



EMH2308 — P-Channel Silicon MOSFET

General-Purpose Switching Device Applications

Features

- The EMH2308 incorporates a P-channel MOSFET that feature low ON-resistance and ultrahigh-speed switching, thereby enabling high-density mounting.
- 1.8V drive.

Specifications

Absolute Maximum Ratings at Ta=25°C

| Parameter | Symbol | Conditions | Ratings | Unit |
|-----------------------------|------------------|---|-------------|------|
| Drain-to-Source Voltage | V _{DSS} | | -20 | V |
| Gate-to-Source Voltage | V _{GSS} | | ±10 | V |
| Drain Current (DC) | I _D | | -3 | A |
| Drain Current (Pulse) | I _{DP} | PW≤10μs, duty cycle≤1% | -20 | A |
| Allowable Power Dissipation | P _D | When mounted on ceramic substrate (900mm ² ×0.8mm) 1unit | 1.0 | W |
| Total Dissipation | P _T | When mounted on ceramic substrate (900mm ² ×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 | -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} =±8V, V _{DS} =0V | | | ±10 | μA |
| Cutoff Voltage | V _{GS(off)} | V _{DS} =-10V, I _D =-1mA | -0.4 | | -1.3 | V |
| Forward Transfer Admittance | y _{fs} | V _{DS} =-10V, I _D =-1.5A | 2.1 | 3.6 | | S |

Marking : MH

Continued on next page.

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EMH2308

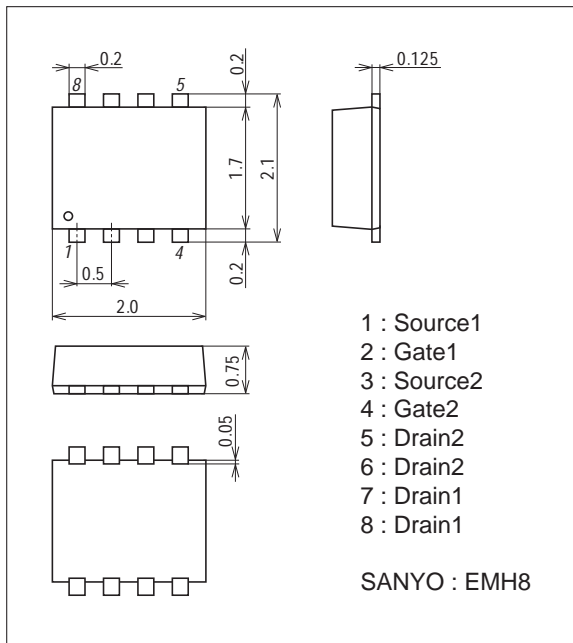
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| Parameter | Symbol | Conditions | Ratings | | | Unit |
|--|---------------|--|---------|-------|------|-----------|
| | | | min | typ | max | |
| Static Drain-to-Source On-State Resistance | $R_{DS(on)1}$ | $I_D = -3A, V_{GS} = -4.5V$ | | 65 | 85 | $m\Omega$ |
| | $R_{DS(on)2}$ | $I_D = -1.0A, V_{GS} = -2.5V$ | | 98 | 137 | $m\Omega$ |
| | $R_{DS(on)3}$ | $I_D = -0.5A, V_{GS} = -1.8V$ | | 155 | 235 | $m\Omega$ |
| Input Capacitance | C_{iss} | $V_{DS} = -10V, f = 1MHz$ | | 320 | | μF |
| Output Capacitance | C_{oss} | $V_{DS} = -10V, f = 1MHz$ | | 66 | | μF |
| Reverse Transfer Capacitance | C_{rss} | $V_{DS} = -10V, f = 1MHz$ | | 50 | | μF |
| Turn-ON Delay Time | $t_{d(on)}$ | See specified Test Circuit. | | 7.1 | | ns |
| Rise Time | t_r | See specified Test Circuit. | | 21 | | ns |
| Turn-OFF Delay Time | $t_{d(off)}$ | See specified Test Circuit. | | 37 | | ns |
| Fall Time | t_f | See specified Test Circuit. | | 32 | | ns |
| Total Gate Charge | Q_g | $V_{DS} = -10V, V_{GS} = -4.5V, I_D = -3A$ | | 4.0 | | nC |
| Gate-to-Source Charge | Q_{gs} | $V_{DS} = -10V, V_{GS} = -4.5V, I_D = -3A$ | | 0.6 | | nC |
| Gate-to-Drain "Miller" Charge | Q_{gd} | $V_{DS} = -10V, V_{GS} = -4.5V, I_D = -3A$ | | 1.1 | | nC |
| Diode Forward Voltage | V_{SD} | $I_S = -3A, V_{GS} = 0V$ | | -0.83 | -1.2 | V |

