

RoHS Compliant Product
A suffix of "-C" specifies halogen & lead-free

FEATURES

- Low on-resistance
- Fast switching speed
- Drive circuits can be simple
- Parallel use is easy
- Low voltage drive makes this device ideal for portable equipment

APPLICATION

- Interfacing
- Switching

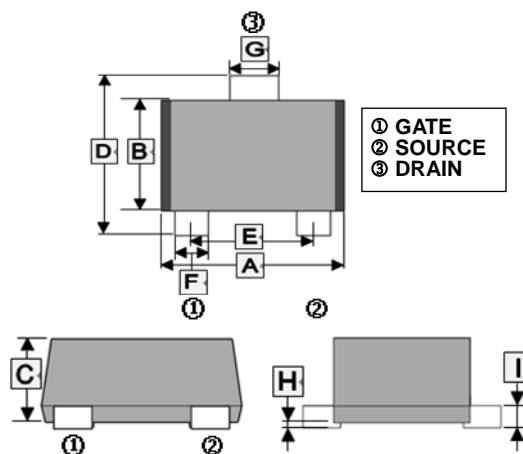
MARKING

KD

PACKAGE INFORMATION

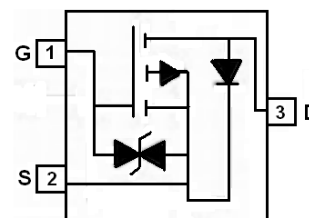
| Package | MPQ | Leader Size |
|---------|-----|-------------|
| SOT-723 | 8K | 7 inch |

SOT-723



| REF. | Millimeter | | REF. | Millimeter | |
|------|------------|-------|------|------------|-------|
| | Min. | Max. | | Min. | Max. |
| A | 1.150 | 1.250 | F | 0.170 | 0.270 |
| B | 0.750 | 0.850 | G | 0.270 | 0.370 |
| C | - | 0.500 | H | 0 | 0.050 |
| D | 1.150 | 1.250 | I | - | 0.150 |
| E | 0.800TYP. | | | | |

Top View



MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$ unless otherwise specified)

| Parameter | Symbol | Ratings | Unit |
|--|-----------------|--------------|-----------------------------|
| Drain-Source Voltage | V_{DS} | -20 | V |
| Gate-Source Voltage | V_{GS} | ± 6 | V |
| Continuous Drain Current ¹ | I_D | -0.66 | A |
| Pulsed Drain Current ($t_p=10\mu\text{s}$) | I_{DM} | -1.2 | A |
| Total Power Dissipation ¹ | P_D | 150 | mW |
| Thermal Resistance Junction-ambient ¹ | $R_{\theta JA}$ | 833 | $^\circ\text{C} / \text{W}$ |
| Lead Temperature for Soldering Purposes (1/8" from case for 10S) | T_L | 260 | $^\circ\text{C}$ |
| Operating Junction & Storage Temperature Range | T_J, T_{STG} | 150, -55~150 | $^\circ\text{C}$ |

Notes:

1. Surface mounted on FR4 board using the minimum recommended pad size

ELECTRICAL CHARACTERISTICS ($T_A=25^\circ\text{C}$ unless otherwise specified)

| Parameter | Symbol | Min. | Typ. | Max. | Unit | Test Conditions |
|---|---------------|-------|------|----------|---------------|--|
| Static | | | | | | |
| Drain-Source Breakdown Voltage | $V_{(BR)DSS}$ | -20 | - | - | V | $V_{GS}=0, I_D = -250\mu\text{A}$ |
| Zero Gate Voltage Drain Current | I_{DSS} | - | - | -1 | μA | $V_{DS} = -20\text{V}, V_{GS}=0$ |
| Gate-Body Leakage Current | I_{GSS} | - | - | ± 20 | μA | $V_{DS}=0, V_{GS}=\pm 12\text{V}$ |
| Gate Threshold Voltage ¹ | $V_{GS(th)}$ | -0.35 | - | -0.8 | V | $V_{DS} = V_{GS}, I_D = -250\mu\text{A}$ |
| Drain-Source On-Resistance ¹ | $R_{DS(ON)}$ | - | - | 520 | m Ω | $V_{GS} = -4.5\text{V}, I_D = 1\text{A}$ |
| | | - | - | 700 | | $V_{GS} = -2.5\text{V}, I_D = -0.8\text{A}$ |
| | | - | - | 950 | | $V_{GS} = -1.8\text{V}, I_D = -0.5\text{A}$ |
| Forward Transconductance ¹ | g_{fs} | - | 1.2 | - | S | $V_{DS} = -10\text{V}, I_D = -0.54\text{A}$ |
| Diode forward voltage | V_{SD} | - | - | -1.2 | V | $I_S = -0.5\text{A}, V_{DS}=0$ |
| Dynamic Characteristics ³ | | | | | | |
| Input Capacitance | C_{iss} | - | 113 | - | pF | $V_{DS} = -16\text{V},$ $V_{GS}=0,$ $f=1\text{MHz}$ |
| Output Capacitance | C_{oss} | - | 15 | - | | |
| Reverse Transfer Capacitance | C_{rss} | - | 9 | - | | |
| Switching Characteristics ³ | | | | | | |
| Turn-On Delay Time ² | $T_{d(on)}$ | - | 9 | - | nS | $V_{DS} = -10\text{V}$ $I_D = -200\text{mA}$ $V_{GS} = -4.5\text{V}$ $R_{GEN} = 10\Omega$ |
| Rise Time ² | T_r | - | 5.8 | - | | |
| Turn-Off Delay Time ² | $T_{d(off)}$ | - | 32.7 | - | | |
| Fall Time ² | T_f | - | 20.3 | - | | |

Notes:

1. Pulse Test : Pulse Width=300 μs , Duty Cycle=2%.
2. Switching characteristics are independent of operating junction temperatures.
3. Guaranteed by design, not subject to producing.

Typical Characteristics

