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 勝特力电子(上海) 86-21-34970699
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MITSUBISHI Nch POWER MOSFET

FS10KMJ-2

HIGH-SPEED SWITCHING USE

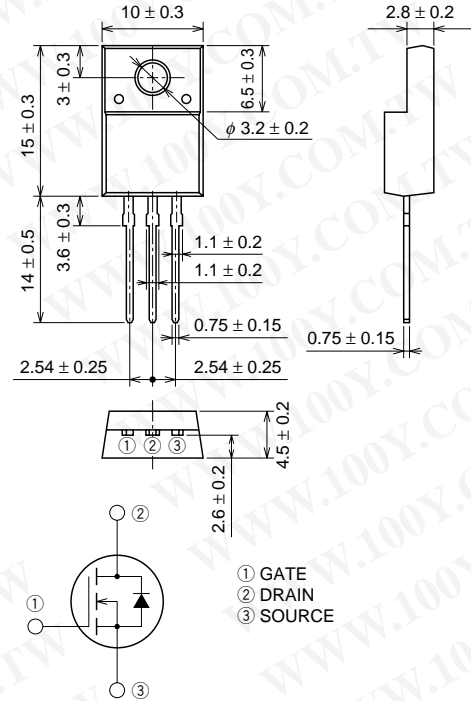
FS10KMJ-2



- 4V DRIVE
- V_{DSS} 100V
- r_{DS(ON)} (MAX) 0.19Ω
- I_D 10A
- Integrated Fast Recovery Diode (TYP.) 95ns
- V_{iso} 2000V

OUTLINE DRAWING

Dimensions in mm



TO-220FN

APPLICATION

Motor control, Lamp control, Solenoid control
 DC-DC converter, etc.

MAXIMUM RATINGS (T_c = 25°C)

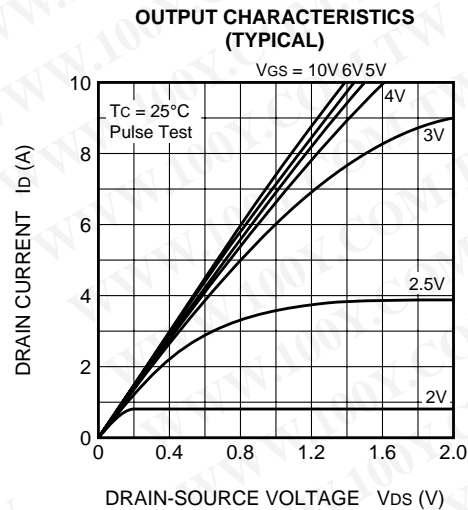
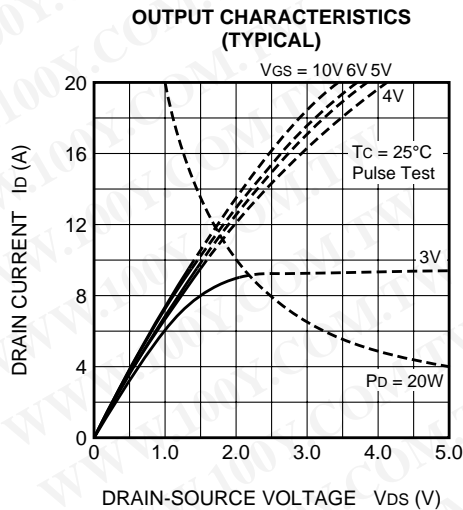
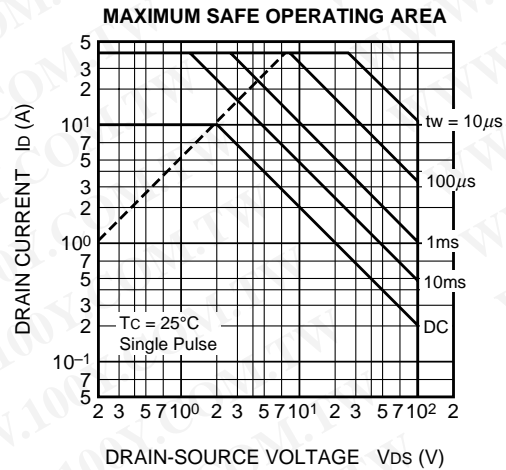
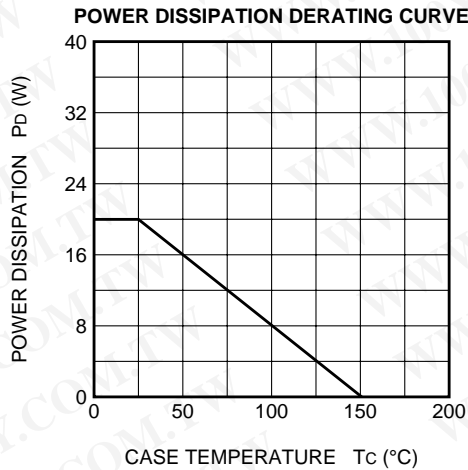
| Symbol | Parameter | Conditions | Ratings | Unit |
|------------------|----------------------------------|----------------------------------|------------|------|
| V _{DSS} | Drain-source voltage | V _{GS} = 0V | 100 | V |
| V _{GSS} | Gate-source voltage | V _{DS} = 0V | ±20 | V |
| I _D | Drain current | | 10 | A |
| I _{DM} | Drain current (Pulsed) | | 40 | A |
| I _{DA} | Avalanche drain current (Pulsed) | L = 100μH | 10 | A |
| I _S | Source current | | 10 | A |
| I _{SM} | Source current (Pulsed) | | 40 | A |
| P _D | Maximum power dissipation | | 20 | W |
| T _{ch} | Channel temperature | | -55 ~ +150 | °C |
| T _{stg} | Storage temperature | | -55 ~ +150 | °C |
| V _{iso} | Isolation voltage | AC for 1minute, Terminal to case | 2000 | V |
| — | Weight | Typical value | 2.0 | g |

