



SANYO Semiconductors

DATA SHEET

An ON Semiconductor Company

P-Channel Silicon MOSFET

MCH3383 — Low Voltage Drive Switching Device Applications

Features

- ON-resistance $R_{DS(on)1}=57m\Omega$ (typ.)
- 0.9V drive
- Halogen free compliance
- Protection diode in

Specifications

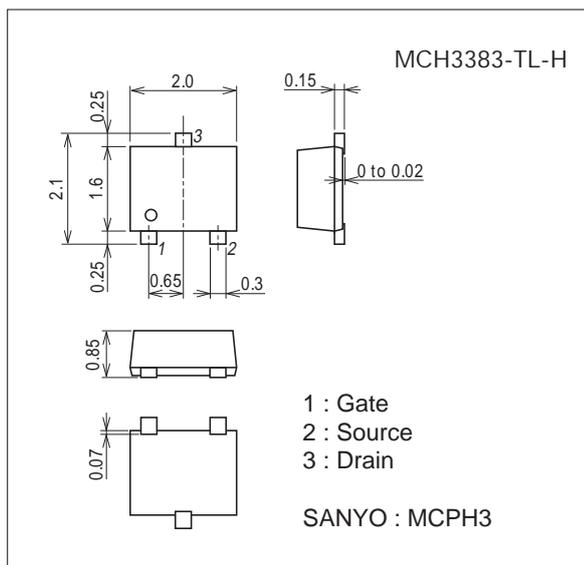
Absolute Maximum Ratings at $T_a=25^\circ\text{C}$

| Parameter | Symbol | Conditions | Ratings | Unit |
|-----------------------------|-----------|---|-------------|------------------|
| Drain-to-Source Voltage | V_{DSS} | | -12 | V |
| Gate-to-Source Voltage | V_{GSS} | | ± 5 | V |
| Drain Current (DC) | I_D | | -3.5 | A |
| Drain Current (Pulse) | I_{DP} | $PW \leq 10\mu\text{s}$, duty cycle $\leq 1\%$ | -14 | A |
| Allowable Power Dissipation | P_D | When mounted on ceramic substrate (900mm ² ×0.8mm) | 1.0 | W |
| Channel Temperature | T_{ch} | | 150 | $^\circ\text{C}$ |
| Operating Temperature | T_{opr} | | -5 to +150 | $^\circ\text{C}$ |
| Storage Temperature | T_{stg} | | -55 to +150 | $^\circ\text{C}$ |

Package Dimensions

unit : mm (typ)

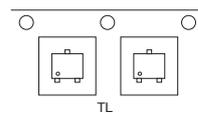
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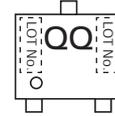
Product & Package Information

- Package : MCPH3
- JEITA, JEDEC : SC-70, SOT-323
- Minimum Packing Quantity : 3,000 pcs./reel

