Micro Commercial Components
130 W Cochran St, Unit B
Simi Valley, CA 93065
Tel:818-701-4933

# SI2324A

## N-Channel Enhancement Mode Field Effect Transistor

## Features

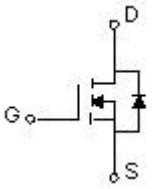
- Halogen free available upon request by adding suffix "-HF"
- TrenchFET Power Mosfet
- Low $R_{DS(ON)}$
- Epoxy meets UL 94 V-0 flammability rating
- Moisture Sensitivity Level 1

### Maximum Ratings @ 25 C Unless Otherwise Specified

| Symbol | Parameter | Rating | Unit |
|---|---|---|---|
| $V_{DS}$ | Drain-source Voltage | 100 | V |
| $I_D$ | Continuous Drain Current | 2 | A |
| $P_D$ | Total Power Dissipation | 1.2 | W |
| $V_{GS}$ | Gate-source Voltage | ±20 | V |
| $R_{\theta JA}$ | Thermal Resistance from Junction to Ambient | 105 | ℃/W |
| $T_J$ | Operating Junction Temperature | -55 to +150 | ℃ |
| $T_{STG}$ | Storage Temperature | -55 to +150 | ℃ |

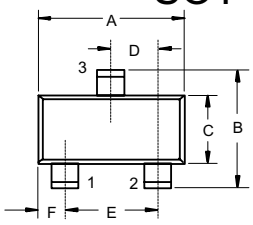
NOTE 1. Repetitive rating: Pluse width limited by junction temperature.

## Internal Block Diagram

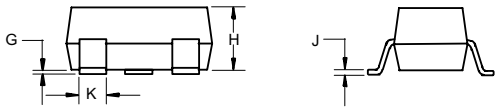



**Marking:1002**

## SOT-23

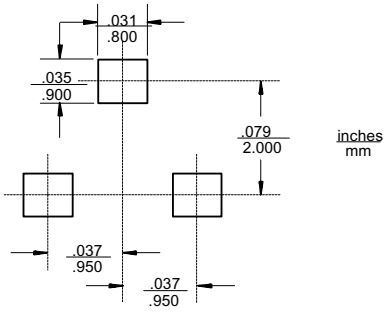



1.GATE
2. SOURCE
3. DRAIN




| DIMENSIONS | | | | | |
|---|---|---|---|---|---|
| | INCHES | | MM | | |
| DIM | MIN | MAX | MIN | MAX | NOTE |
| A | .110 | .120 | 2.80 | 3.04 | |
| B | .083 | .104 | 2.10 | 2.64 | |
| C | .047 | .055 | 1.20 | 1.40 | |
| D | .035 | .041 | .89 | 1.03 | |
| E | .070 | .081 | 1.78 | 2.05 | |
| F | .018 | .024 | .45 | .60 | |
| G | .0005 | .0039 | .013 | .100 | |
| H | .035 | .044 | .89 | 1.12 | |
| J | .003 | .007 | .085 | .180 | |
| K | .015 | .020 | .37 | .51 | |

Suggested Solder Pad Layout



# SI2324A

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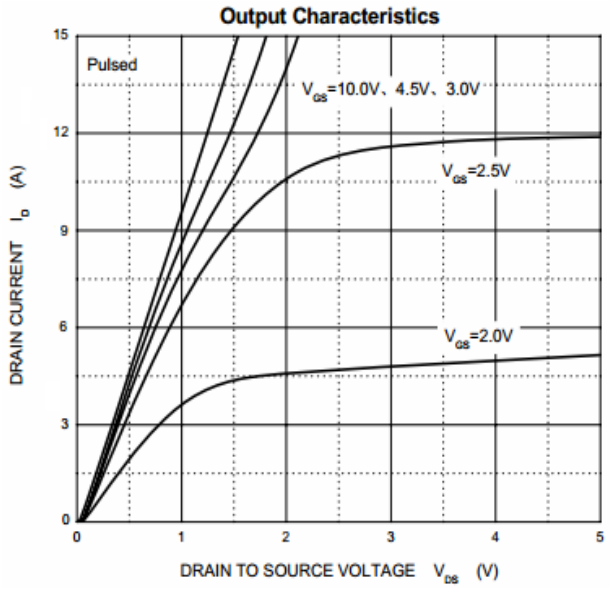
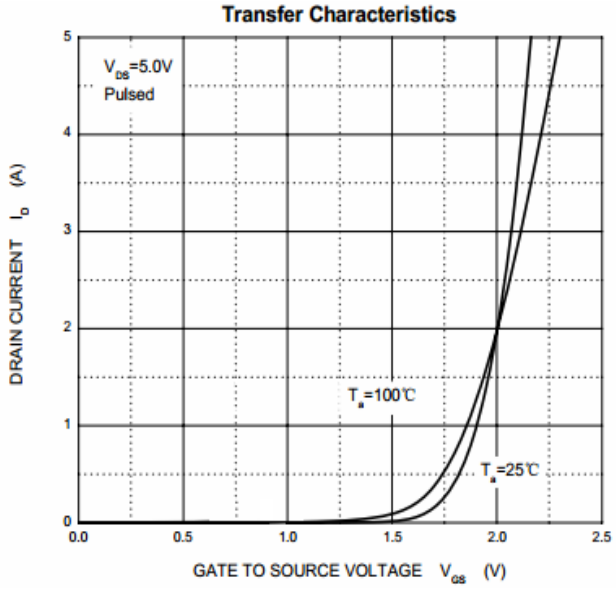
## Electrical characteristics ($T_a$=25°C unless otherwise noted )

