


FY8AAJ-03F

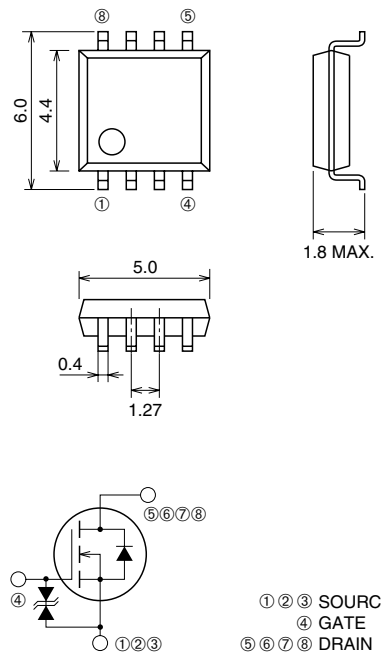
HIGH-SPEED SWITCHING USE

FY8AAJ-03F



- 4V DRIVE
- V_{DSS} 30V
- $r_{DS(ON)}(MAX)$ 28mΩ
- I_D 8A

OUTLINE DRAWING Dimensions in mm



① ② ③ SOURCE
④ GATE
⑤ ⑥ ⑦ ⑧ DRAIN

SOP-8

APPLICATION

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

MAXIMUM RATINGS ($T_c = 25^\circ C$)

| 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 | | 8 | A |
| I_{DM} | Drain current (Pulsed) | | 56 | A |
| I_{DA} | Avalanche drain current (Pulsed) | $L = 10\mu H$ | 8 | A |
| I_S | Source current | | 1.5 | A |
| I_{SM} | Source current (Pulsed) | | 6.0 | A |
| P_D | Maximum power dissipation | | 1.7 | W |
| T_{ch} | Channel temperature | | -55~+150 | $^\circ C$ |
| T_{stg} | Storage temperature | | -55~+150 | $^\circ C$ |
| — | 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, VGS = 0V | 30 | — | — | V |
| V (BR)GSS | Gate-source breakdown voltage | IG = ±100μA, VGS = 0V | ±20 | — | — | V |
| IDSS | Drain-source leakage current | VDS = 30V, VGS = 0V | — | — | 0.1 | mA |
| IGSS | Gate-source leakage current | VGS = ±20V, VDS = 0V | — | — | ±10 | μA |
| 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 = 8A, VGS = 10V | — | 22 | 28 | mΩ |
| rDS (ON) | Drain-source on-state resistance | ID = 4A, VGS = 4.5V | — | 31 | 43 | mΩ |
| rDS (ON) | Drain-source on-state resistance | ID = 4A, VGS = 4V | — | 35 | 50 | mΩ |
| VDS (ON) | Drain-source on-state voltage | ID = 8A, VGS = 10V | — | 0.176 | 0.224 | V |
| yfs | Forward transfer admittance | ID = 8A, VDS = 10V | — | 13 | — | S |
| Ciss | Input capacitance | VDS = 10V, VGS = 0V, f = 1MHz | — | 600 | — | pF |
| Coss | Output capacitance | | — | 200 | — | pF |
| Crss | Reverse transfer capacitance | | — | 90 | — | pF |
| td (on) | Turn-on delay time | VDD = 15V, ID = 4A, VGS = 10V, RG = 50Ω | — | 12 | — | ns |
| tr | Rise time | | — | 16 | — | ns |
| td (off) | Turn-off delay time | | — | 30 | — | ns |
| tf | Fall time | | — | 6.5 | — | ns |
| Qg | Total gate charge | VDD = 15V, VGS = 10V, ID = 8A | — | 13.8 | — | nC |
| Qgs | Gate-source charge | | — | 1.6 | — | nC |
| Qgd | Gate-drain charge | | — | 3.5 | — | nC |
| VSD | Source-drain voltage | IS = 1.5A, VGS = 0V | — | 0.75 | 1.10 | V |
| Rth (ch-a) | Thermal resistance | Channel to air | — | — | 73.5 | °C/W |
| trr | Reverse recovery time | IS = 1.5A, dis/dt = -50A/μs | — | 50 | — | ns |



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