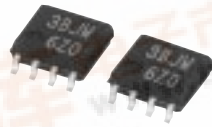


MITSUBISHI Pch POWER MOSFET

FY3ABJ-03

HIGH-SPEED SWITCHING USE

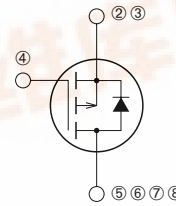
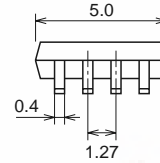
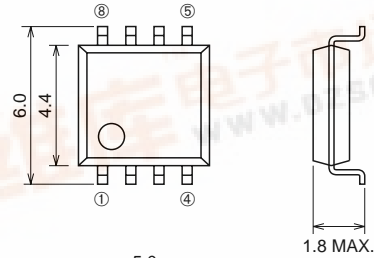
FY3ABJ-03



- 4V DRIVE
- V_{DSS} -30V
- $r_{DS(ON)}$ (MAX) 70m Ω
- I_D -3A

OUTLINE DRAWING

Dimensions in mm



- ②③ SOURCE
- ④ GATE
- ⑤⑥⑦⑧ DRAIN
- ① No-contact

SOP-8

APPLICATION

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

MAXIMUM RATINGS (Tc = 25°C)

| Symbol | Parameter | Conditions | Ratings | Unit |
|-----------|----------------------------------|---------------|------------|------|
| V_{DSS} | Drain-source voltage | $V_{GS} = 0V$ | -30 | V |
| V_{GSS} | Gate-source voltage | $V_{DS} = 0V$ | ± 20 | V |
| I_D | Drain current | | -3 | A |
| I_{DM} | Drain current (Pulsed) | | -21 | A |
| I_{DA} | Avalanche drain current (Pulsed) | $L = 10\mu H$ | -3 | A |
| I_S | Source current | | -1.7 | A |
| I_{SM} | Source current (Pulsed) | | -6.8 | A |
| P_D | Maximum power dissipation | | 1.8 | W |
| T_{ch} | Channel temperature | | -55 ~ +150 | °C |
| T_{stg} | Storage temperature | | -55 ~ +150 | °C |
| — | Weight | Typical value | 0.07 | g |

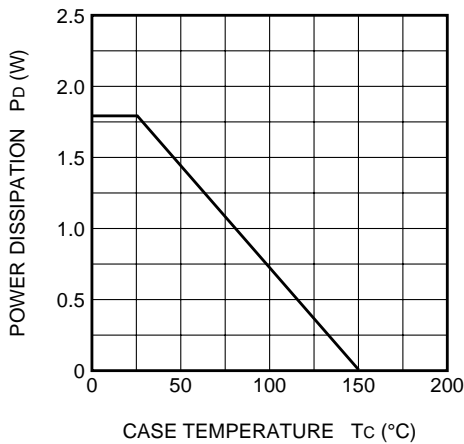


ELECTRICAL CHARACTERISTICS (Tch = 25°C)

