



SANYO Semiconductors

DATA SHEET

SCH2808

MOSFET : N-Channel Silicon MOSFET
SBD : Schottky Barrier Diode

General-Purpose Switching Device Applications

Features

- Composite type with an N-channel silicon MOSFET (SCH1412) and a schottky barrier diode (SS0503) contained in one package facilitating high-density mounting.
- [MOSFET]
 - Low ON-resistance.
 - Ultrahigh-speed switching.
 - 4V drive.
- [SBD]
 - Short reverse recovery time.
 - Low forward voltage.

Specifications

Absolute Maximum Ratings at Ta=25°C

| Parameter | Symbol | Conditions | Ratings | Unit |
|--|-------------------|--|-------------|------|
| [MOSFET] | | | | |
| Drain-to-Source Voltage | V _{DSS} | | 30 | V |
| Gate-to-Source Voltage | V _{GSS} | | ±20 | V |
| Drain Current (DC) | I _D | | 1.4 | A |
| Drain Current (Pulse) | I _{DP} | PW≤10μs, duty cycle≤1% | 5.6 | A |
| Allowable Power Dissipation | P _D | Mounted on a ceramic board (900mm ² X0.8mm) 1unit | 0.6 | W |
| Channel Temperature | T _{ch} | | 150 | °C |
| Storage Temperature | T _{stg} | | -55 to +125 | °C |
| [SBD] | | | | |
| Repetitive Peak Reverse Voltage | V _R RM | | 30 | V |
| Nonrepetitive Peak Reverse Surge Voltage | V _R SM | | 30 | V |
| Average Output Current | I _O | | 0.5 | A |
| Surge Forward Current | I _{FSM} | 50Hz sine wave, 1 cycle | 3 | A |
| Junction Temperature | T _J | | -55 to +125 | °C |
| Storage Temperature | T _{stg} | | -55 to +125 | °C |

Marking : QH

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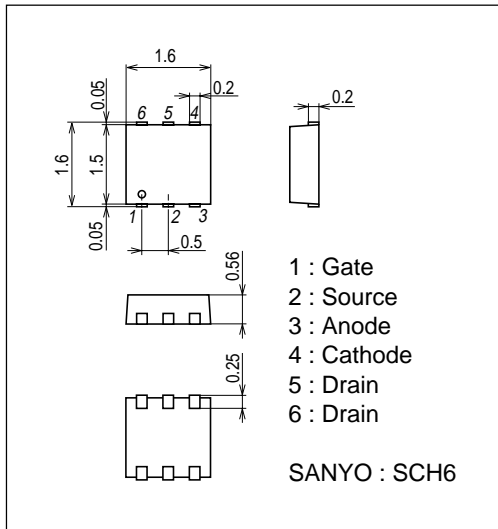
SCH2808