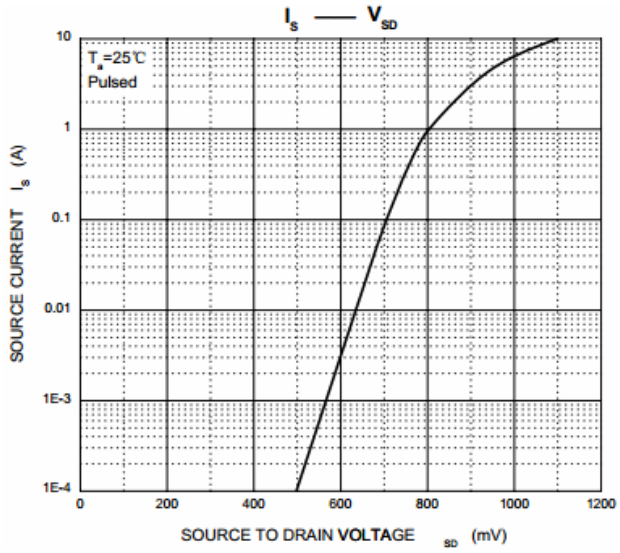
| Parameter | Symbol | Test conditions | Min | Typ | Max | Unit |
|---|---|---|---|---|---|---|
| **Static Characteristics** | | | | | | |
| Drain-source breakdown voltage | $V_{(BR)DSS}$ | $V_{GS}$= 0V, $I_D$=250μA | 100 | | | V |
| Zero gate voltage drain current | $I_{DSS}$ | $V_{DS}$=100V,$V_{GS}$=0V | | | 1 | μA |
| Gate-body leakage current | $I_{GSS}$ | $V_{GS}$= ±20V, $V_{DS}$=0V | | | ±100 | nA |
| Gate threshold voltage* | $V_{GS(th)}$ | $V_{DS}$= $V_{GS}$, $I_D$=250μA | 1.0 | 1.5 | 2.0 | V |
| Drain-source on-resistance* | $R_{DS(ON)}$ | $V_{GS}$= 10V, $I_D$=2.0A | | 250 | 280 | mΩ |
| | | $V_{GS}$= 4.5V, $I_D$=2.0A | | 260 | 300 | |
| Forward Transconductance | $g_{FS}$ | $V_{DS}$= 5V, $I_D$=2.0A | 2 | | | s |
| **Dynamic Characteristics **** | | | | | | |
| Input Capacitance | $C_{iss}$ | VDS=15V,VGS=0V,f=1MHZ | | 520 | | pF |
| Output Capacitance | $C_{oss}$ | | | 130 | | |
| Reverse Transfer Capacitance | $C_{rss}$ | | | 36 | | |
| **Switching Characteristics**** | | | | | | |
| Turn-on delay time | $t_{d(on)}$ | $V_{DD}$=10V,$V_{GS}$=4.5V,RL=2.8Ω,$I_D$=1A,$R_{GEN}$=6Ω | | 12 | | ns |
| Turn-on rise time | $t_r$ | | | 52 | | |
| Turn-off delay time | $t_{d(off)}$ | | | 17 | | |
| Turn-off Fall time | $t_f$ | | | 10 | | |
| Total Gate Charge | $Q_g$ | $V_{DS}$=10V,$I_D$=2.0A,$V_{GS}$=4.5V | | 4.8 | | nC |
| Gate-Source Charge | $Q_{gs}$ | | | 1.2 | | |
| Gate-Drain Charge | $Q_{gd}$ | | | 1.7 | | |
| **Source-Drain Diode characteristics** | | | | | | |
| Drain-Source Diode Forward Current | $I_S$ | | | | 2.0 | A |
| Diode Forward voltage | $V_{SD}$ | $V_{GS}$=0V,$I_S$=2.0A | | 0.9 | 1.2 | V |

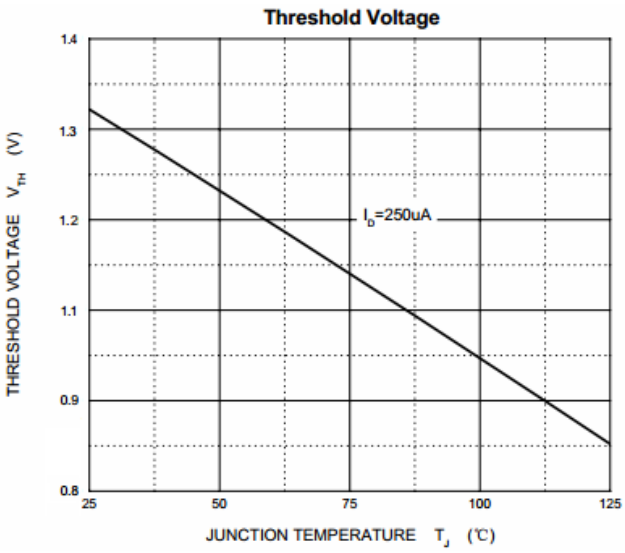
Notes:
*Pulse Test: Pulse Width≤300μA, Duty Cycle≤2%.
**These parameters have no way to verify.

## Typical Characteristics



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## Ordering Information :

| Device | Packing |
|---|---|
| Part Number-TP | Tape&Reel: 3Kpcs/Reel |

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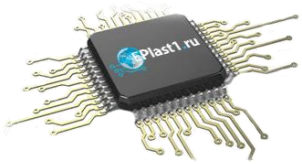
- Консультации по применению компонента;
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.




**Как с нами связаться**

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