



Micro Commercial Components



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SI3420

N-Channel Enhancement Mode Field Effect Transistor

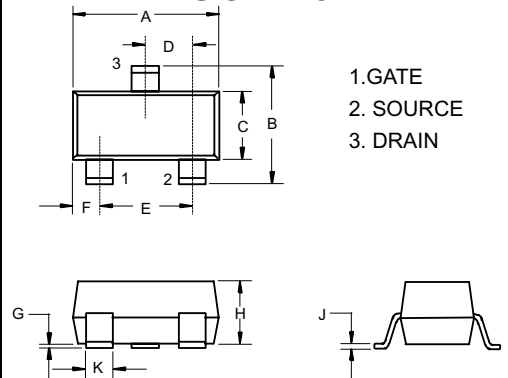
Features

- High dense cell design for extremely low RDS(ON)
Rugged and reliable
Lead free product is acquired
SOT-23 Package
Marking Code: R20
Epoxy meets UL 94 V-0 flammability rating
Moisture Sensitivity Level 1
Halogen free available upon request by adding suffix "-HF"

Maximum Ratings @ 25°C Unless Otherwise Specified

Table with 4 columns: Symbol, Parameter, Rating, Unit. Rows include VDS, ID, IDM, VGS, PD, RJA, TJ, TSTG.

SOT-23



- 1. GATE
2. SOURCE
3. DRAIN

Internal Structure and Marking Code

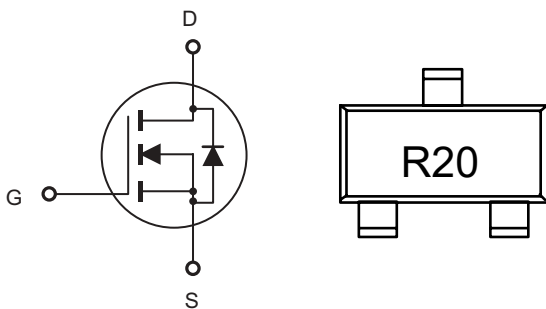
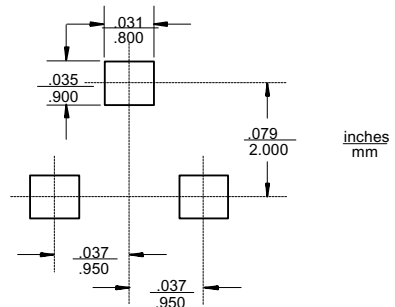


Table with 6 columns: DIM, INCHES (MIN, MAX), MM (MIN, MAX), NOTE. Rows include dimensions A through K.

Suggested Solder Pad Layout



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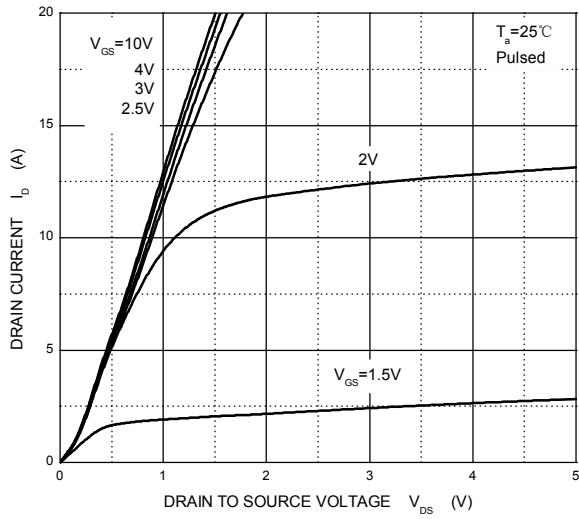
Electrical Characteristics $T_A = 25^\circ\text{C}$ unless otherwise noted

| Parameter | Symbol | Test Condition | Min | Typ | Max | Units |
|----------------------------------|---------------|--|-----|------|-----------|------------|
| STATIC PARAMETERS | | | | | | |
| Drain-source breakdown voltage | $V_{(BR)DSS}$ | $V_{GS} = 0V, I_D = 250\mu A$ | 20 | | | V |
| Zero gate voltage drain current | I_{DSS} | $V_{DS} = 16V, V_{GS} = 0V$ | | | 1 | μA |
| Gate-body leakage current | I_{GSS} | $V_{GS} = \pm 12V, V_{DS} = 0V$ | | | ± 100 | nA |
| Gate threshold voltage | $V_{GS(th)}$ | $V_{DS} = V_{GS}, I_D = 250\mu A$ | 0.5 | 0.7 | 3 | V |
| Drain-source on-state resistance | $R_{DS(on)}$ | $V_{GS} = 10V, I_D = 6.0A$ | | 19 | 24 | m Ω |
| | | $V_{GS} = 4.5V, I_D = 5.0A$ | | 22 | 27 | m Ω |
| | | $V_{GS} = 2.5V, I_D = 4.0A$ | | 35 | 42 | m Ω |
| | | $V_{GS} = 1.8V, I_D = 2.0A$ | | | 74 | m Ω |
| Forward transconductance | g_{FS} | $V_{DS} = 5V, I_D = 3.8A$ | 4 | | | S |
| Diode forward voltage | V_{SD} | $V_{GS} = 0V, I_S = 1.0A$ | | 0.75 | 1 | V |
| DYNAMIC PARAMETERS* | | | | | | |
| Input capacitance | C_{iss} | $V_{DS} = 10V, V_{GS} = 0V, f = 1MHz$ | | 630 | | pF |
| Output capacitance | C_{oss} | | | 164 | | pF |
| Reverse transfer capacitance | C_{rss} | | | 137 | | pF |
| Gate resistance | R_g | $V_{DS} = 0V, V_{GS} = 0V, f = 1MHz$ | | 1.5 | | Ω |
| SWITCHING PARAMETERS* | | | | | | |
| Turn-on delay time | $t_{d(on)}$ | $V_{GS} = 5V, V_{DS} = 10V,$ $R_L = 1.7\Omega, R_{GEN} = 6\Omega$ | | 5.5 | | ns |
| Turn-on rise time | t_r | | | 14 | | ns |
| Turn-off delay time | $t_{d(off)}$ | | | 29 | | ns |
| Turn-off fall time | t_f | | | 10.2 | | ns |