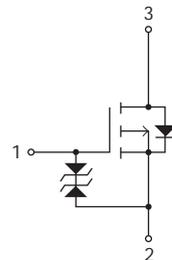
Packing Type : TL



Marking



Electrical Connection

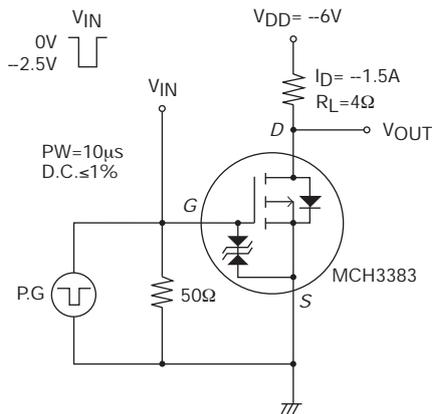


MCH3383

Electrical Characteristics at Ta=25°C

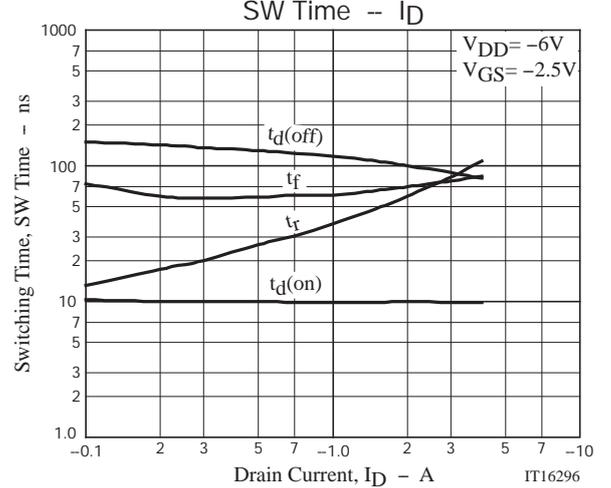
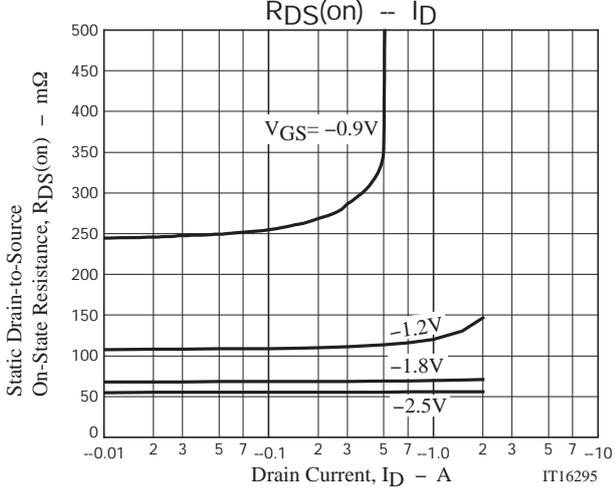
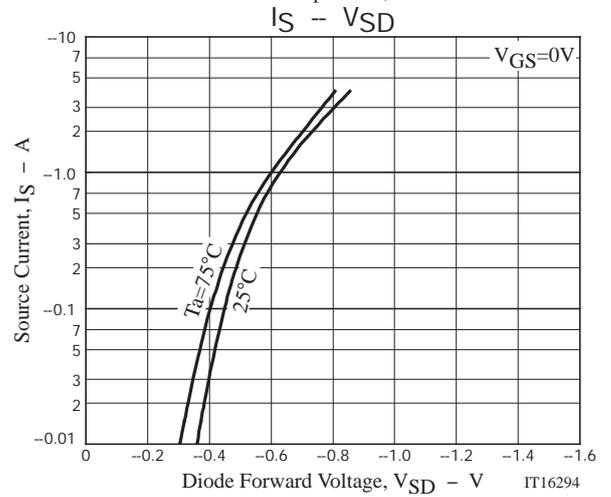
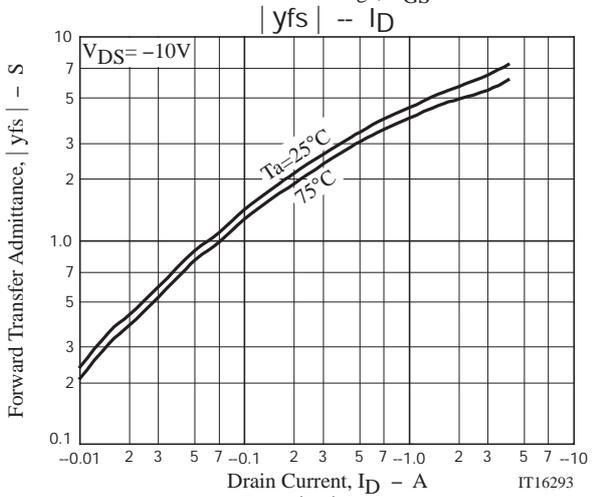
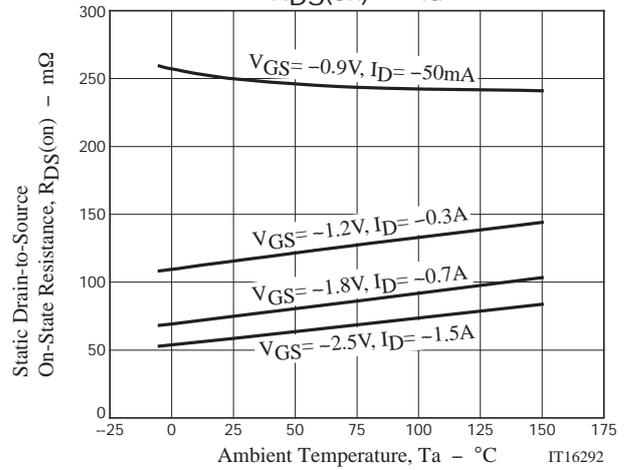
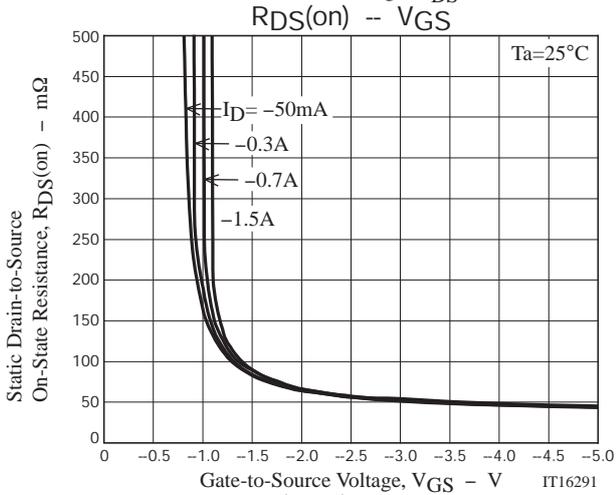
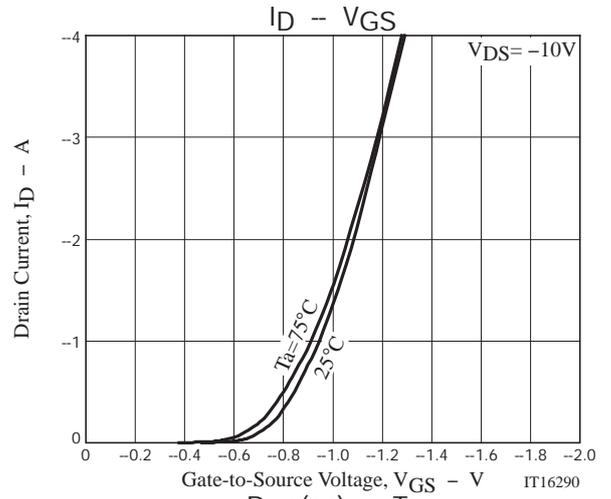
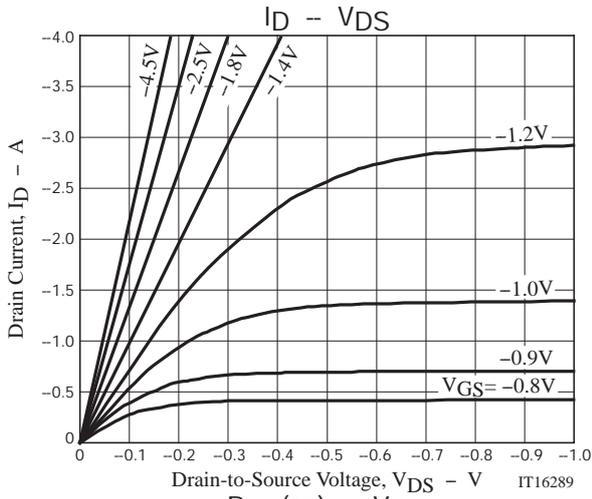
| Parameter | Symbol | Conditions | Ratings | | | Unit |
|--|----------------------|---|---------|-------|------|------|
| | | | min | typ | max | |
| Drain-to-Source Breakdown Voltage | V(BR)DSS | I _D =-1mA, V _{GS} =0V | -12 | | | V |
| Zero-Gate Voltage Drain Current | I _{DSS} | V _{DS} =-12V, V _{GS} =0V | | | -10 | μA |
| Gate-to-Source Leakage Current | I _{GSS} | V _{GS} =±4V, V _{DS} =0V | | | ±10 | μA |
| Cutoff Voltage | V _{GS(off)} | V _{DS} =-6V, I _D =-1mA | -0.3 | | -0.8 | V |
| Forward Transfer Admittance | y _{fs} | V _{DS} =-6V, I _D =-1.5A | | 5.3 | | S |
