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台舟电子

# SI2319CDS

**40V P-Channel Enhancement Mode MOSFET**

www.sot23.com.tw

## Product Summary

- $R_{DS(ON)}$, $V_{GS}$@-10V, $I_D$@-3.0A<88mΩ
- $R_{DS(ON)}$, $V_{GS}$@-4.5V, $I_D$@-2.6A<108mΩ

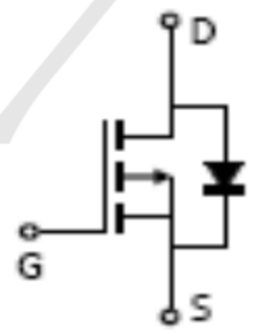
## Application

- Load/Power Switching
- Interfacing Switching
- Logic Level Shift

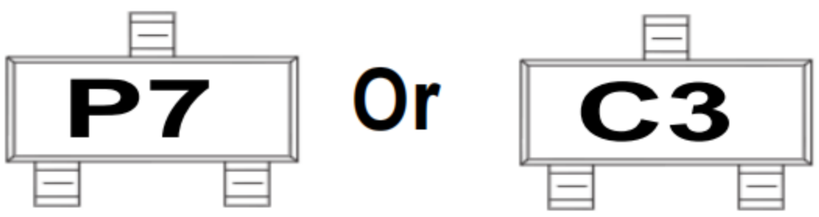
## Package and Pin Configuration

**SOT-23**


**Circuit diagram**




## Marking:



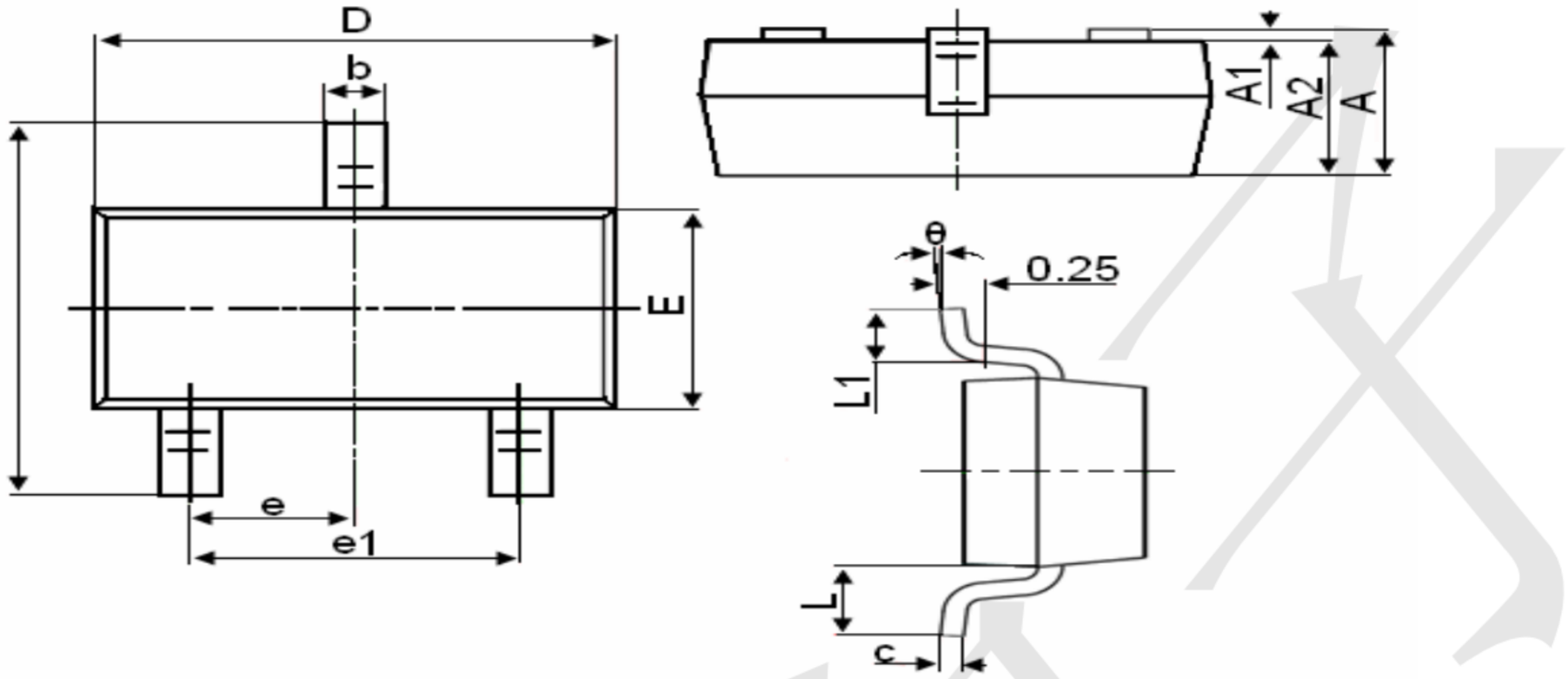

**Absolute Maximum Ratings ($T_A$=25℃unless otherwise noted)**

| PARAMETER | | SYMBOL | LIMIT | UNITS |
|---|---|---|---|---|
| Drain-Source Voltage | | $V_{DS}$ | -40 | V |
| Gate-Source Voltage | | $V_{GS}$ | ±20 | |
| Continuous Drain Current | | $I_D$ | -3.0 | A |
| Pulsed Drain Current (Note 4) | | $I_{DM}$ | -12.4 | |
| Power Dissipation | $T_a$=25°C | $P_D$ | 1.25 | W |
| | Derate above 25°C | | 10 | mW/°C |
| Operating Junction and Storage Temperature Range | | $T_J$,$T_{STG}$ | -55~150 | °C |
| Typical Thermal Resistance - Junction to Ambient (Note 3) | | $R_{\theta JA}$ | 100 | °C/W |

**Electrical Characteristics ($T_J$=25 ℃, unless otherwise noted)**

| PARAMETER | SYMBOL | TEST CONDITION | MIN. | TYP. | MAX. | UNITS |
|---|---|---|---|---|---|---|
| **Static** | | | | | | |
| Drain-Source Breakdown Voltage | $BV_{DSS}$ | $V_{GS}$=0V, $I_D$=-250uA | -40 | - | - | V |
| Gate Threshold Voltage | $V_{GS(th)}$ | $V_{DS}$=$V_{GS}$, $I_D$=-250uA | -1.0 | -1.5 | -2.5 | |
| Drain-Source On-State Resistance | $R_{DS(on)}$ | $V_{GS}$=-10V, $I_D$=-3.1A | - | | 95 | mΩ |
| | | $V_{GS}$=-4.5V, $I_D$=-1.2A | - | | 158 | |
