



SANYO Semiconductors

## DATA SHEET

An ON Semiconductor Company

N-Channel Silicon MOSFET

# SCH1430 — General-Purpose Switching Device Applications

## Features

- 1.8V drive
- Halogen free compliance
- Protection diode in

## Specifications

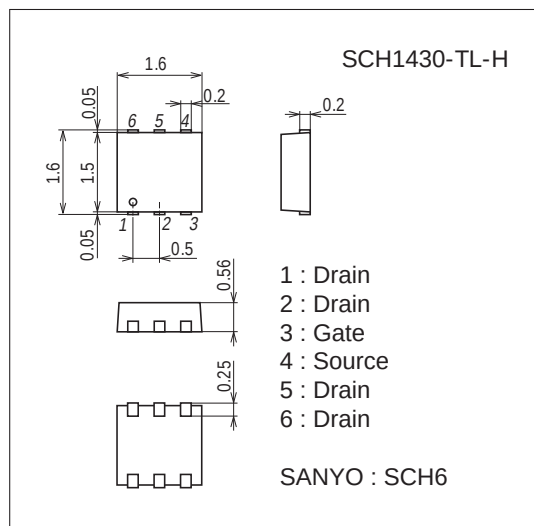
Absolute Maximum Ratings at Ta=25°C

| Parameter                   | Symbol    | Conditions                                                    | Ratings     | Unit |
|-----------------------------|-----------|---------------------------------------------------------------|-------------|------|
| Drain-to-Source Voltage     | $V_{DS}$  |                                                               | 20          | V    |
| Gate-to-Source Voltage      | $V_{GS}$  |                                                               | $\pm 12$    | V    |
| Drain Current (DC)          | $I_D$     |                                                               | 2           | A    |
| Drain Current (Pulse)       | $I_{DP}$  | $PW \leq 10\mu s$ , duty cycle $\leq 1\%$                     | 8           | A    |
| Allowable Power Dissipation | $P_D$     | When mounted on ceramic substrate (900mm <sup>2</sup> ×0.8mm) | 0.8         | W    |
| Channel Temperature         | $T_{ch}$  |                                                               | 150         | °C   |
| Storage Temperature         | $T_{stg}$ |                                                               | -55 to +150 | °C   |

## Package Dimensions

unit : mm (typ)

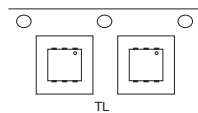
7028-002



## Product & Package Information

- Package : SCH6
- JEITA, JEDEC : SOT-563
- Minimum Packing Quantity : 5,000 pcs./reel