| Static Drain-to-Source On-State Resistance | R _{DS(on)1} | I _D =-1.5A, V _{GS} =-2.5V | | 57 | 69 | mΩ |
| | R _{DS(on)2} | I _D =-0.7A, V _{GS} =-1.8V | | 75 | 98 | mΩ |
| | R _{DS(on)3} | I _D =-0.3A, V _{GS} =-1.2V | | 115 | 173 | mΩ |
| | R _{DS(on)4} | I _D =-50mA, V _{GS} =-0.9V | | 250 | 500 | mΩ |
| Input Capacitance | C _{iss} | V _{DS} =-6V, f=1MHz | | 1010 | | pF |
| Output Capacitance | C _{oss} | V _{DS} =-6V, f=1MHz | | 130 | | pF |
| Reverse Transfer Capacitance | C _{rss} | V _{DS} =-6V, f=1MHz | | 85 | | pF |
| Turn-ON Delay Time | t _{d(on)} | See specified Test Circuit. | | 9.9 | | ns |
| Rise Time | t _r | See specified Test Circuit. | | 49 | | ns |
| Turn-OFF Delay Time | t _{d(off)} | See specified Test Circuit. | | 109 | | ns |
| Fall Time | t _f | See specified Test Circuit. | | 65 | | ns |
| Total Gate Charge | Q _g | V _{DS} =-6V, V _{GS} =-2.5V, I _D =-3.5A | | 6.2 | | nC |
| Gate-to-Source Charge | Q _{gs} | V _{DS} =-6V, V _{GS} =-2.5V, I _D =-3.5A | | 1.6 | | nC |
| Gate-to-Drain "Miller" Charge | Q _{gd} | V _{DS} =-6V, V _{GS} =-2.5V, I _D =-3.5A | | 1.1 | | nC |
| Diode Forward Voltage | V _{SD} | I _S =-3.5A, V _{GS} =0V | | -0.83 | -1.2 | V |