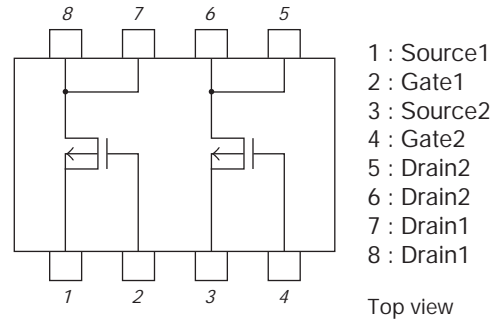
Package Dimensions

unit : mm (typ)

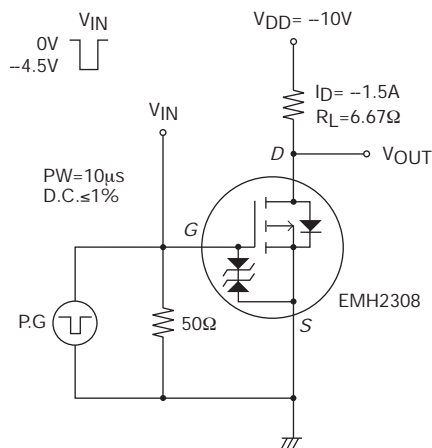
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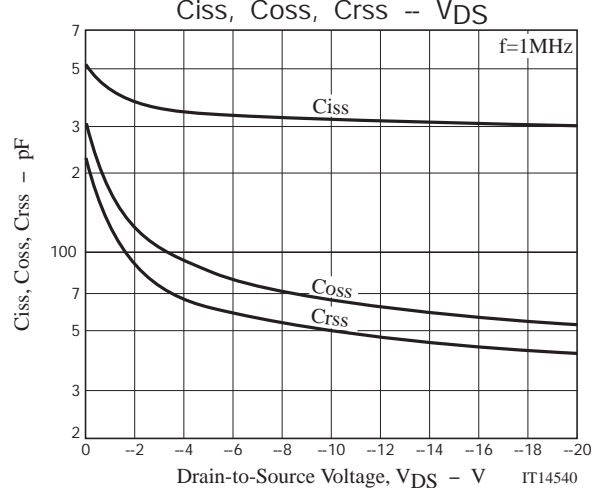
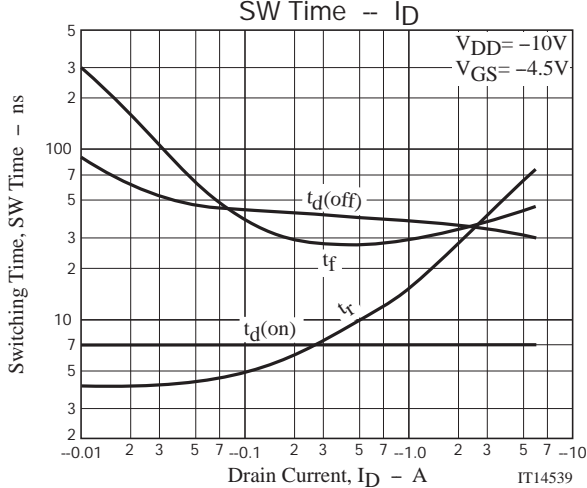