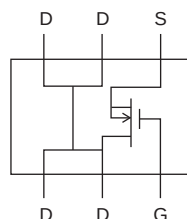
## Packing Type : TL



## Marking



## Electrical Connection

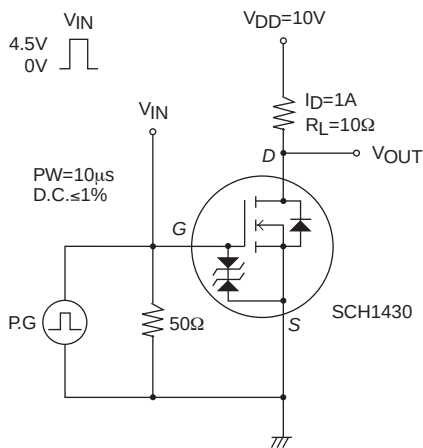


# SCH1430

## Electrical Characteristics at Ta=25°C

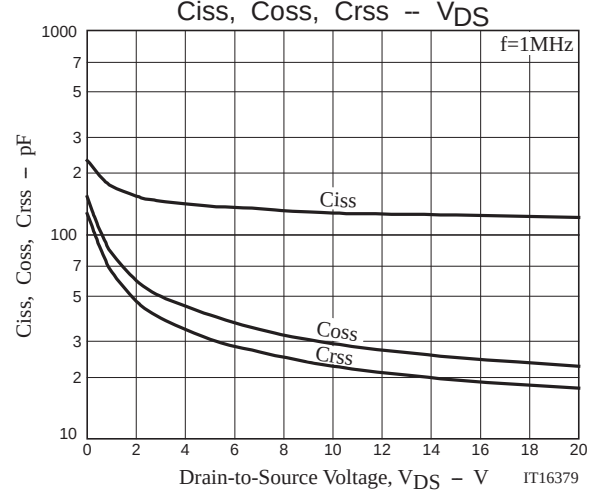
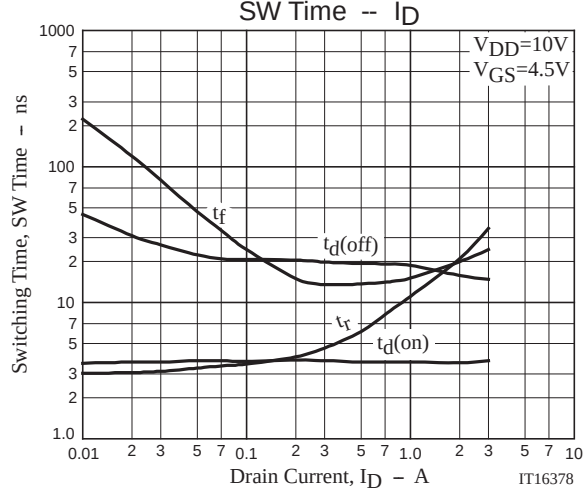
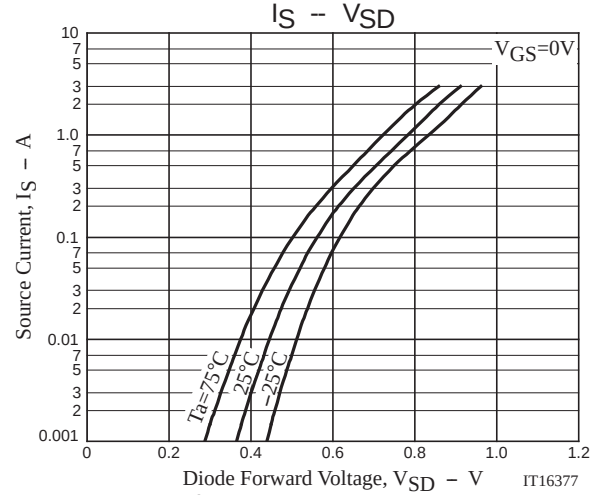
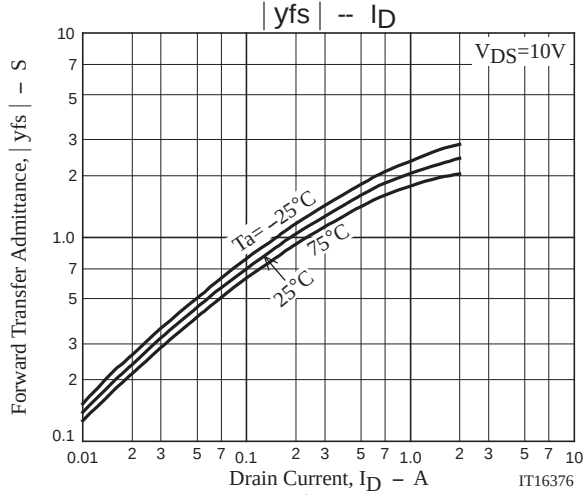
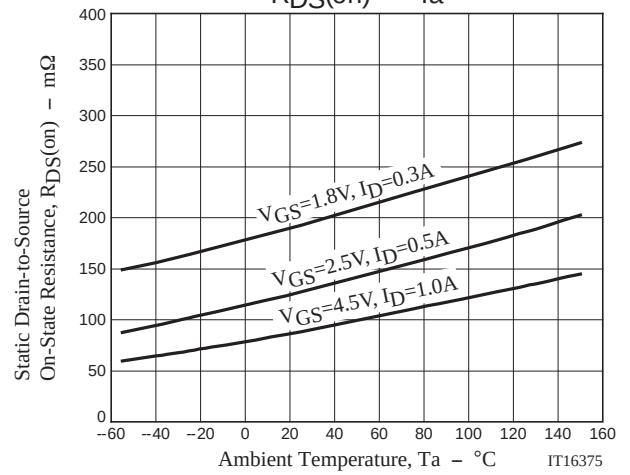
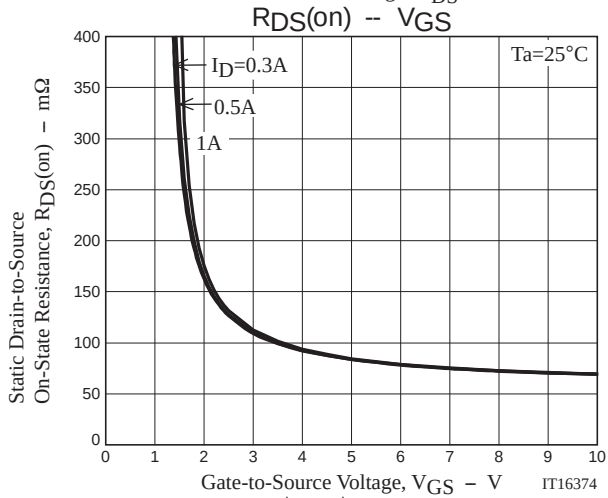
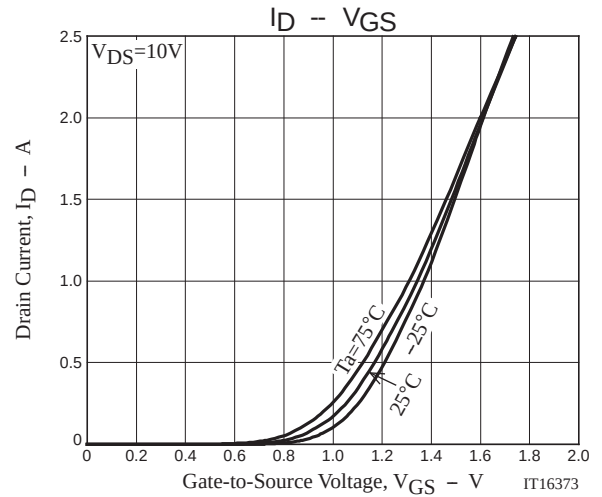
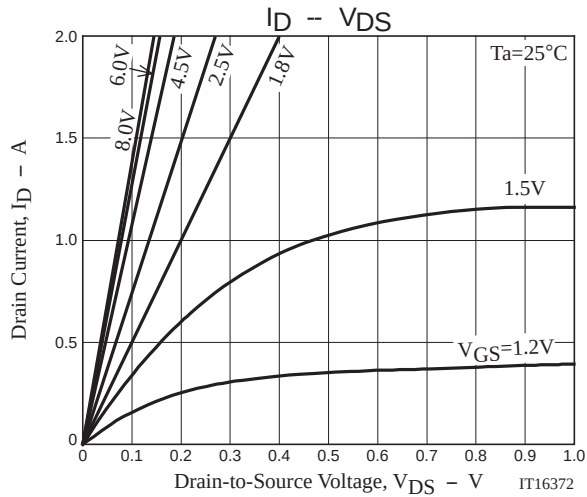
| Parameter                                  | Symbol        | Conditions                        | Ratings |      |          | Unit      |
|--------------------------------------------|---------------|-----------------------------------|---------|------|----------|-----------|
|                                            |               |                                   | 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        | $\mu A$   |
| Gate-to-Source Leakage Current             | $I_{GSS}$     | $V_{GS}=\pm 8V, V_{DS}=0V$        |         |      | $\pm 10$ | $\mu A$   |
| Cutoff Voltage                             | $V_{GS(off)}$ | $V_{DS}=10V, I_D=1mA$             | 0.4     |      | 1.3      | V         |
| Forward Transfer Admittance                | $ y_{fs} $    | $V_{DS}=10V, I_D=1A$              |         | 1.9  |          | S         |
| Static Drain-to-Source On-State Resistance | $R_{DS(on)1}$ | $I_D=1A, V_{GS}=4.5V$             |         | 93   | 125      | $m\Omega$ |
|                                            | $R_{DS(on)2}$ | $I_D=0.5A, V_{GS}=2.5V$           |         | 135  | 190      | $m\Omega$ |
|                                            | $R_{DS(on)3}$ | $I_D=0.3A, V_{GS}=1.8V$           |         | 200  | 310      | $m\Omega$ |
| Input Capacitance                          | $C_{iss}$     | $V_{DS}=10V, f=1MHz$              |         | 128  |          | pF        |
| Output Capacitance                         | $C_{oss}$     |                                   |         | 28   |          | pF        |
| Reverse Transfer Capacitance               | $C_{rss}$     |                                   |         | 21   |          | pF        |
| Turn-ON Delay Time                         | $t_d(on)$     | See specified Test Circuit.       |         | 5.1  |          | ns        |
| Rise Time                                  | $t_r$         |                                   |         | 11   |          | ns        |
| Turn-OFF Delay Time                        | $t_d(off)$    |                                   |         | 14.5 |          | ns        |
| Fall Time                                  | $t_f$         |                                   |         | 12   |          | ns        |
| Total Gate Charge                          | $Q_g$         | $V_{DS}=10V, V_{GS}=4.5V, I_D=2A$ |         | 1.8  |          | nC        |
| Gate-to-Source Charge                      | $Q_{gs}$      |                                   |         | 0.3  |          | nC        |
| Gate-to-Drain "Miller" Charge              | $Q_{gd}$      |                                   |         | 0.55 |          | nC        |
| Diode Forward Voltage                      | $V_{SD}$      | $I_S=2A, V_{GS}=0V$               |         | 0.85 | 1.2      | V         |