Electrical Characteristics at Ta=25°C

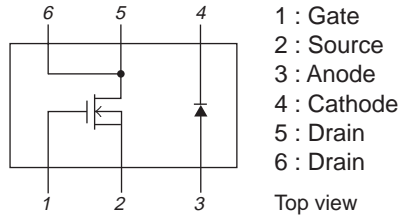
| Parameter | Symbol | Conditions | Ratings | | | Unit |
|--|---------------|---|---------|------|----------|-----------|
| | | | min | typ | max | |
| [MOSFET] | | | | | | |
| Drain-to-Source Breakdown Voltage | $V_{(BR)DSS}$ | $I_D=1mA, V_{GS}=0V$ | 30 | | | V |
| Zero-Gate Voltage Drain Current | I_{DSS} | $V_{DS}=30V, V_{GS}=0V$ | | | 1 | μA |
| Gate-to-Source Leakage Current | I_{GSS} | $V_{GS}=\pm 16V, V_{DS}=0V$ | | | ± 10 | μA |
| Cutoff Voltage | $V_{GS(off)}$ | $V_{DS}=10V, I_D=1mA$ | 1.2 | | 2.6 | V |
| Forward Transfer Admittance | $ y_{fs} $ | $V_{DS}=10V, I_D=700mA$ | 0.66 | 1.1 | | S |
| Static Drain-to-Source On-State Resistance | $R_{DS(on)1}$ | $I_D=700mA, V_{GS}=10V$ | | 230 | 300 | $m\Omega$ |
| | $R_{DS(on)2}$ | $I_D=400mA, V_{GS}=4V$ | | 400 | 560 | $m\Omega$ |
| Input Capacitance | C_{iss} | $V_{DS}=10V, f=1MHz$ | | 65 | | pF |
| Output Capacitance | C_{oss} | $V_{DS}=10V, f=1MHz$ | | 14 | | pF |
| Reverse Transfer Capacitance | C_{rss} | $V_{DS}=10V, f=1MHz$ | | 8 | | pF |
| Turn-ON Delay Time | $t_{d(on)}$ | See specified Test Circuit. | | 5.0 | | ns |
| Rise Time | t_r | See specified Test Circuit. | | 4.0 | | ns |
| Turn-OFF Delay Time | $t_{d(off)}$ | See specified Test Circuit. | | 11 | | ns |
| Fall Time | t_f | See specified Test Circuit. | | 3.0 | | ns |
| Total Gate Charge | Q_g | $V_{DS}=10V, V_{GS}=10V, I_D=1.4A$ | | 2.5 | | nC |
| Gate-to-Source Charge | Q_{gs} | $V_{DS}=10V, V_{GS}=10V, I_D=1.4A$ | | 0.6 | | nC |
| Gate-to-Drain "Miller" Charge | Q_{gd} | $V_{DS}=10V, V_{GS}=10V, I_D=1.4A$ | | 0.3 | | nC |
| Diode Forward Voltage | V_{SD} | $I_S=1.4A, V_{GS}=0V$ | | 0.87 | 1.2 | V |
| [SBD] | | | | | | |
| Reverse Voltage | V_R | $I_R=0.5mA$ | 30 | | | V |
| Forward Voltage | V_F | $I_F=0.5A$ | | 0.42 | 0.47 | V |
| Reverse Current | I_R | $V_R=15V$ | | | 120 | μA |
| Interterminal Capacitance | C | $V_R=10V, f=1MHz$ | | 13 | | pF |
| Reverse Recovery Time | t_{rr} | $I_F=I_R=100mA$, See specified Test Circuit. | | | 10 | ns |