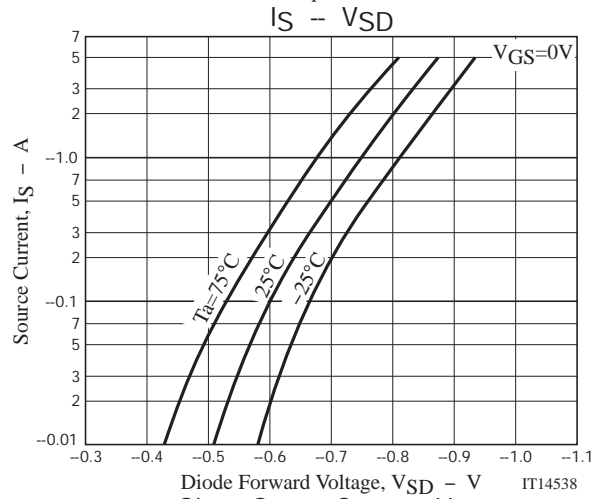
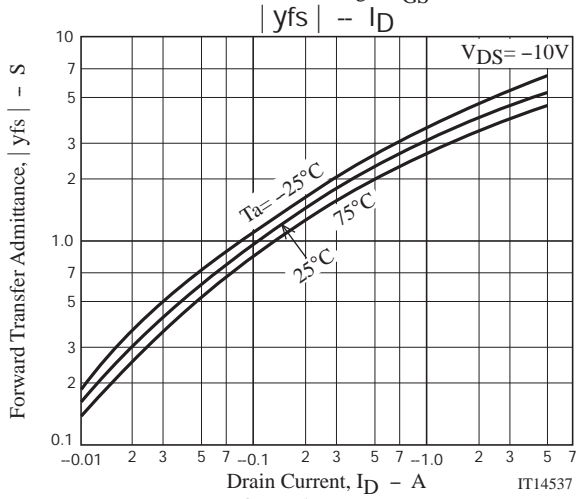
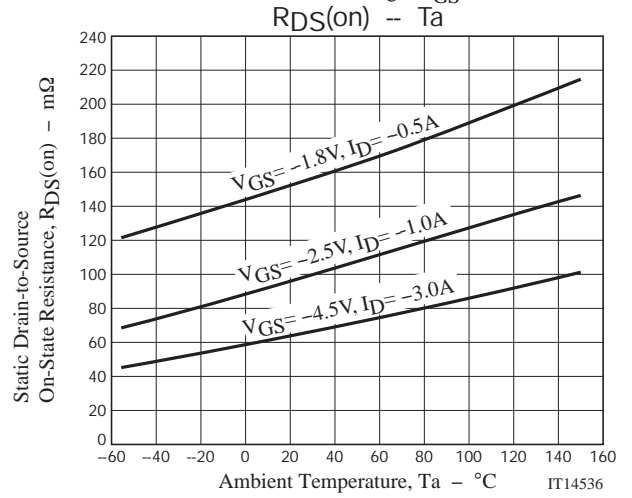
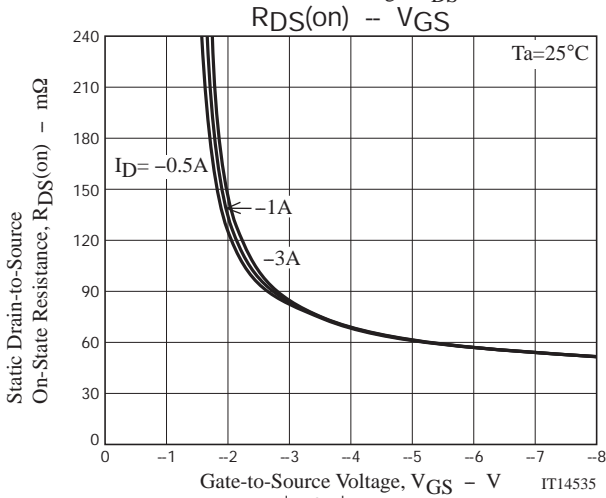
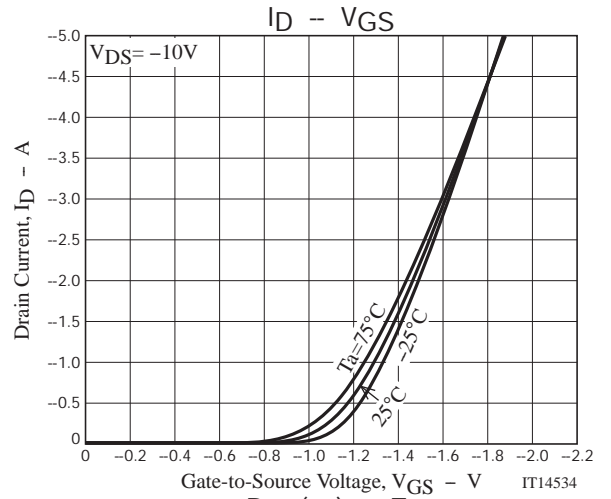
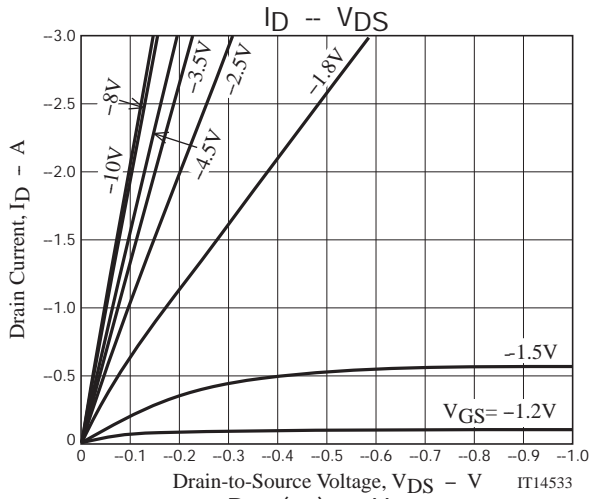


