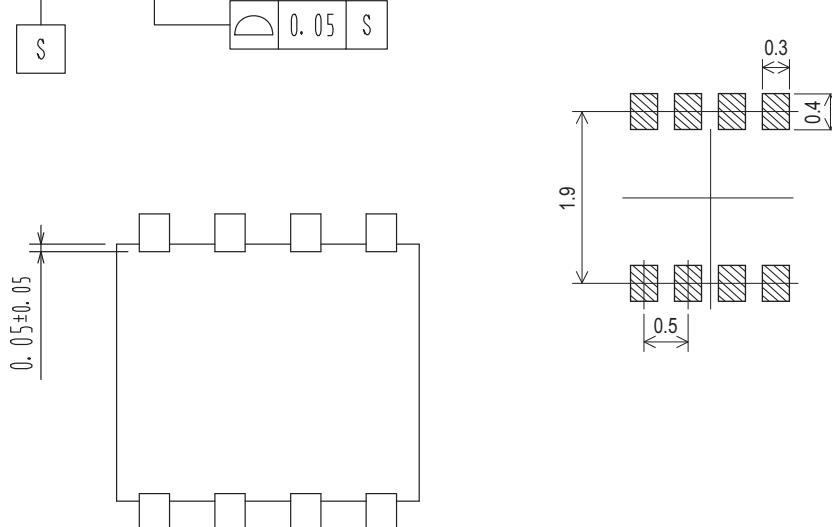
4: Gate2

5: Drain

6: Drain

7: Drain

8: Drain

**Soldering Footprint**

Note on usage : Since the EMH2418R is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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