Package Dimensions

unit : mm
7028-003



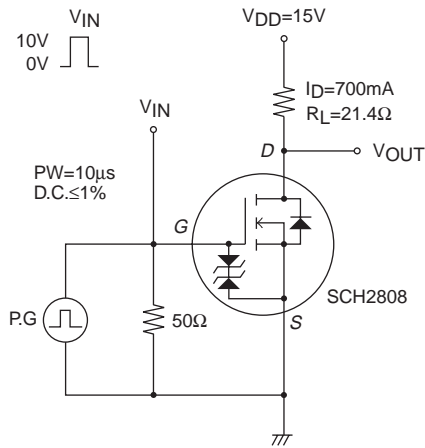
Electrical Connection



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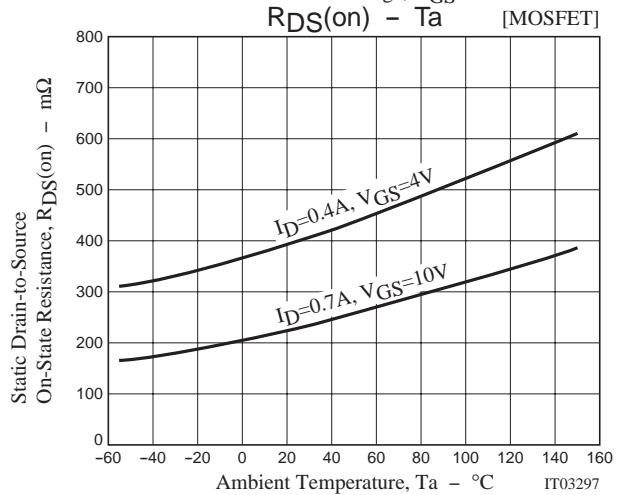
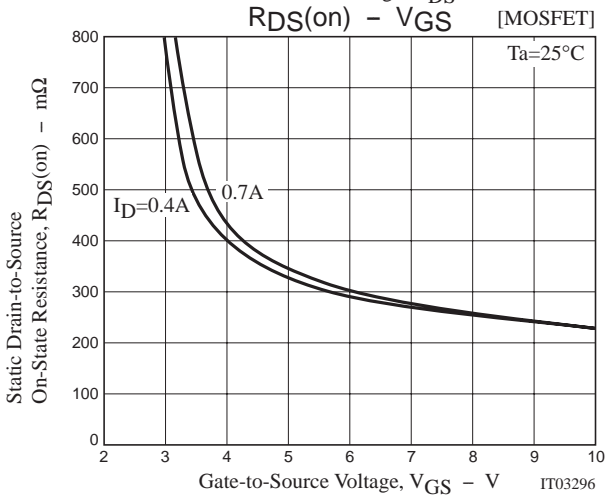
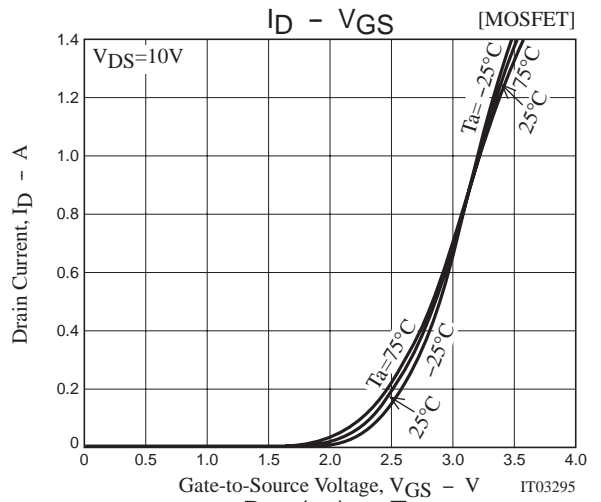
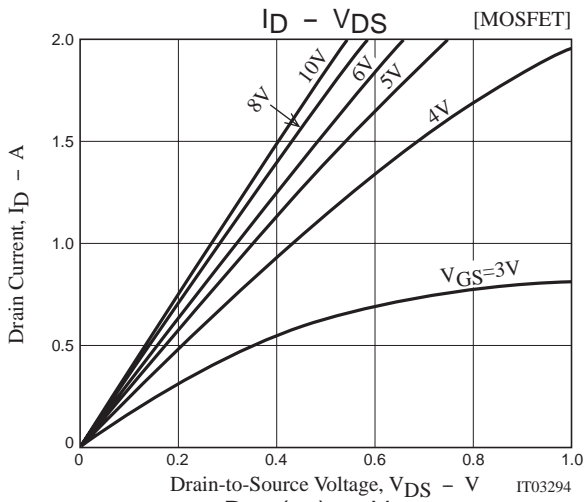
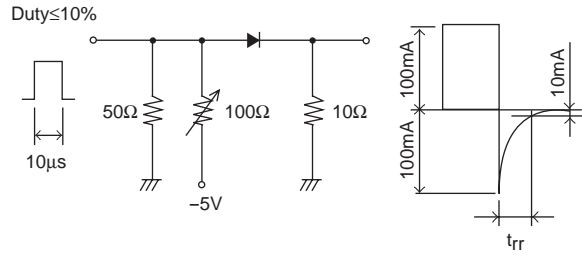
Switching Time Test Circuit

[MOSFET]

