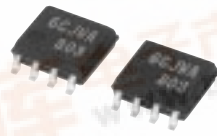


MITSUBISHI Nch POWER MOSFET

FY6ACJ-03A

HIGH-SPEED SWITCHING USE

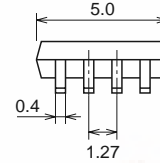
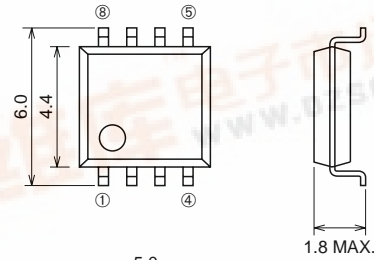
FY6ACJ-03A



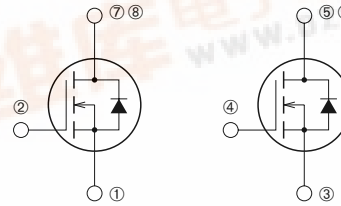
- 4V DRIVE
- V_{DSS} 30V
- r_{DS} (ON) (MAX) 23mΩ
- I_D 6A

OUTLINE DRAWING

Dimensions in mm



- ① ③ SOURCE
- ② ④ GATE
- ⑤ ⑥ ⑦ ⑧ DRAIN



SOP-8

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 | 30 | V |
| V _{GSS} | Gate-source voltage | V _{DS} = 0V | ±20 | V |
| I _D | Drain current | | 6 | A |
| I _{DM} | Drain current (Pulsed) | | 42 | A |
| I _{DA} | Avalanche drain current (Pulsed) | L = 10μH | 6 | 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 |



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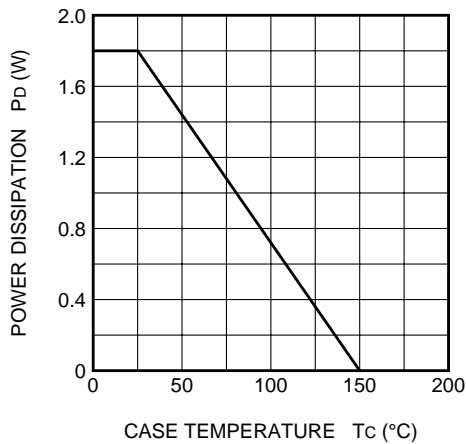
HIGH-SPEED SWITCHING USE

ELECTRICAL CHARACTERISTICS (Tch = 25°C)

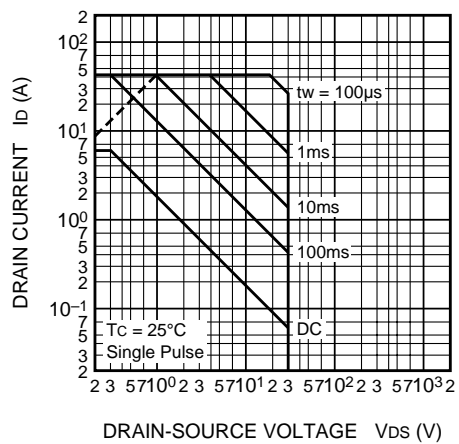
| Symbol | Parameter | Test conditions | Limits | | | Unit |
|-----------|----------------------------------|---|--------|------|------|------|
| | | | Min. | Typ. | Max. | |
| V(BR)DSS | Drain-source breakdown voltage | Id = 1mA, Vgs = 0V | 30 | — | — | V |
| IGSS | Gate-source leakage current | VGS = ±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 | 1.0 | 1.5 | 2.0 | V |
| rDS(ON) | Drain-source on-state resistance | Id = 6A, VGS = 10V | — | 17 | 23 | mΩ |
| rDS(ON) | Drain-source on-state resistance | Id = 3A, VGS = 4V | — | 26 | 40 | mΩ |
| VDS(ON) | Drain-source on-state voltage | Id = 6A, VGS = 10V | — | 102 | 138 | mV |
| yfs | Forward transfer admittance | Id = 6A, VDS = 10V | — | 12 | — | S |
| Ciss | Input capacitance | VDS = 10V, VGS = 0V, f = 1MHz | — | 1000 | — | pF |
| Coss | Output capacitance | | — | 350 | — | pF |
| Crss | Reverse transfer capacitance | | — | 160 | — | pF |
| td(on) | Turn-on delay time | VDD = 15V, Id = 3A, VGS = 10V, RGEN = RGS = 50Ω | — | 15 | — | ns |
| tr | Rise time | | — | 25 | — | ns |
| td(off) | Turn-off delay time | | — | 75 | — | ns |
| tf | Fall time | | — | 55 | — | ns |
| VSD | Source-drain voltage | Is = 1.7A, Vgs = 0V | — | 0.75 | 1.10 | V |
| Rth(ch-a) | Thermal resistance | Channel to ambient | — | — | 69.4 | °C/W |
| trr | Reverse recovery time | Is = 1.7A, dis/dt = -50A/μs | — | 35 | — | ns |

