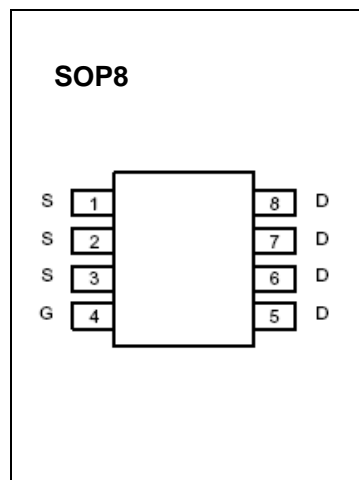
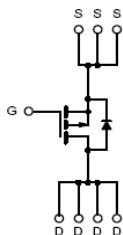


## SOP8 Plastic-Encapsulate MOSFETS

### CJQ9435 P-Channel 30-V(D-S) MOSFET

#### Equivalent circuit



#### Maximum ratings ( $T_a=25^{\circ}\text{C}$ unless otherwise noted)

| Parameter                                     | Symbol          | Value     | Unit                        |
|---|-----------------|-----------|-----------------------------|
| Drain-Source Voltage                          | $V_{DS}$        | -30       | V                           |
| Gate-Source Voltage                           | $V_{GS}$        | $\pm 24$  |                             |
| Continuous Drain Current*                     | $I_D$           | $\pm 5.1$ | A                           |
| Pulsed Drain Current                          | $I_{DM}$        | $\pm 20$  |                             |
| Continuous Source Current(Diode Conduction) * | $I_S$           | -2.6      |                             |
| Thermal Resistance from Junction to Ambient*  | $R_{\theta JA}$ | 100       | $^{\circ}\text{C}/\text{W}$ |
| Junction Temperature                          | $T_J$           | 150       | $^{\circ}\text{C}$          |
| Storage Temperature                           | $T_{STG}$       | -55 ~+150 |                             |

\*  $t \leq 10\text{s}$

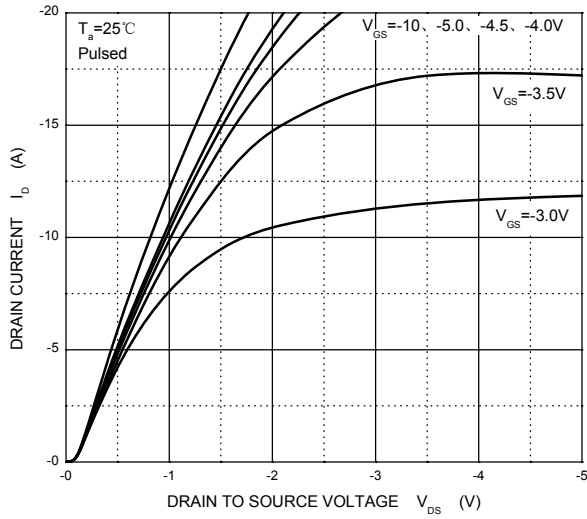
**Electrical characteristics ( $T_a=25^\circ\text{C}$  unless otherwise noted)**

| Parameter                               | Symbol       | Test Condition   | Min  | Typ | Max       | Unit          |
|---|--------------|--|------|-----|-----------|---------------|
| <b>Static</b>                           |              |  |      |     |           |               |
| Gate-threshold voltage                  | $V_{GS(th)}$ | $V_{DS}=V_{GS}, I_D=-250\mu\text{A}$   | -1.0 |     | -2        | V             |
| Gate-body leakage                       | $I_{GSS}$    | $V_{DS}=0\text{V}, V_{GS}=\pm 24\text{V}$  |      |     | $\pm 100$ | nA            |
| Zero gate voltage drain current         | $I_{DSS}$    | $V_{DS}=-24\text{V}, V_{GS}=0\text{V}$   |      |     | -1        | $\mu\text{A}$ |
| Drain-source on-resistance <sup>a</sup> | $r_{DS(on)}$ | $V_{GS}=-10\text{V}, I_D=-4.6\text{A}$   |      |     | 60        | m $\Omega$    |
|   |              | $V_{GS}=-6\text{V}, I_D=-4.1\text{A}$  |      |     | 70        |               |
|   |              | $V_{GS}=-4.5\text{V}, I_D=-2\text{A}$  |      |     | 105       |               |
| Forward transconductance <sup>a</sup>   | $g_{fs}$     | $V_{DS}=-15\text{V}, I_D=-4.6\text{A}$   | 5.0  |     |           | S             |
| Diode forward voltage <sup>a</sup>      | $V_{SD}$     | $I_S=-2.6\text{A}, V_{GS}=0\text{V}$   |      |     | -1.2      | V             |
| <b>Dynamic</b>                          |              |  |      |     |           |               |
| Total gate charge <sup>b</sup>          | $Q_g$        | $V_{DS}=-15\text{V}, V_{GS}=-10\text{V}, I_D=-4.6\text{A}$                                 |      |     | 40        | nC            |
| Gate-source charge <sup>b</sup>         | $Q_{gs}$     |  |      | 4   |           |               |
| Gate-drain charge <sup>b</sup>          | $Q_{gd}$     |  |      | 6.3 |           |               |
| Turn-on delay time <sup>b,c</sup>       | $t_{d(on)}$  | $V_{DD}=-15\text{V}, R_L=15\Omega, I_D\approx-1\text{A}, V_{GEN}=-10\text{V}, R_G=6\Omega$ |      |     | 30        | ns            |
| Rise time <sup>b,c</sup>                | $t_r$        |  |      |     | 60        |               |
| Turn-off delay time <sup>b,c</sup>      | $t_{d(off)}$ |  |      |     | 120       |               |
| Fall time <sup>b,c</sup>                | $t_f$        |  |      |     | 100       |               |