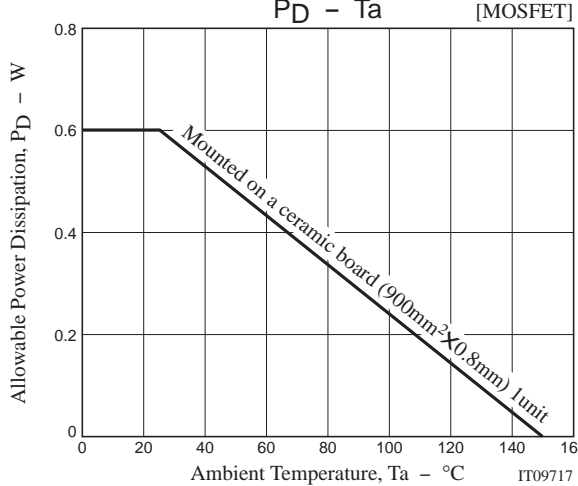
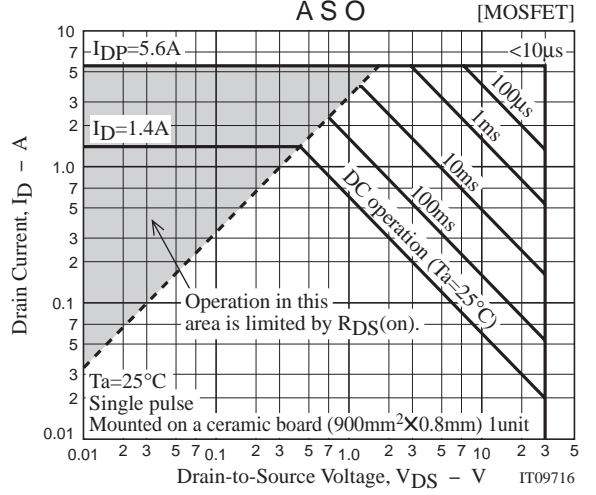
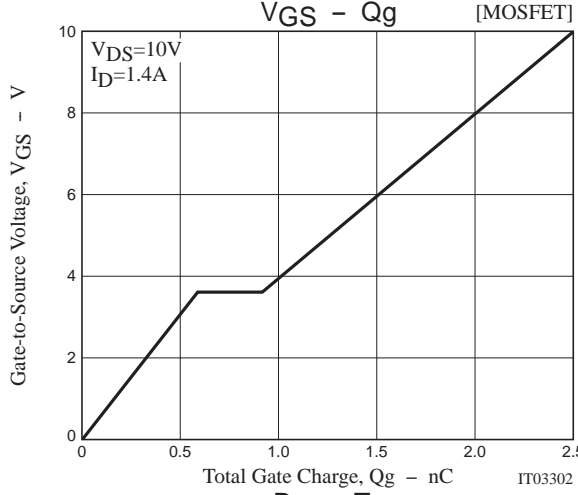
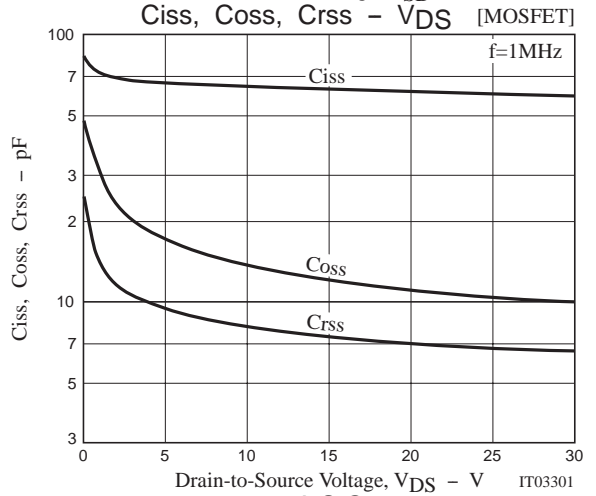