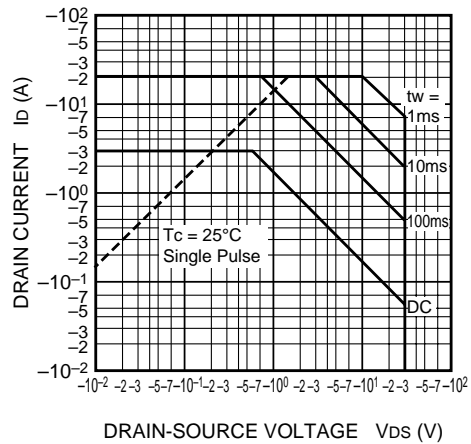
| Symbol | Parameter | Test conditions | Limits | | | Unit |
|-----------|----------------------------------|------------------------------------------------------|--------|-------|-------|------|
| | | | Min. | Typ. | Max. | |
| V(BR)DSS | Drain-source breakdown voltage | ID = -1mA, VDS = 0V | -30 | — | — | V |
| IGSS | Gate-source leakage current | VGS = ±20V, VDS = 0V | — | — | ±0.1 | µA |
| IDSS | Drain-source leakage current | VDS = -30V, VGS = 0V | — | — | -0.1 | mA |
| VGS(th) | Gate-source threshold voltage | ID = -1mA, VDS = -10V | -1.5 | -2.0 | -2.5 | V |
| rDS(ON) | Drain-source on-state resistance | ID = -3A, VGS = -10V | — | 57 | 70 | mΩ |
| rDS(ON) | Drain-source on-state resistance | ID = -1.5A, VGS = -4V | — | 102 | 160 | mΩ |
| VDS(ON) | Drain-source on-state voltage | ID = -3A, VGS = -10V | — | -0.17 | -0.21 | V |
| yfs | Forward transfer admittance | ID = -3A, VDS = -10V | — | 8 | — | S |
| Ciss | Input capacitance | VDS = -10V, VGS = 0V, f = 1MHz | — | 2100 | — | pF |
| Coss | Output capacitance | | — | 340 | — | pF |
| Crss | Reverse transfer capacitance | | — | 195 | — | pF |
| td(on) | Turn-on delay time | VDD = -15V, ID = -1.5A, VGS = -10V, RGEN = RGS = 50Ω | — | 20 | — | ns |
| tr | Rise time | | — | 20 | — | ns |
| td(off) | Turn-off delay time | | — | 135 | — | ns |
| tf | Fall time | | — | 50 | — | ns |
| VSD | Source-drain voltage | IS = -1.7A, VGS = 0V | — | -0.77 | -1.20 | V |
| Rth(ch-a) | Thermal resistance | Channel to ambient | — | — | 69.4 | °C/W |
| trr | Reverse recovery time | IS = -1.7A, dis/dt = 50A/µs | — | 70 | — | ns |