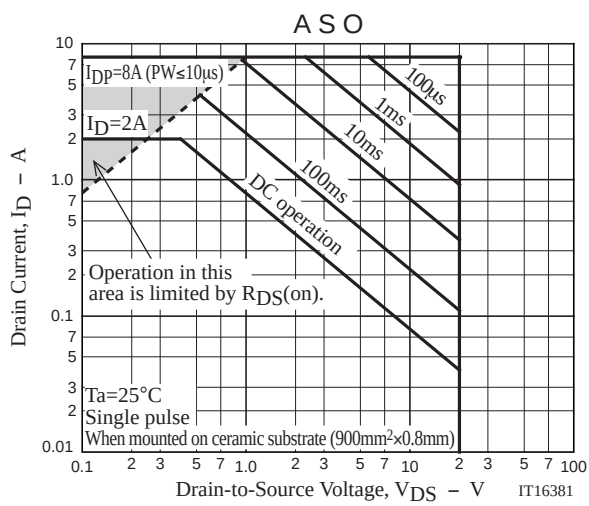
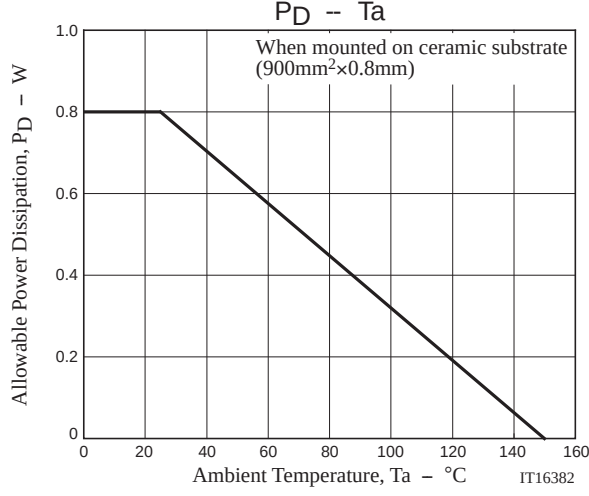
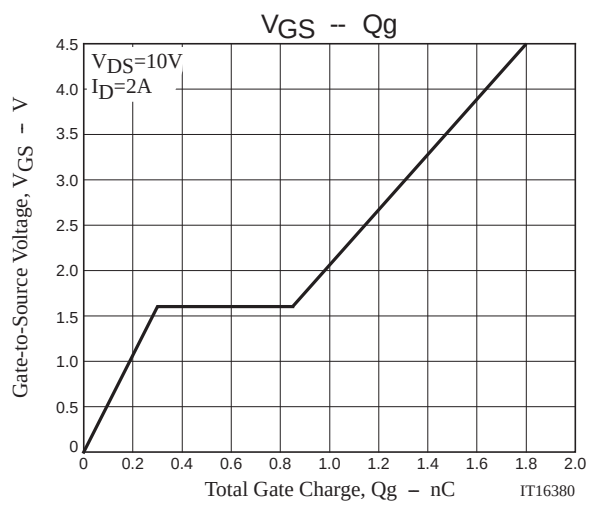
## Switching Time Test Circuit