| Zero Gate Voltage Drain Current | $I_{DSS}$ | $V_{DS}$=-40V, $V_{GS}$=0V | - | - | -1 | uA |
| Gate-Source Leakage Current | $I_{GSS}$ | $V_{GS}$=±20V, $V_{DS}$=0V | - | - | ±100 | nA |
| **Dynamic** (Note 5) | | | | | | |
| Total Gate Charge | $Q_g$ | $V_{DS}$=-20V, $I_D$=-3.1A, $V_{GS}$=-4.5V (Note 1,2) | - | 6 | - | nC |
| Gate-Source Charge | $Q_{gs}$ | | - | 1.6 | - | |
| Gate-Drain Charge | $Q_{gd}$ | | - | 2.3 | - | |
| Input Capacitance | Ciss | $V_{DS}$=-20V, $V_{GS}$=0V, f=1.0MHZ | - | 505 | - | pF |
| Output Capacitance | Coss | | - | 48 | - | |
| Reverse Transfer Capacitance | Crss | | - | 33 | - | |
| Turn-On Delay Time | $td_{(on)}$ | $V_{DD}$=-20V, $I_D$=-2.5A, $V_{GS}$=-10V, $R_G$=1Ω (Note 1,2) | - | 6 | - | ns |
| Turn-On Rise Time | tr | | - | 35 | - | |
| Turn-Off Delay Time | $td_{(off)}$ | | - | 18 | - | |
| Turn-Off Fall Time | tf | | - | 10 | - | |
| **Drain-Source Diode** | | | | | | |
| Maximum Continuous Drain-Source Diode Forward Current | $I_S$ | --- | - | - | -1.0 | A |
| Diode Forward Voltage | $V_{SD}$ | $I_S$=-1.0A, $V_{GS}$=0V | - | -0.82 | -1.2 | V |
| Reverse Recovery Time | trr | $V_{GS}$=0V, $I_S$=-2.5A, $dI_F$/ dt=100A/us | - | 13 | - | ns |
| Reverse Recovery Charge | Qrr | | - | 8.7 | - | nC |

## SOT-23 Package Information




| Symbol | Dimensions in Millimeters | |
|---|---|---|
| | MIN. | MAX. |
| A | 0.900 | 1.150 |
| A1 | 0.000 | 0.100 |
| A2 | 0.900 | 1.050 |
| b | 0.300 | 0.500 |
| c | 0.080 | 0.150 |
| D | 2.800 | 3.000 |
| E | 1.200 | 1.400 |
| E1 | 2.250 | 2.550 |
| e | 0.950TYP | |
| e1 | 1.800 | 2.000 |
| L | 0.550REF | |
| L1 | 0.300 | 0.500 |
| θ | 0° | 8° |

## Marking: