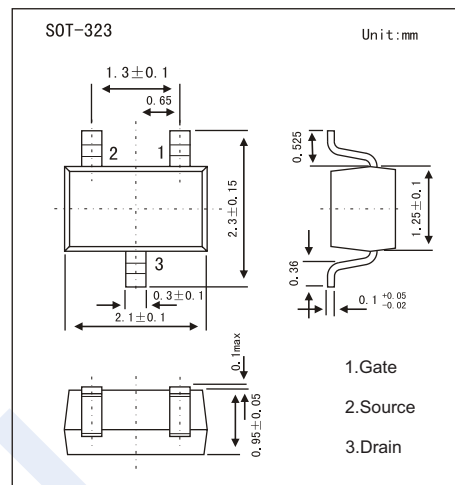
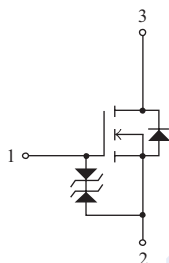


## N-Channel MOSFET

## MCH3476

## ■ Features

- $V_{DS} (V) = 20V$
- $I_D = 2.0 A$
- $R_{DS(ON)} < 125m\Omega$  ( $V_{GS} = 4.5V$ )
- $R_{DS(ON)} < 190m\Omega$  ( $V_{GS} = 2.5V$ )
- $R_{DS(ON)} < 310m\Omega$  ( $V_{GS} = 1.8V$ )
- 1.8V Drive
- ESD Diode-Protected Gate

■ Absolute Maximum Ratings  $T_a = 25^\circ C$ 

| Parameter   | Symbol     | Rating     | Unit         |
|---|------------|------------|--------------|
| Drain-Source Voltage  | $V_{DS}$   | 20         | V            |
| Gate-Source Voltage   | $V_{GS}$   | $\pm 12$   |              |
| Continuous Drain Current  | $I_D$      | 2          | A            |
| Pulsed Drain Current<br>$PW \leq 10\mu s$ , duty cycle $\leq 1\%$ | $I_{DP}$   | 8          |              |
| Power Dissipation <sup>*1</sup>                                   | $P_D$      | 0.8        | W            |
| Thermal Resistance.Junction- to-Ambient <sup>*1</sup>             | $R_{thJA}$ | 156.2      | $^\circ C/W$ |
| Junction Temperature  | $T_J$      | 150        | $^\circ C$   |
| Storage Temperature Range   | $T_{stg}$  | -55 to 150 |              |

\*1: When mounted on ceramic substrate ( $900mm^2 \times 0.8mm$ )

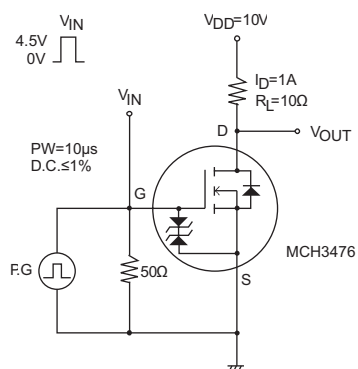
## N-Channel MOSFET

## MCH3476

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

| Parameter                         | Symbol       | Test Conditions  | Min                        | Typ  | Max      | Unit          |    |
|-----------------------------------|--------------|--|----------------------------|------|----------|---------------|----|
| Drain-Source Breakdown Voltage    | $V_{DS}$     | $I_D=1\text{mA}$ , $V_{GS}=0\text{V}$                        | 20                         |      |          | V             |    |
| Zero Gate Voltage Drain Current   | $I_{DSS}$    | $V_{DS}=20\text{V}$ , $V_{GS}=0\text{V}$                     |                            |      | 1        | $\mu\text{A}$ |    |
| Gate-Body Leakage Current         | $I_{GSS}$    | $V_{DS}=0\text{V}$ , $V_{GS}=\pm 8\text{V}$                  |                            |      | $\pm 10$ |               |    |
| Gate Threshold Voltage            | $V_{GS(th)}$ | $V_{DS}=10\text{V}$ , $I_D=1\text{mA}$                       | 0.4                        |      | 1.3      | V             |    |
| Static Drain-Source On-Resistance | $R_{DS(on)}$ | $V_{GS}=4.5\text{V}$ , $I_D=1\text{A}$                       |                            |      | 125      | m $\Omega$    |    |
|                                   |              | $V_{GS}=2.5\text{V}$ , $I_D=0.5\text{A}$                     |                            |      | 190      |               |    |
|                                   |              | $V_{GS}=1.8\text{V}$ , $I_D=0.3\text{A}$                     |                            |      | 310      |               |    |
| Forward Transconductance          | $g_{FS}$     | $V_{DS}=10\text{V}$ , $I_D=1\text{A}$                        |                            | 1.9  |          | S             |    |
| Input Capacitance                 | $C_{iss}$    | $V_{DS}=10\text{V}$ , $f=1\text{MHz}$                        |                            | 128  |          | $\mu\text{F}$ |    |
| Output Capacitance                | $C_{oss}$    |  |                            | 28   |          |               |    |
| Reverse Transfer Capacitance      | $C_{rss}$    |  |                            | 21   |          |               |    |
| Total Gate Charge                 | $Q_g$        |  |                            | 1.8  |          |               | nC |
| Gate Source Charge                | $Q_{gs}$     | $V_{GS}=4.5\text{V}$ , $V_{DS}=10\text{V}$ , $I_D=2\text{A}$ |                            | 0.3  |          |               |    |
| Gate Drain Charge                 | $Q_{gd}$     |  |                            | 0.55 |          |               |    |
| Turn-On Delay Time                | $t_{d(on)}$  |  | See specified Test Circuit |      | 5.1      |               |    |
| Turn-On Rise Time                 | $t_r$        |  |                            |      | 11       |               |    |
| Turn-Off Delay Time               | $t_{d(off)}$ |  |                            | 14.5 |          |               |    |
| Turn-Off Fall Time                | $t_f$        |  |                            | 12   |          |               |    |
| Diode Forward Voltage             | $V_{SD}$     | $I_S=2\text{A}$ , $V_{GS}=0\text{V}$                         |                            |      | 1.2      | V             |    |

## ■ Switching Time Test Circuit



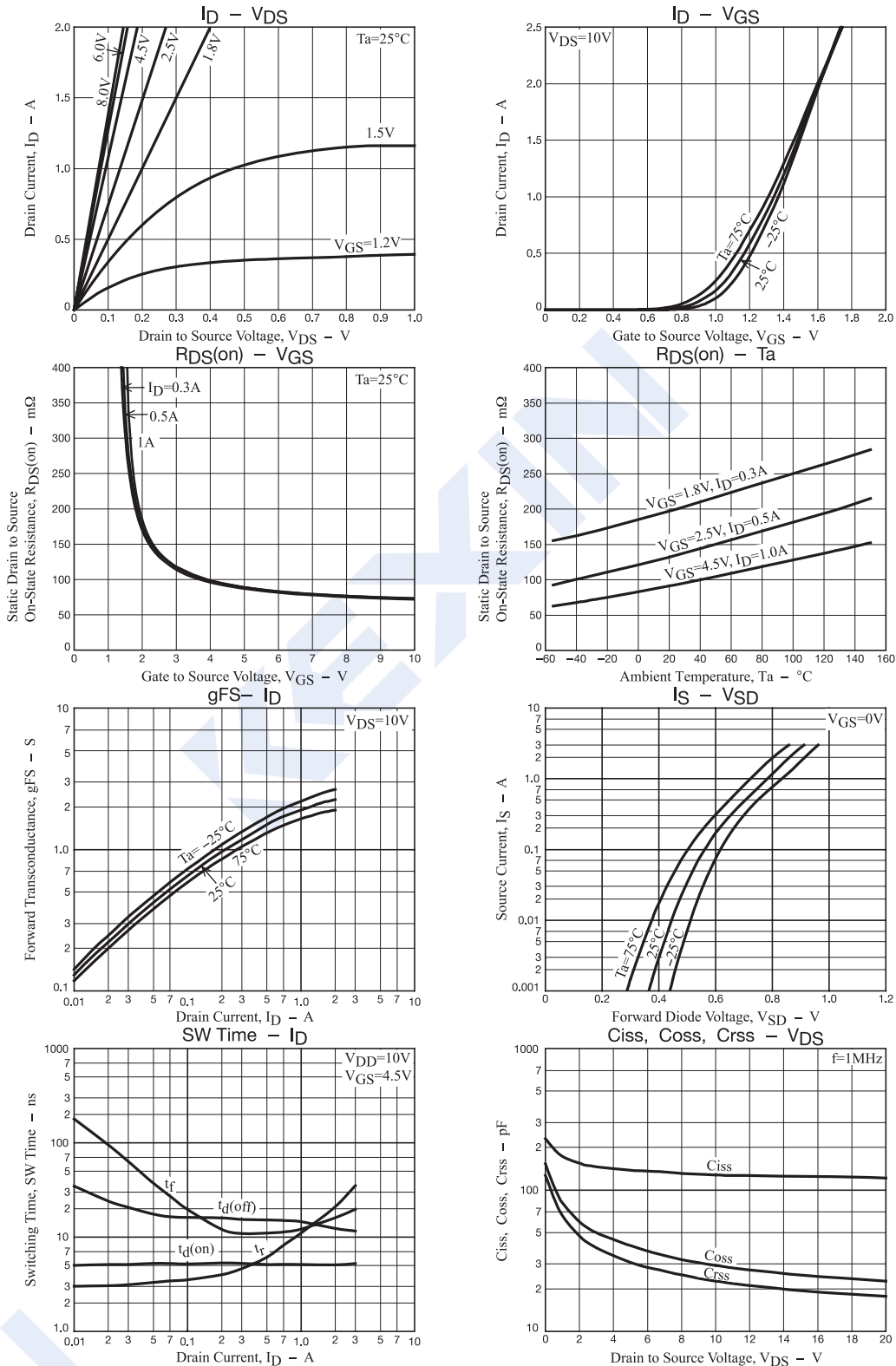
## ■ Marking

|         |    |
|---------|----|
| Marking | FH |
|---------|----|

# N-Channel MOSFET

## MCH3476

■ Typical Characteristics



# N-Channel MOSFET

## MCH3476