PERFORMANCE CURVES

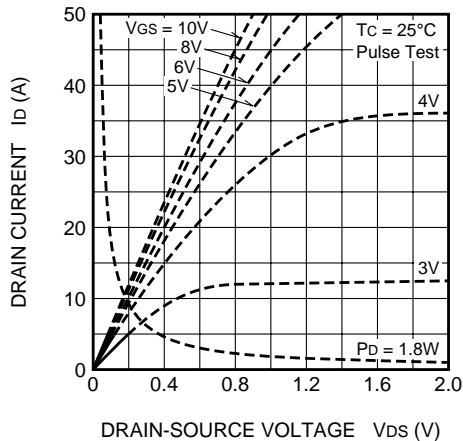
POWER DISSIPATION DERATING CURVE



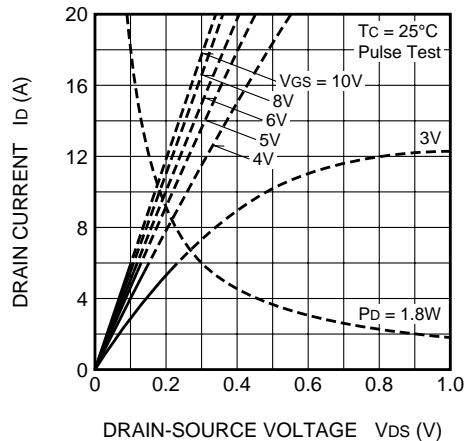
MAXIMUM SAFE OPERATING AREA



OUTPUT CHARACTERISTICS (TYPICAL)