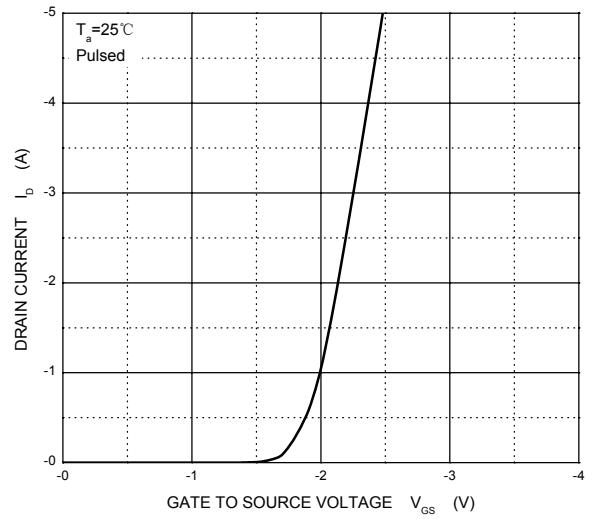
**Notes :**

- Pulse Test : Pulse width  $\leq 300\mu\text{s}$ , duty cycle  $\leq 2\%$ .
- Guaranteed by design, not subject to production testing.
- These parameters have no way to verify.

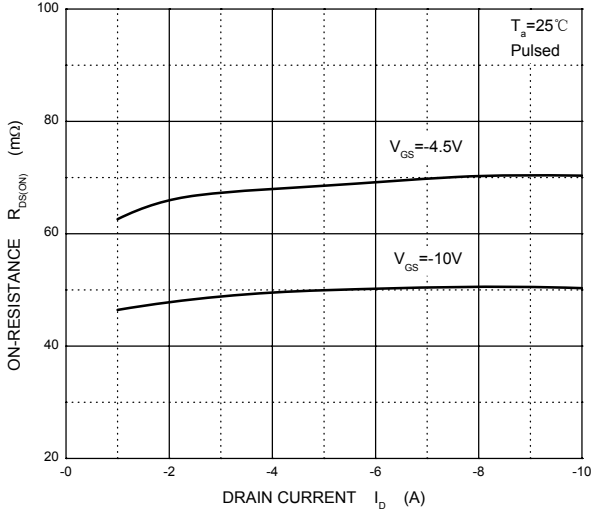
Output Characteristics



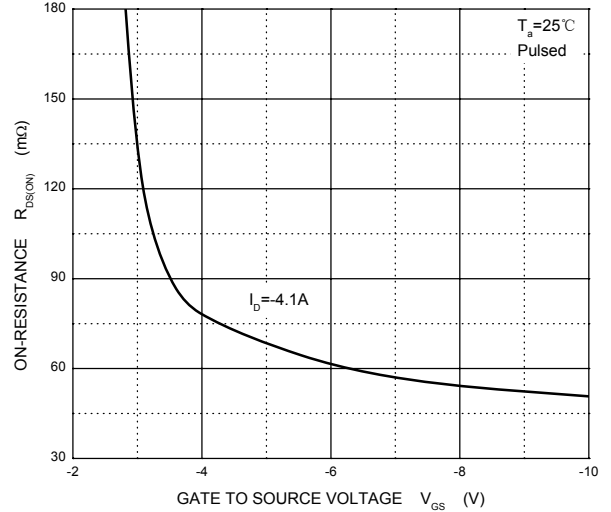
Transfer Characteristics



$R_{DS(ON)}$  —  $I_D$



$R_{DS(ON)}$  —  $V_{GS}$



$I_S$  —  $V_{SD}$