Feb.1999

ELECTRICAL CHARACTERISTICS (Tch = 25°C)

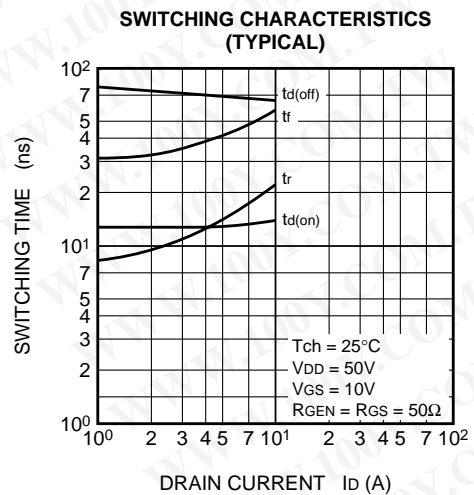
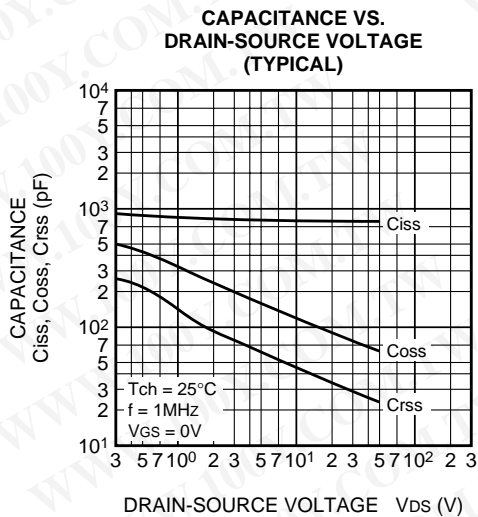
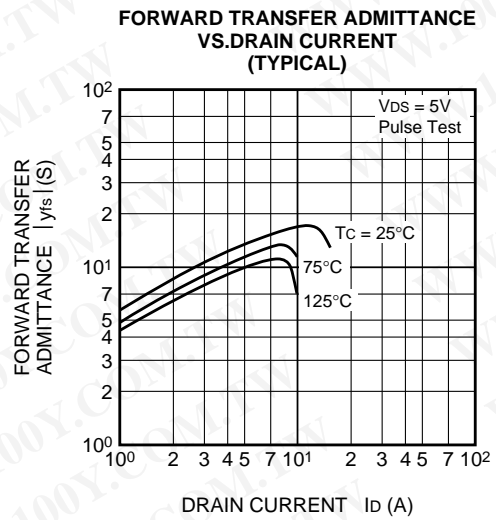
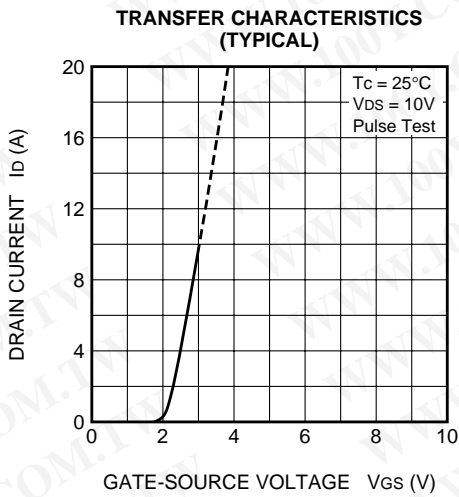
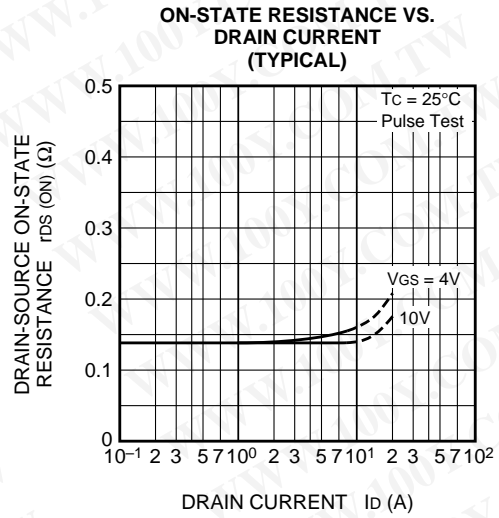
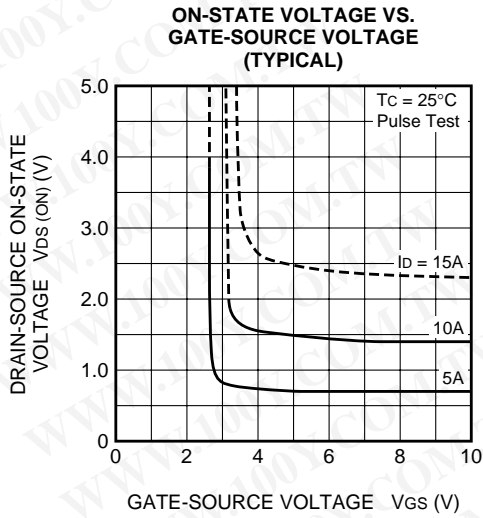
| Symbol | Parameter | Test conditions | Limits | | | Unit |
|-----------|----------------------------------|---|--------|------|------|------|
| | | | Min. | Typ. | Max. | |
| V(BR)DSS | Drain-source breakdown voltage | Id = 1mA, VGS = 0V | 100 | — | — | V |
| IGSS | Gate-source leakage current | VGS = ±20V, VDS = 0V | — | — | ±0.1 | μA |
| IDSS | Drain-source leakage current | VDS = 100V, VGS = 0V | — | — | 0.1 | mA |
| VGS(th) | Gate-source threshold voltage | Id = 1mA, VDS = 10V | 1.0 | 1.5 | 2.0 | V |
| rDS(ON) | Drain-source on-state resistance | Id = 5A, VGS = 10V | — | 0.14 | 0.19 | Ω |
| rDS(ON) | Drain-source on-state resistance | Id = 5A, VGS = 4V | — | 0.16 | 0.21 | Ω |
| VDS(ON) | Drain-source on-state voltage | Id = 5A, VGS = 10V | — | 0.70 | 0.95 | V |
| yfs | Forward transfer admittance | Id = 5A, VDS = 5V | — | 13 | — | S |
| Ciss | Input capacitance | VDS = 10V, VGS = 0V, f = 1MHz | — | 800 | — | pF |
| Coss | Output capacitance | | — | 125 | — | pF |
| Crss | Reverse transfer capacitance | | — | 45 | — | pF |
| td(on) | Turn-on delay time | VDD = 50V, Id = 5A, VGS = 10V, RGEN = RGS = 50Ω | — | 14 | — | ns |
| tr | Rise time | | — | 15 | — | ns |
| td(off) | Turn-off delay time | | — | 65 | — | ns |
| tf | Fall time | | — | 40 | — | ns |
| VSD | Source-drain voltage | IS = 5A, VGS = 0V | — | 1.0 | 1.5 | V |
| Rth(ch-c) | Thermal resistance | Channel to case | — | — | 6.25 | °C/W |
| trr | Reverse recovery time | IS = 10A, dis/dt = -100A/μs | — | 95 | — | ns |