PERFORMANCE CURVES

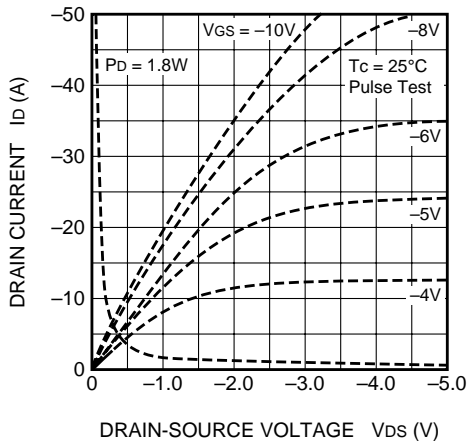
POWER DISSIPATION DERATING CURVE



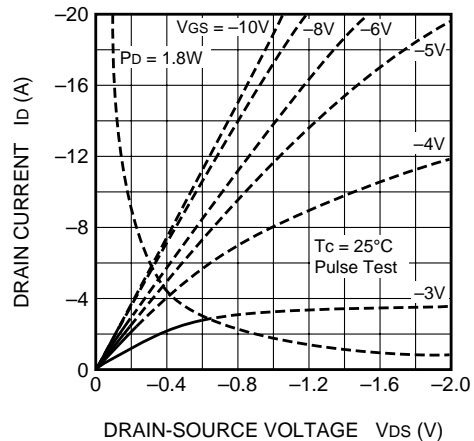
MAXIMUM SAFE OPERATING AREA

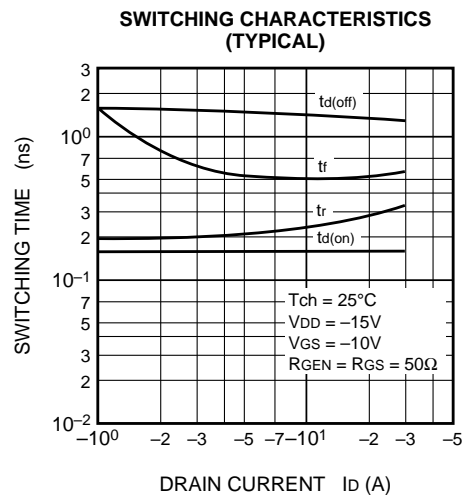
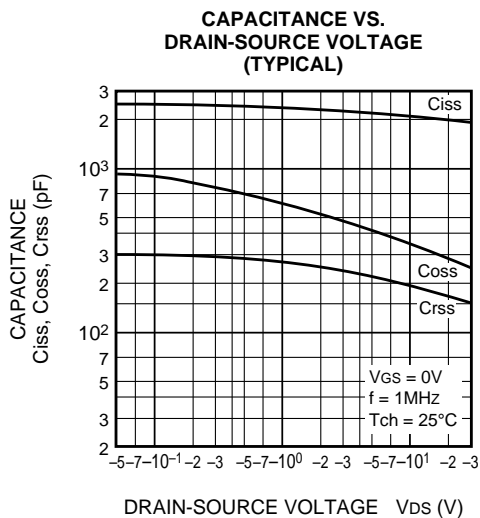
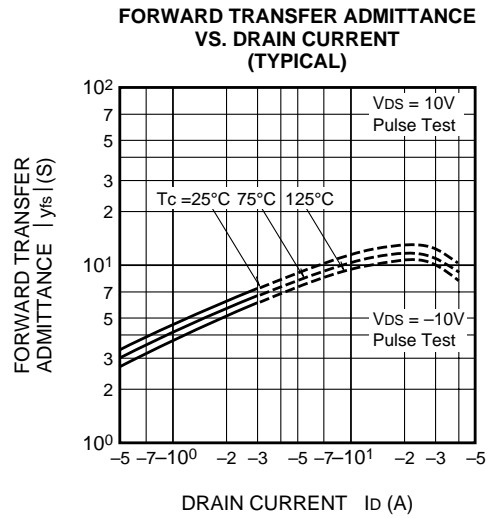
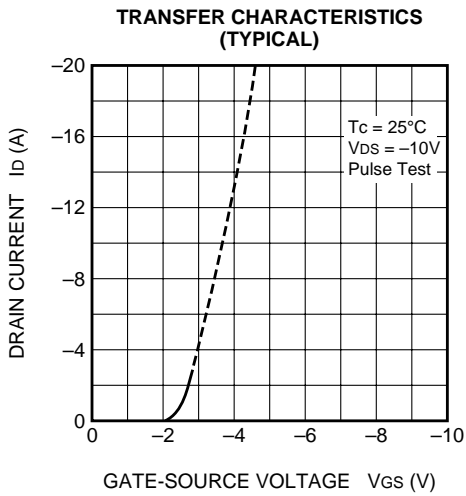
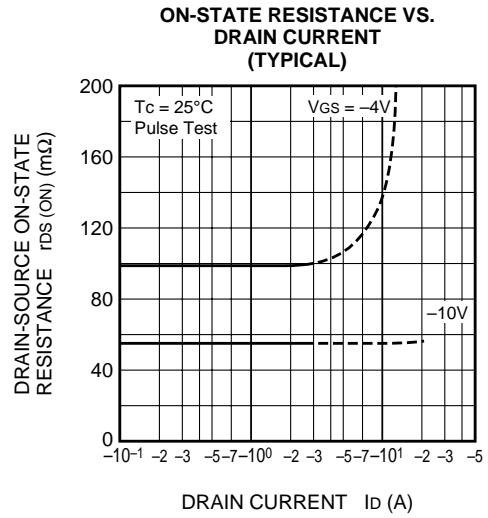
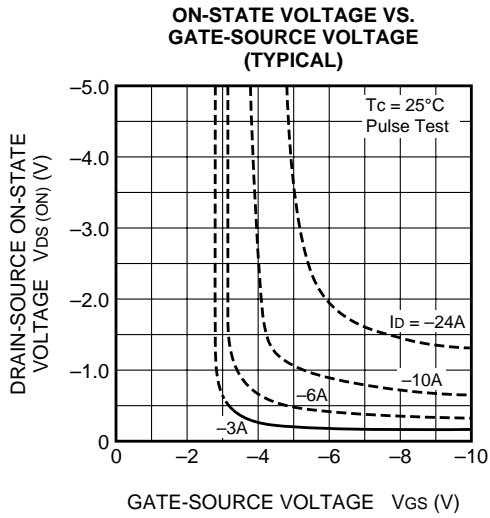


OUTPUT CHARACTERISTICS (TYPICAL)

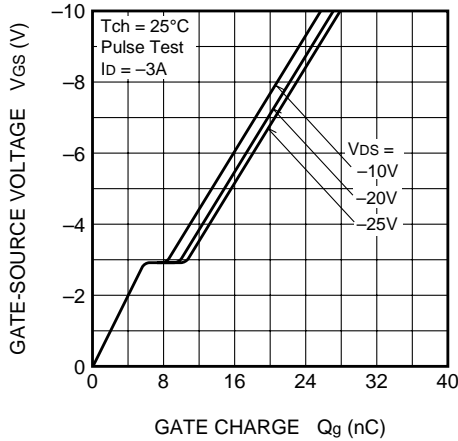


OUTPUT CHARACTERISTICS (TYPICAL)

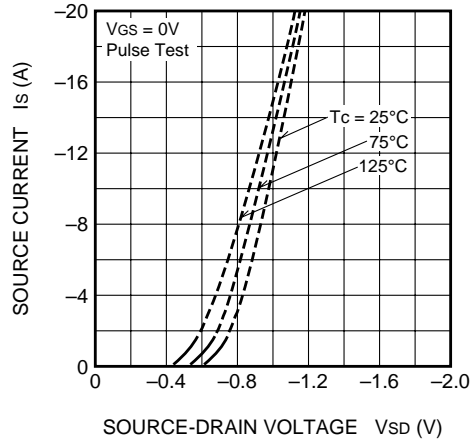




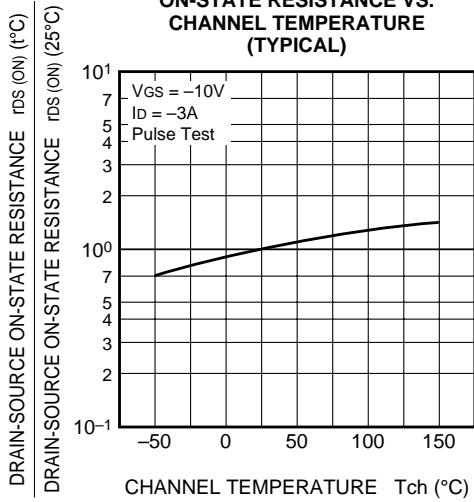
GATE-SOURCE VOLTAGE VS. GATE CHARGE (TYPICAL)



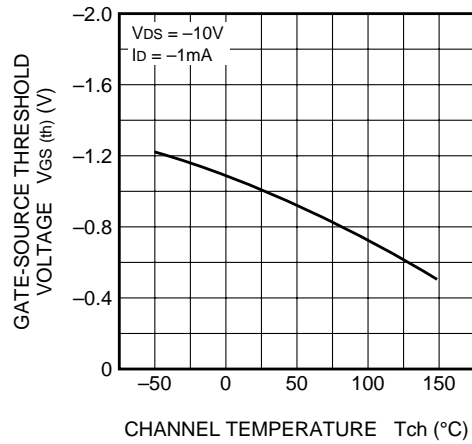
SOURCE-DRAIN DIODE FORWARD CHARACTERISTICS (TYPICAL)



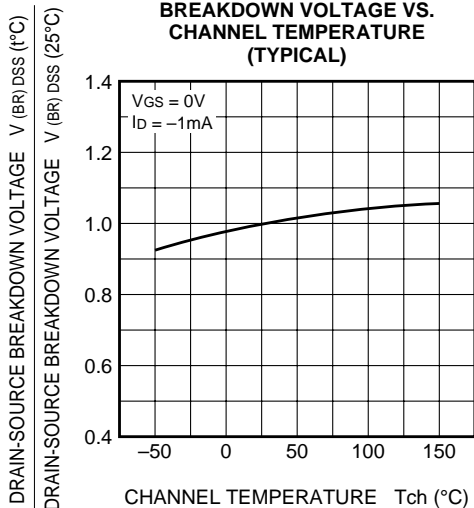
ON-STATE RESISTANCE VS. CHANNEL TEMPERATURE (TYPICAL)



THRESHOLD VOLTAGE VS. CHANNEL TEMPERATURE (TYPICAL)



BREAKDOWN VOLTAGE VS. CHANNEL TEMPERATURE (TYPICAL)



TRANSIENT THERMAL IMPEDANCE CHARACTERISTICS