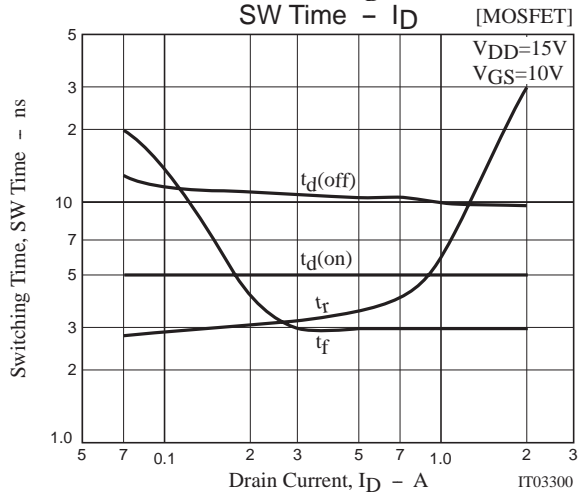
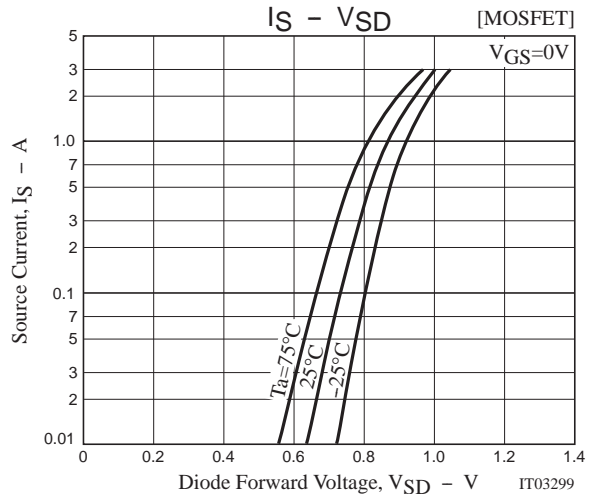
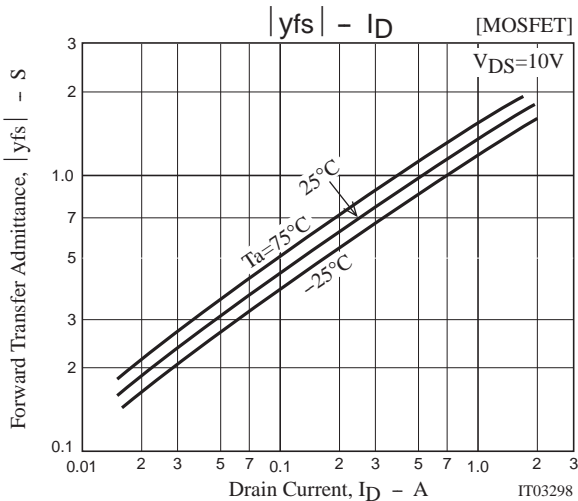