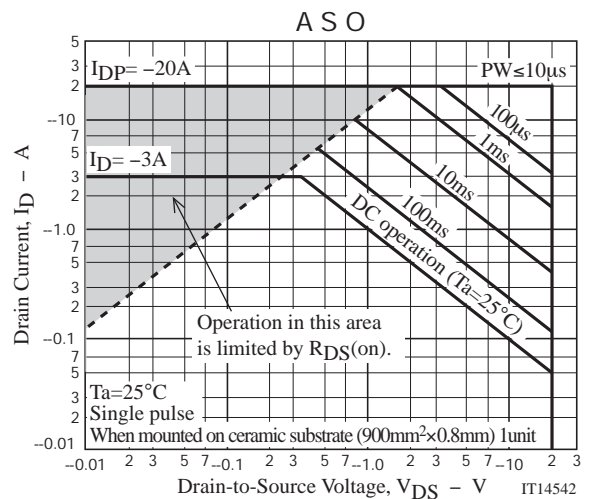
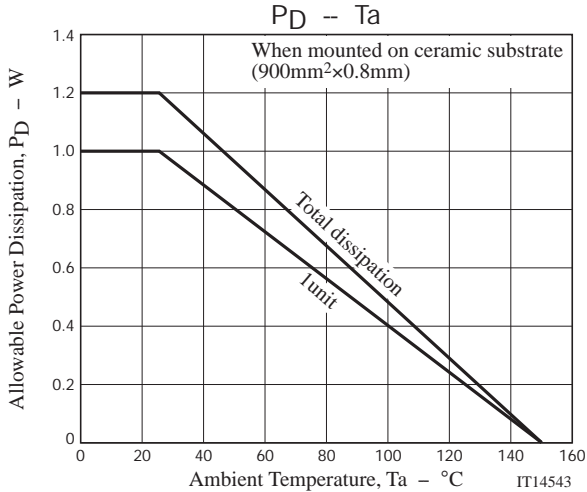
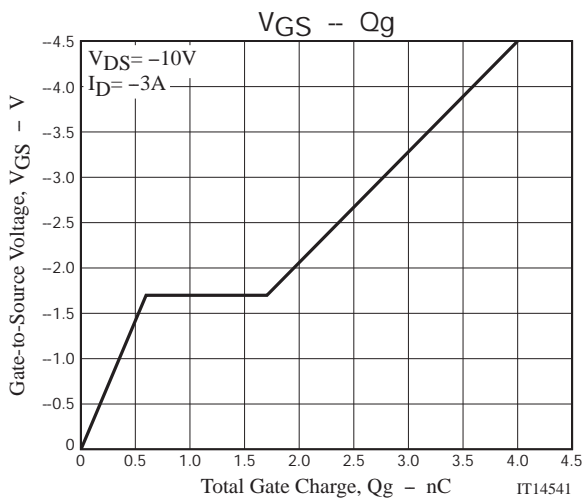
Electrical Connection



Switching Time Test Circuit







Note on usage : Since the EMH2308 is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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