

# 2SK2380

## Silicon N-Channel Junction FET

For impedance conversion in low frequency

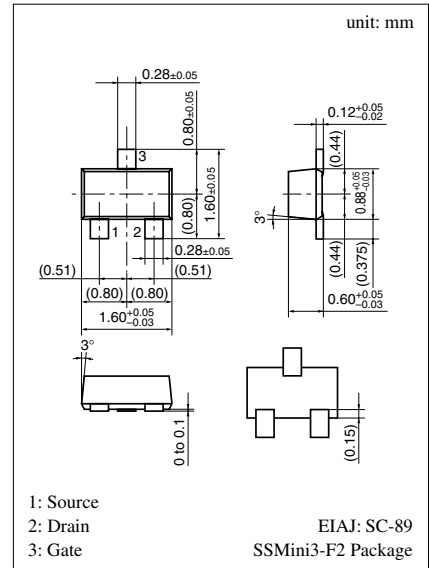
For infrared sensor

### ■ Features

- Low gate to source leakage current,  $I_{GSS}$
- Small capacitance of  $C_{iss}$ ,  $C_{oss}$ ,  $C_{rss}$
- SS-mini type package, allowing downsizing of the sets and automatic insertion through the tape/magazine packing.

### ■ Absolute Maximum Ratings ( $T_a = 25^\circ\text{C}$ )

| Parameter                   | Symbol    | Ratings     | Unit             |
|-----------------------------|-----------|-------------|------------------|
| Gate to Drain voltage       | $V_{GDO}$ | -40         | V                |
| Gate to Source voltage      | $V_{GSO}$ | -40         | V                |
| Drain current               | $I_D$     | $\pm 1$     | mA               |
| Gate current                | $I_G$     | 10          | mA               |
| Allowable power dissipation | $P_D$     | 125         | mW               |
| Channel temperature         | $T_{ch}$  | 125         | $^\circ\text{C}$ |
| Storage temperature         | $T_{stg}$ | -55 to +125 | $^\circ\text{C}$ |



Marking Symbol (Example): EB

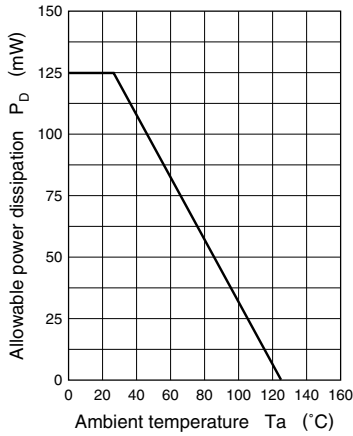
### ■ Electrical Characteristics ( $T_a = 25^\circ\text{C}$ )

| Parameter                                    | Symbol      | Conditions                                         | min  | typ  | max  | Unit          |
|----------------------------------------------|-------------|----------------------------------------------------|------|------|------|---------------|
| Drain to Source cut-off current              | $I_{DSS}^*$ | $V_{DS} = 10\text{V}, V_{GS} = 0$                  | 50   |      | 200  | $\mu\text{A}$ |
| Gate to Source leakage current               | $I_{GSS}$   | $V_{GS} = -20\text{V}, V_{DS} = 0$                 |      |      | -0.5 | nA            |
| Gate to Drain voltage                        | $V_{DS}$    | $I_G = -10\mu\text{A}, V_{DS} = 0$                 | -40  |      |      | V             |
| Gate to Source cut-off voltage               | $V_{GSC}$   | $V_{DS} = 10\text{V}, I_D = 1\mu\text{A}$          |      | -1.3 | -3   | V             |
| Forward transfer admittance                  | $ Y_{fs} $  | $V_{DS} = 10\text{V}, V_{GS} = 0, f = 1\text{kHz}$ | 0.05 |      |      | mS            |
| Input capacitance (Common Source)            | $C_{iss}$   | $V_{DS} = 10\text{V}, V_{GS} = 0, f = 1\text{MHz}$ |      | 1    |      | pF            |
| Output capacitance (Common Source)           | $C_{oss}$   |                                                    |      | 0.4  |      | pF            |
| Reverse transfer capacitance (Common Source) | $C_{rss}$   |                                                    |      | 0.4  |      | pF            |

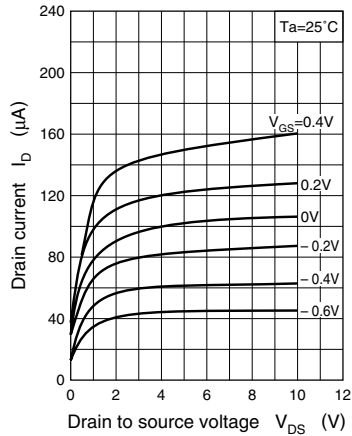
\*  $I_{DSS}$  rank classification

| Runk           | Q         | R         | S          |
|----------------|-----------|-----------|------------|
| $I_{DSS}$ (mA) | 50 to 100 | 70 to 130 | 100 to 200 |
| Marking Symbol | EBQ       | EBR       | EBS        |

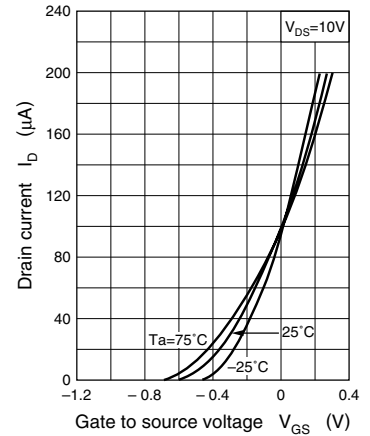
$P_D - T_a$



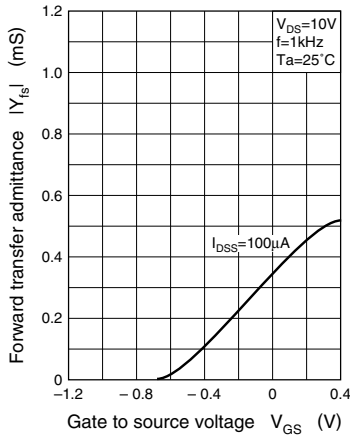
$I_D - V_{DS}$



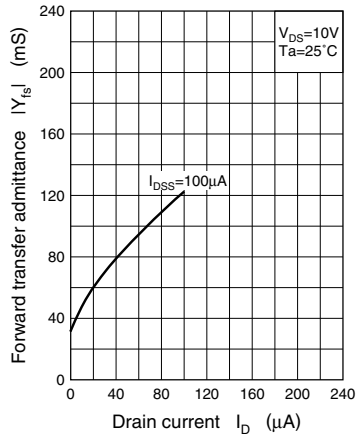
$I_D - V_{GS}$



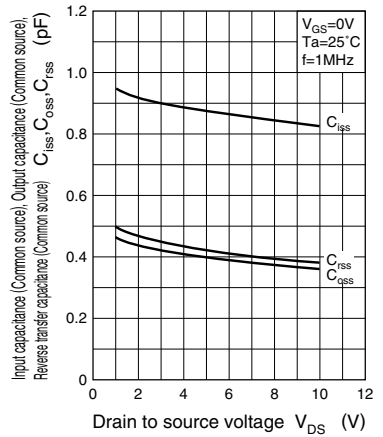
$|Y_{fs}| - V_{GS}$



$|Y_{fs}| - I_D$



$C_{iss}, C_{oss}, C_{rss} - V_{DS}$



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