## Ordering Information

| Device       | Package | Shipping       | memo                     |
|--------------|---------|----------------|--------------------------|
| SCH1430-TL-H | SCH6    | 5,000pcs./reel | Pb Free and Halogen Free |







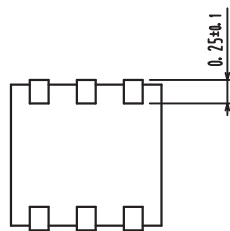
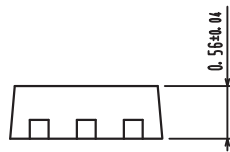
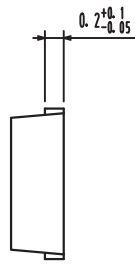
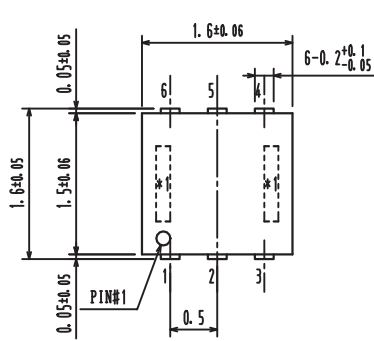
# SCH1430

## Outline Drawing

SCH1430-TL-H

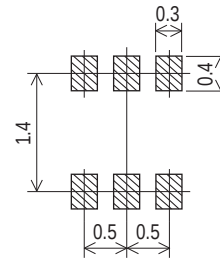
### Land Pattern Example

|                          |      |
|--------------------------|------|
| Mass (g)                 | Unit |
| 0.004<br>* For reference | mm   |



\*1: Lot indication

Unit: mm



Note on usage : Since the SCH1430 is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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