Switching Time Test Circuit

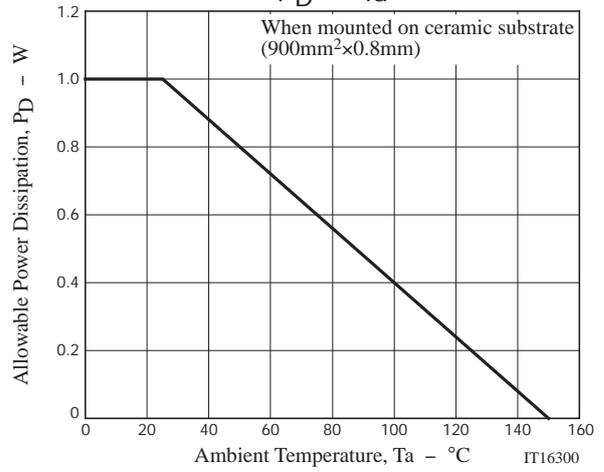
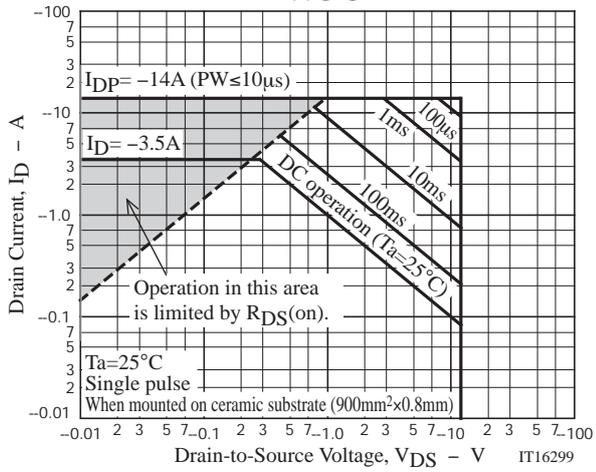
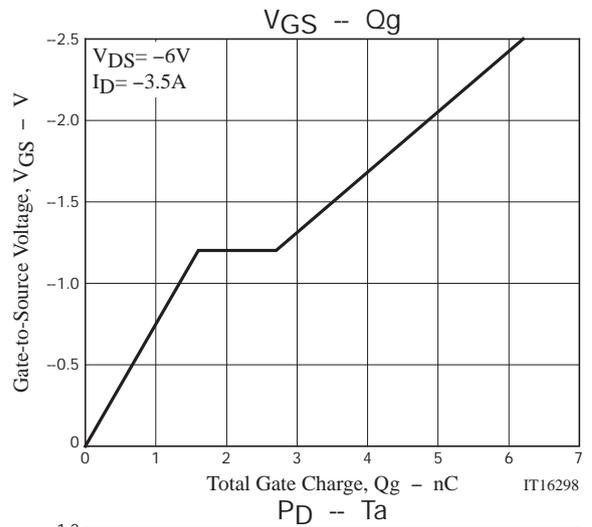
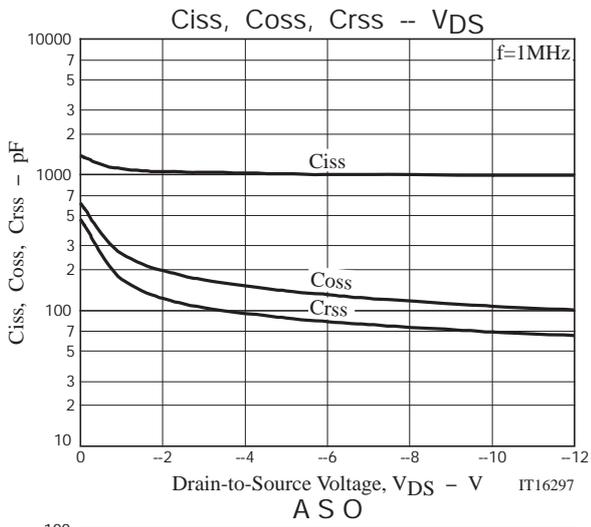