t_{rr} Test Circuit

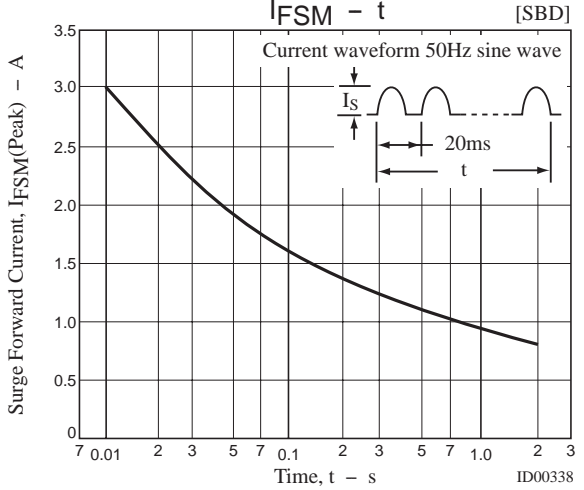
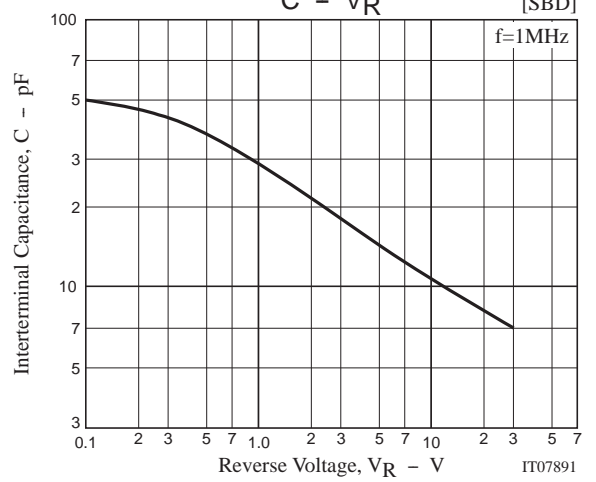
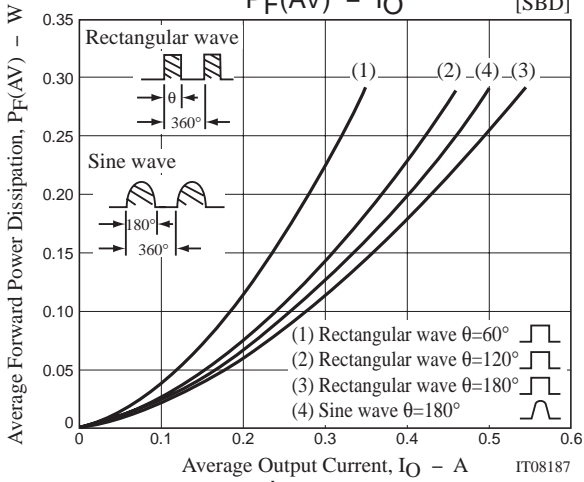
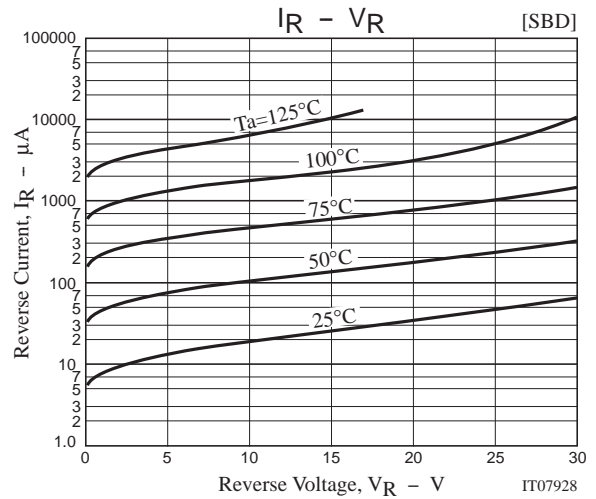
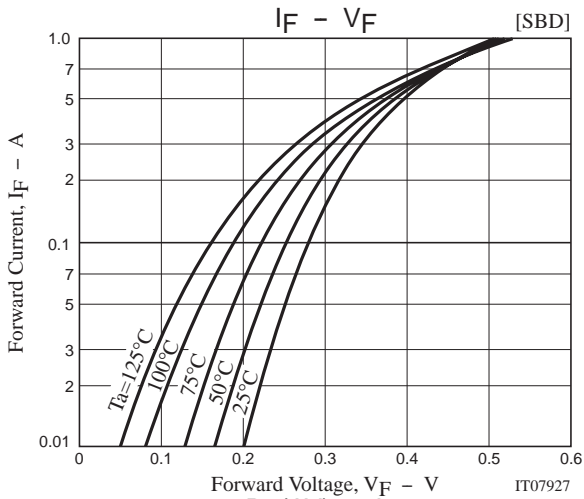
[SBD]



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Note on usage : Since the SCH2808 is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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