



Micro Commercial Components



Micro Commercial Components
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MCX3152P

Dual P-Channel MOSFET

Features

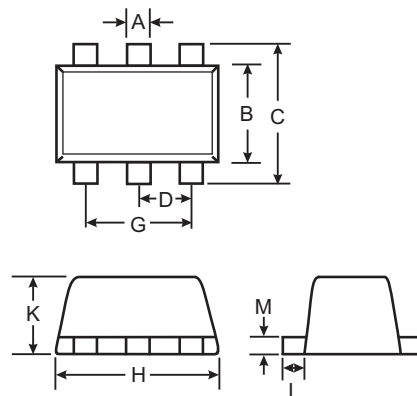
- Halogen free available upon request by adding suffix "-HF"
- Lead Free Finish/RoHS Compliant ("P" Suffix designates RoHS Compliant. See ordering information)
- P-Channel Swith with Low $R_{DS(ON)}$
- ESD Protected Gate
- Epoxy meets UL 94 V-0 flammability rating
- Moisture Sensitivity Level 1

Marking:3152

Maximum Ratings @ 25°C Unless Otherwise Specified

| Symbol | Rating | Rating | Unit |
|------------|--|---------|------|
| N-MOSFET | | | |
| V_{DS} | Drain-Source Voltage | -20 | V |
| V_{GS} | Gate-Source Voltage | ±12 | V |
| I_D | Continuous Drain Current (note1) | -0.66 | A |
| I_{DM} | Pulsed Drain Current (tp=10us) | -1.0 | A |
| P_D | Power Dissipation (note2) | 150 | mW |
| R_{thJA} | Thermal Resistance from Junction to Ambient(note1) | 833 | °C/W |
| T_J | Junction Temperature | 150 | °C |
| T_{STG} | Storage Temperature | -55~150 | °C |
| T_L | Lead Temperature for Soldering Purposes (1/8" from case for 10s) | 260 | °C |

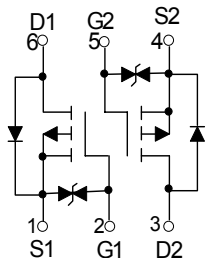
SOT-563



DIMENSIONS

| DIM | INCHES | | MM | | NOTE |
|-----|--------|------|------|------|------|
| | MIN | MAX | MIN | MAX | |
| A | .006 | .011 | 0.15 | 0.30 | |
| B | .043 | .049 | 1.10 | 1.25 | |
| C | .061 | .067 | 1.55 | 1.70 | |
| D | .020 | | 0.50 | | |
| G | .035 | .043 | 0.90 | 1.10 | |
| H | .059 | .067 | 1.50 | 1.70 | |
| K | .022 | .023 | 0.56 | 0.60 | |
| L | .004 | .011 | 0.10 | 0.30 | |
| M | .004 | .007 | 0.10 | 0.18 | |

Equivalent Circuit



MOSFET ELECTRICAL CHARACTERISTICS(T_a=25°C unless otherwise noted)