Ordering Information

| Device | Package | Shipping | memo |
|--------------|---------|----------------|--------------------------|
| MCH3383-TL-H | MCPH3 | 3,000pcs./reel | Pb Free and Halogen Free |

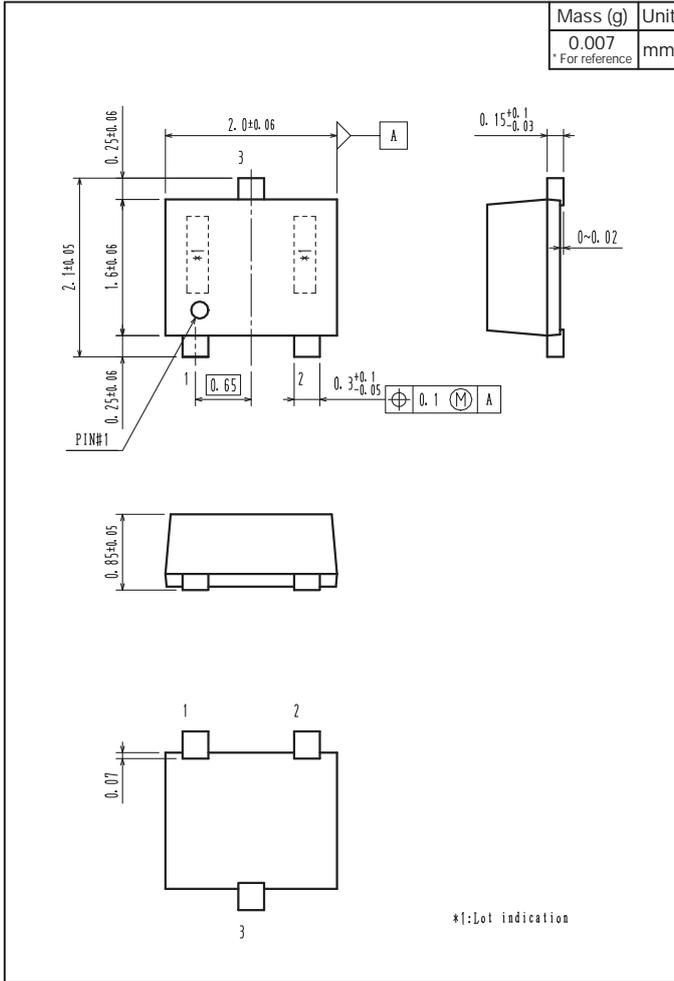


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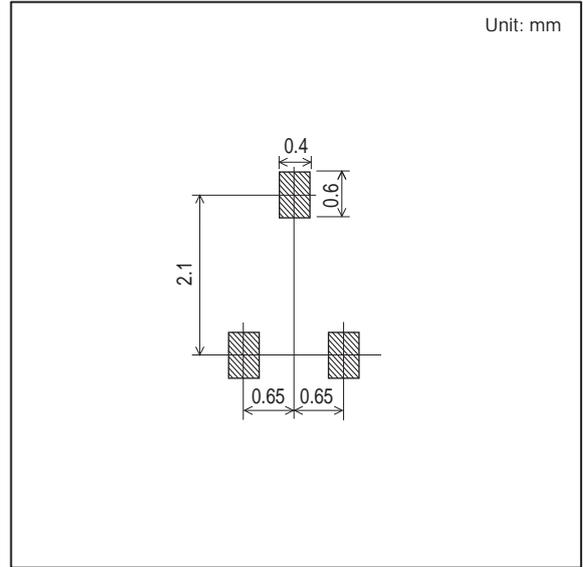


MCH3383

Outline Drawing MCH3383-TL-H



Land Pattern Example



Note on usage : Since the MCH3383 is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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- Техническая поддержка проекта;
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