PERFORMANCE CURVES

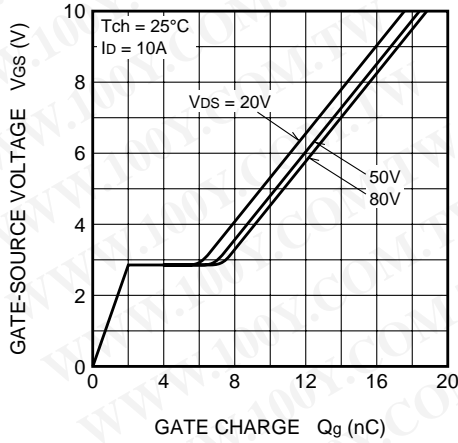


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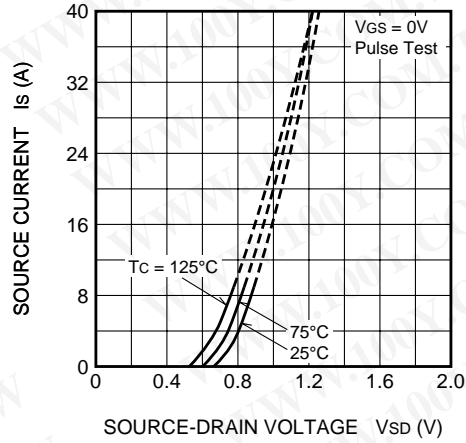
HIGH-SPEED SWITCHING USE



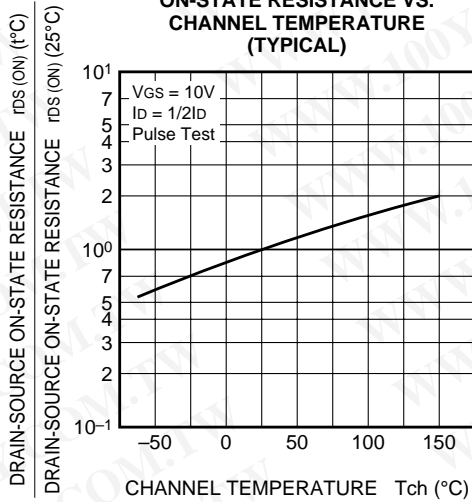
GATE-SOURCE VOLTAGE VS. GATE CHARGE (TYPICAL)



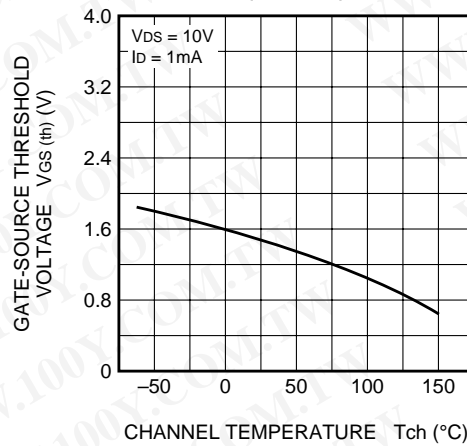
SOURCE-DRAIN DIODE FORWARD CHARACTERISTICS (TYPICAL)



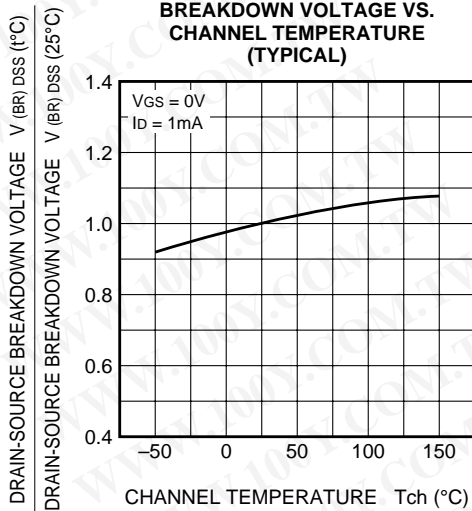
ON-STATE RESISTANCE VS. CHANNEL TEMPERATURE (TYPICAL)



THRESHOLD VOLTAGE VS. CHANNEL TEMPERATURE (TYPICAL)



BREAKDOWN VOLTAGE VS. CHANNEL TEMPERATURE (TYPICAL)



TRANSIENT THERMAL IMPEDANCE CHARACTERISTICS