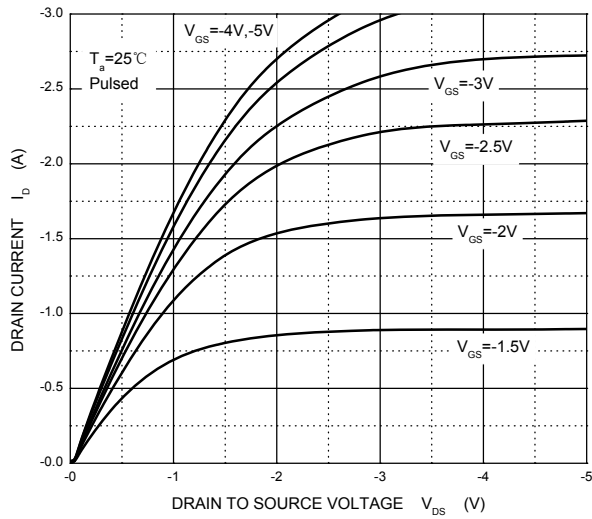
| Parameter | Symbol | Test Condition | Min | Typ | Max | Unit |
|--------------------------------------|----------------------|---|------|-------|------|------|
| STATIC PARAMETERS | | | | | | |
| Drain-source breakdown voltage | V _{(BR)DSS} | V _{GS} = 0V, I _D = -250μA | -20 | | | V |
| Zero gate voltage drain current | I _{DSS} | V _{DS} = -16V, V _{GS} = 0V | | | -1 | μA |
| Gate-body leakage current | I _{GSS} | V _{GS} = ±4.5V, V _{DS} = 0V | | | ±2 | μA |
| Gate threshold voltage (note 2) | V _{GS(th)} | V _{DS} = V _{GS} , I _D = -250μA | -0.4 | -0.45 | -1 | V |
| Drain-source on-resistance(note 2) | R _{DS(on)} | V _{GS} = -4.5V, I _D = -0.66A | | 0.45 | 0.7 | Ω |
| | | V _{GS} = -2.5V, I _D = -0.5A | | 0.55 | 1 | Ω |
| | | V _{GS} = -1.8V, I _D = -0.4A | | 0.72 | 1.2 | Ω |
| Forward transconductance(note 2) | g _{FS} | V _{DS} = -10V, I _D = -0.43A | | 1 | | S |
| Diode forward voltage | V _{SD} | I _S = -0.35A, V _{GS} = 0V | | | -1.2 | V |
| DYNAMIC PARAMETERS(note 4) | | | | | | |
| Input Capacitance | C _{iss} | V _{DS} = -16V, V _{GS} = 0V, f = 1MHz | | 105 | 175 | pF |
| Output Capacitance | C _{oss} | | | 15 | 30 | pF |
| Reverse Transfer Capacitance | C _{rss} | | | 10 | 20 | pF |
| SWITCHING PARAMETERS (note 4) | | | | | | |
| Turn-on delay time (note 3) | t _{d(on)} | V _{DD} = -4.5V, V _{GS} = -10V, I _D = -215mA, R _{GEN} = 10Ω | | 10 | | ns |
| Turn-on rise time (note 3) | t _r | | | 12 | | ns |
| Turn-off delay time (note 3) | t _{d(off)} | | | 35 | | ns |
| Turn-off fall time (note 3) | t _f | | | 19 | | ns |
| Total Gate Charge(note 3) | Q _g | V _{DS} = -10V, V _{GS} = -4.5V, I _D = -215mA | | 1.7 | 2.5 | nC |
| Gate Source Charge(note 3) | Q _{gs} | | | 0.3 | | nC |
| Gate Drain Charge(note 3) | Q _{gd} | | | 0.4 | | nC |

Notes :

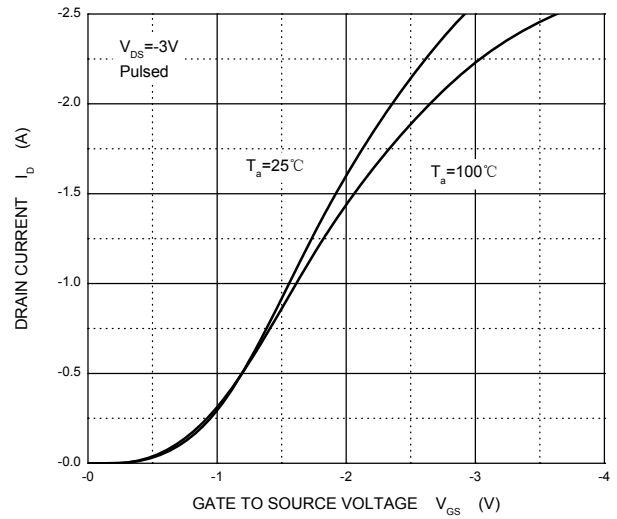
1. Surface mounted on FR4 board using the minimum recommended pad size.
2. Pulse Test : Pulse width = 300μs, duty cycle ≤ 2%.
3. Switching characteristics are independent of operating junction temperatures.
4. Granted by design, not subject to producing.

Typical Characteristics

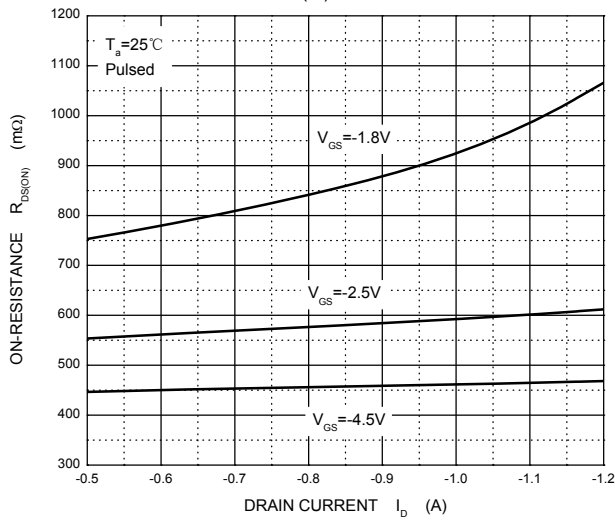
Output Characteristics



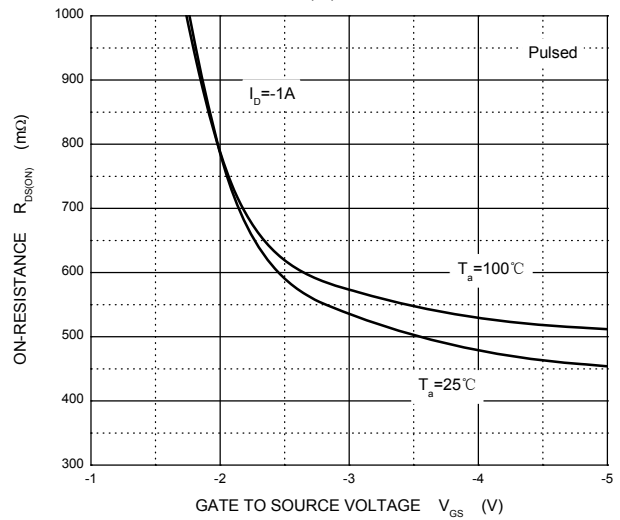
Transfer Characteristics



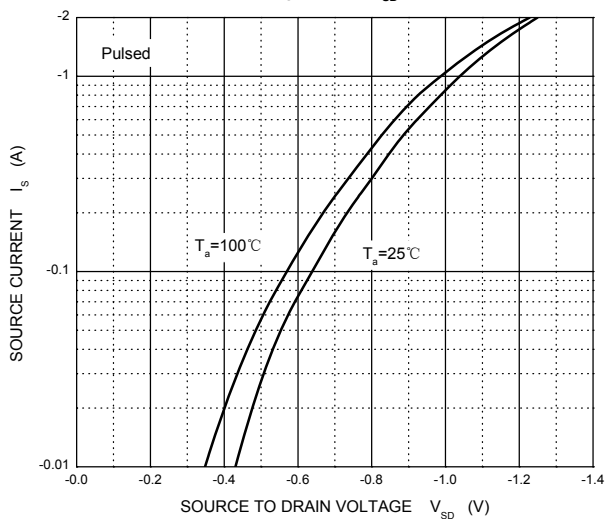
$R_{DS(ON)}$ — I_D



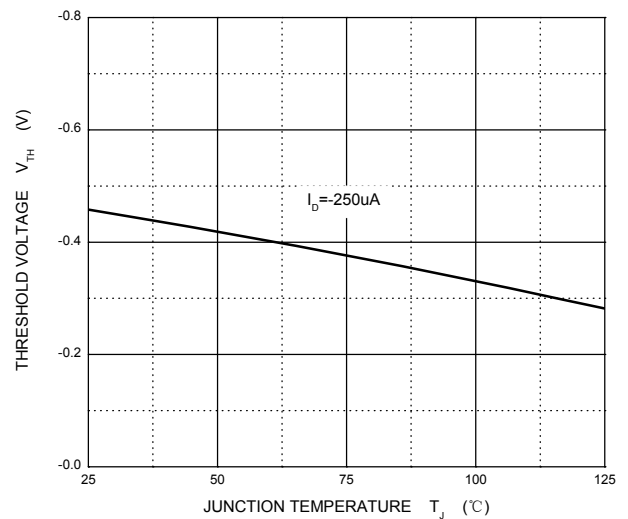
$R_{DS(ON)}$ — V_{GS}



I_S — V_{SD}



Threshold Voltage





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Ordering Information :

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

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

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