

MITSUBISHI Nch POWER MOSFET

FL14KM-9A

HIGH-SPEED SWITCHING USE

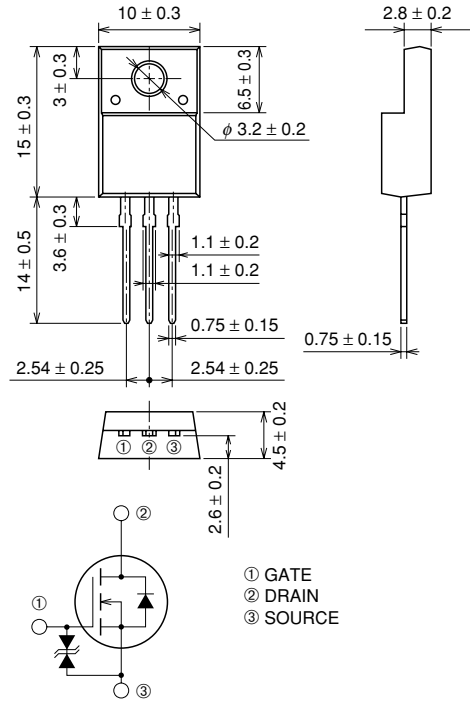
FL14KM-9A



- 10V DRIVE
- V_{DSS} 450V
- r_{DS (ON)} (MAX) 0.52Ω
- I_D 14A

OUTLINE DRAWING

Dimensions in mm



TO-220FN

APPLICATION

SMPS, Inverter fluorescent light sets, etc.

MAXIMUM RATINGS (T_c = 25°C)

| Symbol | Parameter | Conditions | Ratings | Unit |
|------------------|----------------------------|----------------------------------|------------|------|
| V _{DSS} | Drain-source voltage | V _{GS} = 0V | 450 | V |
| V _{GSS} | Gate-source voltage | V _{DS} = 0V | ±30 | V |
| I _D | Drain current | | 14 | A |
| I _{DM} | Drain current (Pulsed) | | 42 | A |
| I _{DA} | Avalanche current (Pulsed) | L = 200μH | 14 | A |
| P _D | Maximum power dissipation | | 40 | 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 |

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ELECTRICAL CHARACTERISTICS (T_{ch} = 25°C)

| Symbol | Parameter | Test conditions | Limits | | | Unit |
|------------------------|----------------------------------|--------------------------------------------------------------------------------------------------------------|-------------------------------------------|------|------|------|
| | | | Min. | Typ. | Max. | |
| V (BR) DSS | Drain-source breakdown voltage | I _D = 1mA, V _{GS} = 0V | 450 | — | — | V |
| V (BR) GSS | Gate-source breakdown voltage | I _G = ±100μA, V _{DS} = 0V | ±30 | — | — | V |
| I _{GSS} | Gate-source leakage current | V _{GS} = ±25V, V _{DS} = 0V | — | — | ±10 | μA |
| I _{DSS} | Drain-source leakage current | V _{DS} = 450V, V _{GS} = 0V | — | — | 1 | mA |
| V _{GS} (th) | Gate-source threshold voltage | I _D = 1mA, V _{DS} = 10V | 2.0 | 3.0 | 4.0 | V |
| r _{DS} (ON) | Drain-source on-state resistance | I _D = 7A, V _{GS} = 10V | — | 0.40 | 0.52 | Ω |
| V _{DS} (ON) | Drain-source on-state voltage | I _D = 7A, V _{GS} = 10V | — | 2.80 | 3.64 | V |
| y _{fs} | Forward transfer admittance | I _D = 7A, V _{DS} = 10V | — | 8.0 | — | S |
| C _{iss} | Input capacitance | V _{DS} = 25V, V _{GS} = 0V, f = 1MHz | — | 1250 | — | pF |
| C _{oss} | Output capacitance | | — | 150 | — | pF |
| C _{rss} | Reverse transfer capacitance | | — | 55 | — | pF |
| t _d (on) | Turn-on delay time | | — | 25 | — | ns |
| t _r | Rise time | V _{DD} = 200V, I _D = 7A, V _{GS} = 10V, R _{GEN} = R _{GS} = 50Ω | — | 45 | — | ns |
| t _d (off) | Turn-off delay time | | — | 250 | — | ns |
| t _f | Fall time | | — | 90 | — | ns |
| V _{SD} | Source-drain voltage | | I _S = 7A, V _{GS} = 0V | — | 1.5 | 2.0 |
| R _{th} (ch-c) | Thermal resistance | Channel to case | — | — | 3.13 | °C/W |