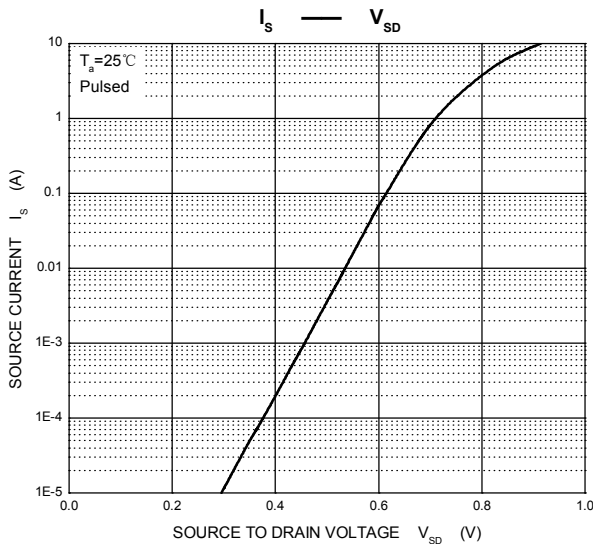
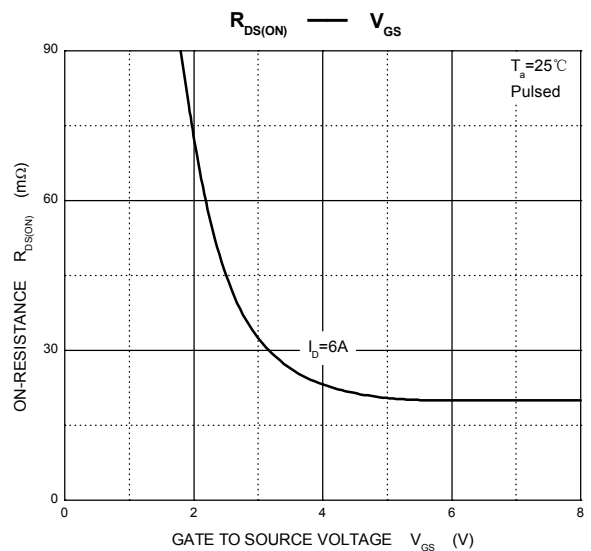
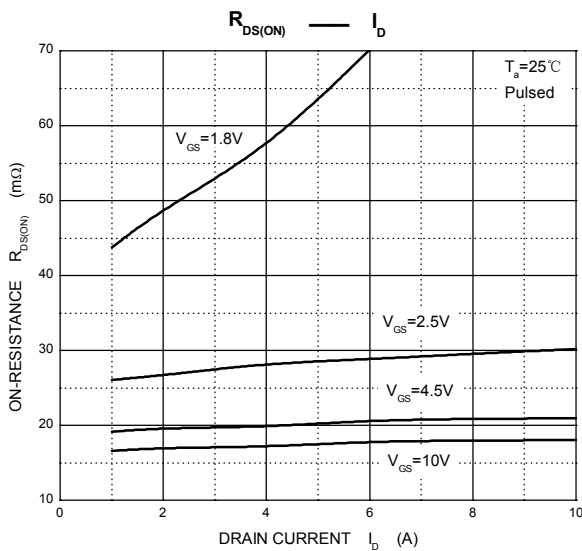
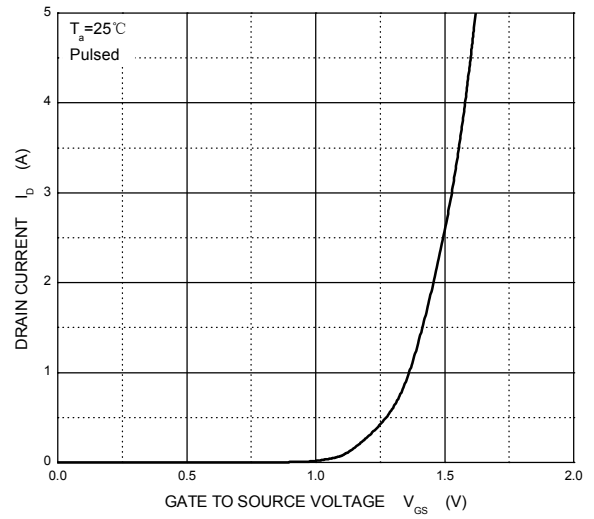
* These parameters have no way to verify.

SI3420

Output Characteristics



Transfer Characteristics





TM

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Ordering Information :

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

Note : Adding "-HF" suffix for halogen free, eg. Part Number-TP-HF

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