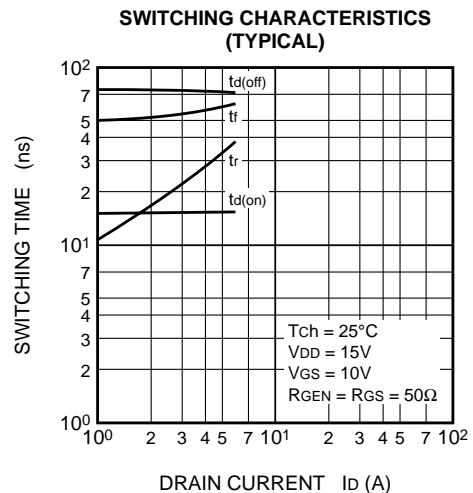
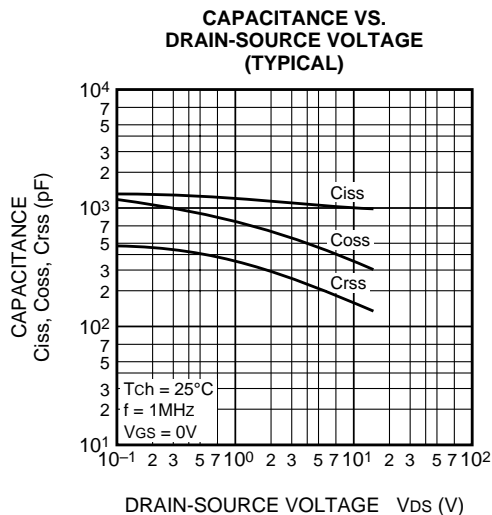
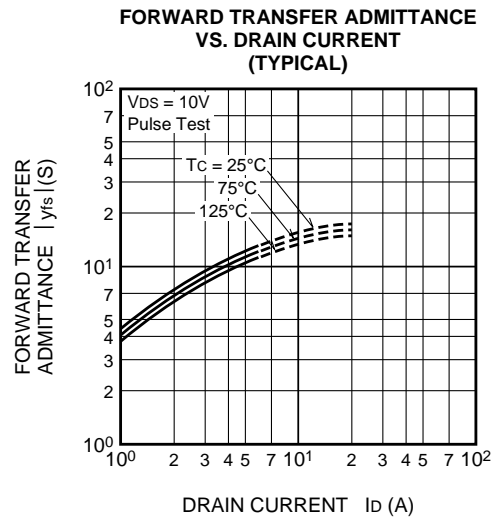
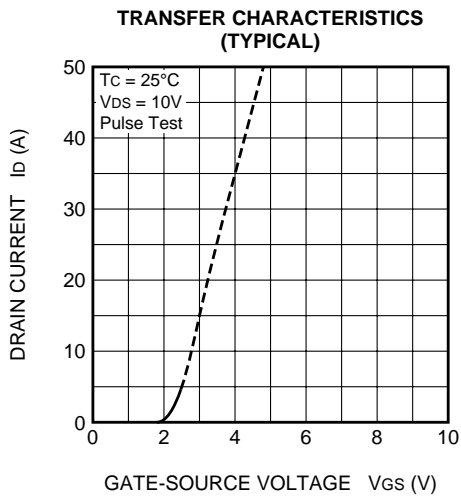
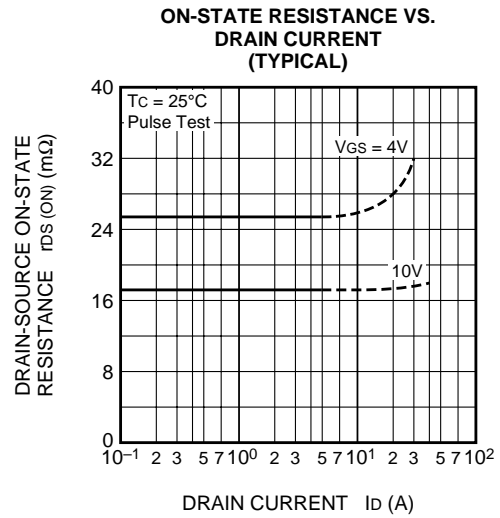
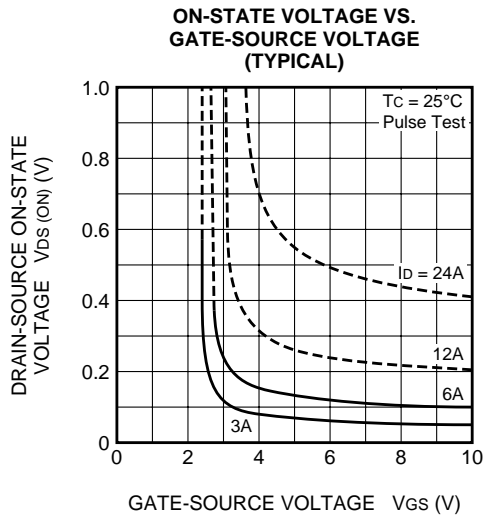


OUTPUT CHARACTERISTICS (TYPICAL)



FY6ACJ-03A

HIGH-SPEED SWITCHING USE



FY6ACJ-03A

HIGH-SPEED SWITCHING USE

