

# 2SK3277

# Silicon N-channel power MOSFET

- Avalanche energy capability guaranteed
- High-speed switching
- No secondary breakdown

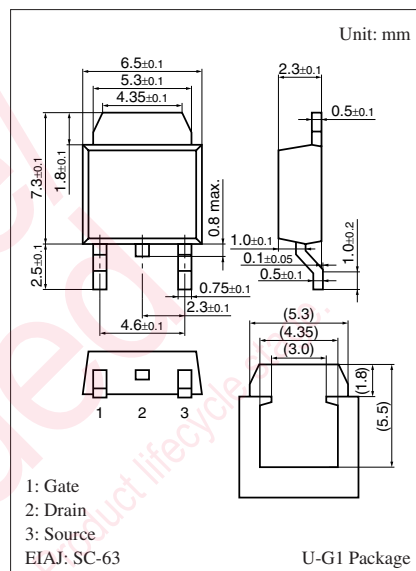
- Non-contact relay
- Solenoid drive
- Motor drive
- Control equipment
- Switching mode regulator

| Parameter                      | Symbol    | Rating      | Unit       |
|--------------------------------|-----------|-------------|------------|
| Drain-source surrender voltage | $V_{DSS}$ | 200         | V          |
| Gate-source surrender voltage  | $V_{GSS}$ | $\pm 20$    | V          |
| Drain current                  | $I_D$     | $\pm 2.5$   | A          |
| Peak drain current             | $I_{DP}$  | $\pm 5$     | A          |
| Avalanche energy capability *  | EAS       | 15          | mJ         |
| Power dissipation              | $P_D$     | 10          | W          |
|                                |           | 1           |            |
| $T_a = 25^\circ C$             |           |             |            |
| Channel temperature            | $T_{ch}$  | 150         | $^\circ C$ |
| Storage temperature            | $T_{stg}$ | -55 to +150 | $^\circ C$ |

■ Electrical Characteristics  $T_C = 25^\circ\text{C} \pm 3^\circ\text{C}$

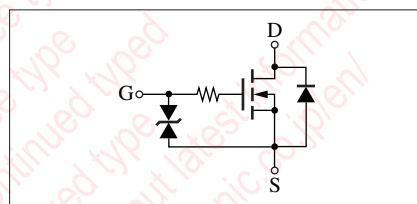
| Parameter                                                     | Symbol         | Conditions                                                                               | Min | Typ | Max      | Unit                 |
|---------------------------------------------------------------|----------------|------------------------------------------------------------------------------------------|-----|-----|----------|----------------------|
| Drain-source surrender voltage                                | $V_{DSS}$      | $I_D = 1 \text{ mA}, V_{GS} = 0$                                                         | 200 |     |          | V                    |
| Drain-source cutoff current                                   | $I_{DSS}$      | $V_{DS} = 160 \text{ V}, V_{GS} = 0$                                                     |     |     | 10       | $\mu\text{A}$        |
| Gate-source cutoff current                                    | $I_{GSS}$      | $V_{GS} = \pm 20 \text{ V}, V_{DS} = 0$                                                  |     |     | $\pm 10$ | $\mu\text{A}$        |
| Gate threshold voltage                                        | $V_{th}$       | $V_{DS} = 25 \text{ V}, I_D = 1 \text{ mA}$                                              | 2.0 |     | 4.0      | V                    |
| Drain-source ON resistance                                    | $R_{DS(on)}$   | $V_{GS} = 10 \text{ V}, I_D = 1.25 \text{ A}$                                            |     | 1.2 | 1.7      | $\Omega$             |
| Forward transfer admittance                                   | $ Y_{fs} $     | $V_{DS} = 25 \text{ V}, I_D = 1.25 \text{ A}$                                            | 0.7 | 1.3 |          | S                    |
| Diode forward voltage                                         | $V_{DF}$       | $I_{DR} = 2.5 \text{ A}, V_{GS} = 0$                                                     |     |     | -1.4     | V                    |
| Short-circuit forward transfer capacitance<br>(Common source) | $C_{iss}$      | $V_{DS} = 20 \text{ V}, V_{GS} = 0, f = 1 \text{ MHz}$                                   |     | 170 |          | pF                   |
| Short-circuit output capacitance<br>(Common source)           | $C_{oss}$      |                                                                                          |     | 25  |          | pF                   |
| Reverse transfer capacitance<br>(Common source)               | $C_{rss}$      |                                                                                          |     | 15  |          | pF                   |
| Turn-on delay time                                            | $t_{d(on)}$    | $V_{DD} = 100 \text{ V}, I_D = 1 \text{ A}, R_L = 100 \Omega$<br>$V_{GS} = 10 \text{ V}$ |     | 18  |          | ns                   |
| Rise time                                                     | $t_r$          |                                                                                          |     | 35  |          | ns                   |
| Turn-off delay time                                           | $t_{d(off)}$   |                                                                                          |     | 200 |          | ns                   |
| Fall time                                                     | $t_f$          |                                                                                          |     | 60  |          | ns                   |
| Thermal resistance (ch-c)                                     | $R_{th(ch-c)}$ |                                                                                          |     |     | 12.5     | $^{\circ}\text{C/W}$ |
| Thermal resistance (ch-a)                                     | $R_{th(ch-a)}$ |                                                                                          |     |     | 125      | $^{\circ}\text{C/W}$ |

Note) Measuring methods are based on JAPANESE INDUSTRIAL STANDARD JIS C 7030 measuring methods for transistors.

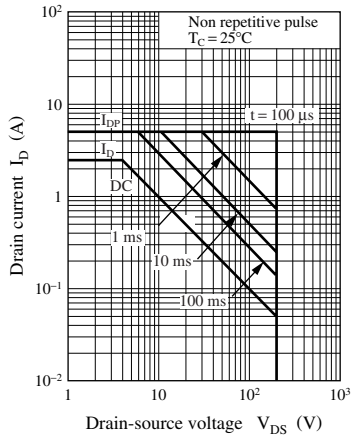
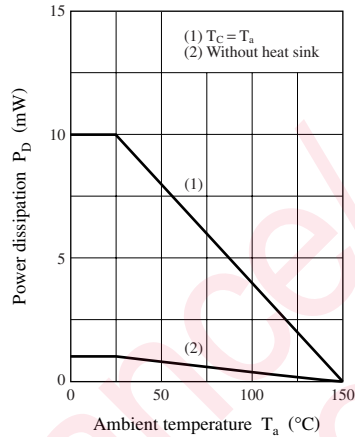


Marking Symbol: K3277

### Internal Connection



Safe operation area

 $P_D - T_a$ 

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