# RJL6015DPK

## Silicon N Channel MOS FET
## High Speed Power Switching

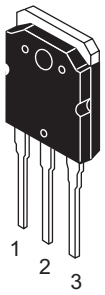
REJ03G1818-0100
Rev.1.00
Sep 11, 2009

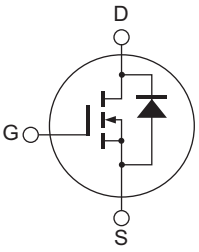
### Features

- Built-in fast recovery diode
- Low on-resistance
- Low leakage current
- High speed switching

### Outline

RENESAS Package code: PRSS0004ZE-A
(Package name:TO-3P)




1. Gate
2. Drain (Flange)
3. Source

### Absolute Maximum Ratings

(Ta = 25°C)

| Item | Symbol | Ratings | Unit |
|---|---|---|---|
| Drain to source voltage | $V_{DSS}$ | 600 | V |
| Gate to source voltage | $V_{GSS}$ | ±30 | V |
| Drain current | $I_D$ | 19 | A |
| Drain peak current | $I_{D\ (pulse)}$ Note1 | 57 | A |
| Body-drain diode reverse drain current | $I_{DR}$ | 19 | A |
| Body-drain diode reverse drain peak current | $I_{DR\ (pulse)}$ Note1 | 57 | A |
| Avalanche current | $I_{AP}$ Note3 | 6 | A |
| Avalanche energy | $E_{AR}$ Note3 | 1.9 | mJ |
| Channel dissipation | Pch Note2 | 150 | W |
| Channel to case thermal impedance | θch-c | 0.833 | °C/W |
| Channel temperature | Tch | 150 | °C |
| Storage temperature | Tstg | –55 to +150 | °C |

Notes: 1. PW ≤ 10 μs, duty cycle ≤ 1%
2. Value at Tc = 25°C
3. STch = 25°C, Tch ≤ 150°C

## Electrical Characteristics

(Ta = 25°C)

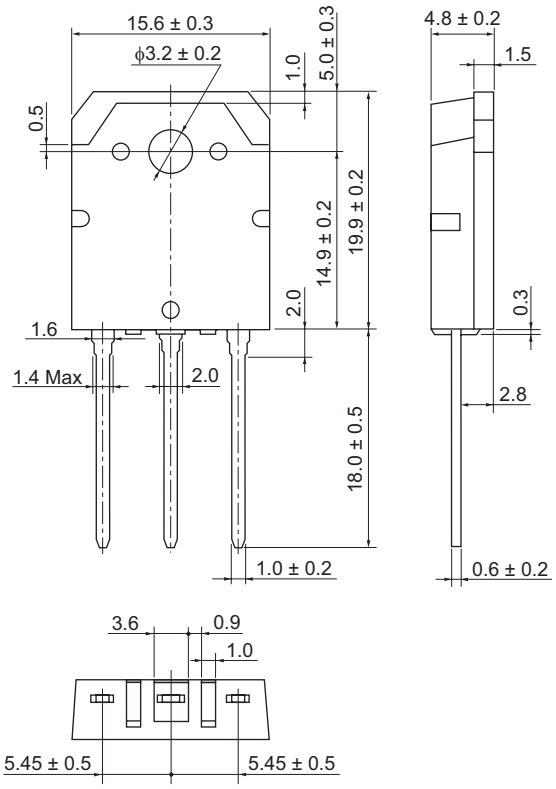
| Item | Symbol | Min | Typ | Max | Unit | Test conditions |
|---|---|---|---|---|---|---|
| Drain to source breakdown voltage | $V_{(BR)DSS}$ | 600 | — | — | V | $I_D$ = 10 mA, $V_{GS}$ = 0 |
| Zero gate voltage drain current | $I_{DSS}$ | — | — | 10 | μA | $V_{DS}$ = 600 V, $V_{GS}$ = 0 |
| Gate to source leak current | $I_{GSS}$ | — | — | ±0.1 | μA | $V_{GS}$ = ±30 V, $V_{DS}$ = 0 |
| Gate to source cutoff voltage | $V_{GS(off)}$ | 1.5 | — | 4.0 | V | $V_{DS}$ = 10 V, $I_D$ = 1 mA |
| Static drain to source on state resistance | $R_{DS(on)}$ | — | 0.34 | 0.41 | Ω | $I_D$ = 9.5 A, $V_{GS}$ = 10 V Note4 |
| Input capacitance | Ciss | — | 2370 | — | pF | $V_{DS}$ = 25 V<br>$V_{GS}$ = 0<br>f = 1 MHz |
| Output capacitance | Coss | — | 242 | — | pF | |
| Reverse transfer capacitance | Crss | — | 30 | — | pF | |
| Turn-on delay time | $t_{d(on)}$ | — | 35 | — | ns | $I_D$ = 9.5 A<br>$V_{GS}$ = 10 V<br>$R_L$ = 31.6 Ω<br>Rg = 10 Ω |
| Rise time | $t_r$ | — | 17 | — | ns | |
| Turn-off delay time | $t_{d(off)}$ | — | 119 | — | ns | |
| Fall time | $t_f$ | — | 21 | — | ns | |
| Total gate charge | Qg | — | 65 | — | nC | $V_{DD}$ = 480 V<br>$V_{GS}$ = 10 V<br>$I_D$ = 19 A |
| Gate to source charge | Qgs | — | 11.3 | — | nC | |
| Gate to drain charge | Qgd | — | 30.5 | — | nC | |
| Body-drain diode forward voltage | $V_{DF}$ | — | 1.05 | 1.75 | V | $I_F$ = 19 A, $V_{GS}$ = 0 Note4 |
| Body-drain diode reverse recovery time | $t_{rr}$ | — | 180 | — | ns | $I_F$ = 19 A, $V_{GS}$ = 0<br>$di_F/dt$ = 100 A/μs |

Notes: 4. Pulse test

## Package Dimensions

| Package Name | JEITA Package Code | RENESAS Code | Previous Code | MASS[Typ.] |
|---|---|---|---|---|
| TO-3P | SC-65 | PRSS0004ZE-A | TO-3P / TO-3PV | 5.0g |

Unit: mm




## Ordering Information

| Part No. | Quantity | Shipping Container |
|---|---|---|
| RJL6015DPK-00-T0 | 360 pcs | Box (Tube) |

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