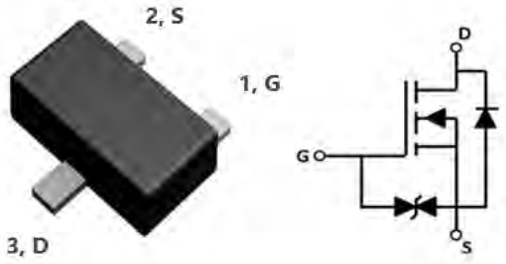
Leiditech

# LM3134KT

## N-Channel Enhancement Mode Fidld Effect Transistor




SOT-723

## Product Summary

- $V_{DS}$ 20V
- $I_D$ 0.75A
- $R_{DS(ON)}$( at $V_{GS}$=4.5V) ＜250 mohm
- $R_{DS(ON)}$( at $V_{GS}$=2.5V) ＜350 mohm
- ESD Protected Up to 3.0KV (HBM)

## General Description

- Trench Power LV MOSFET technology
- High Power and current handing capability
- Moisture Sensitivity: Level 3 per J-STD-020

## Applications

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

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

| Parameter | | Symbol | Limit | Unit |
|---|---|---|---|---|
| Drain-source Voltage | | $V_{DS}$ | 20 | V |
| Gate-source Voltage | | $V_{GS}$ | ±12 | V |
| Drain Current | $T_A$=25℃ @ Steady State | $I_D$ | 0.75 | A |
| | $T_A$=70℃ @ Steady State | | 0.6 | |
| Pulsed Drain Current [A] | | $I_{DM}$ | 3.0 | A |
| Total Power Dissipation @ $T_A$=25℃ | | $P_D$ | 0.15 | W |
| Thermal Resistance Junction-to-Ambient @ Steady State | | $R_{\theta JA}$ | 833 | ℃/ W |
| Junction and Storage Temperature Range | | $T_J$ ,$T_{STG}$ | -55～+150 | ℃ |

## ■ Ordering Information (Example)

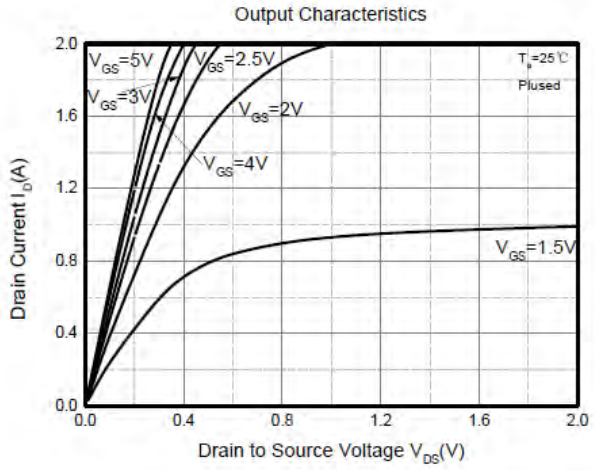
| PREFERED P/N | PACKING CODE | Marking | MINIMUM PACKAGE(pcs) | INNER BOX QUANTITY(pcs) | OUTER CARTON QUANTITY(pcs) | DELIVERY MODE |
|---|---|---|---|---|---|---|
| LM3134KT | | KF | 8000 | | | 7“ reel |

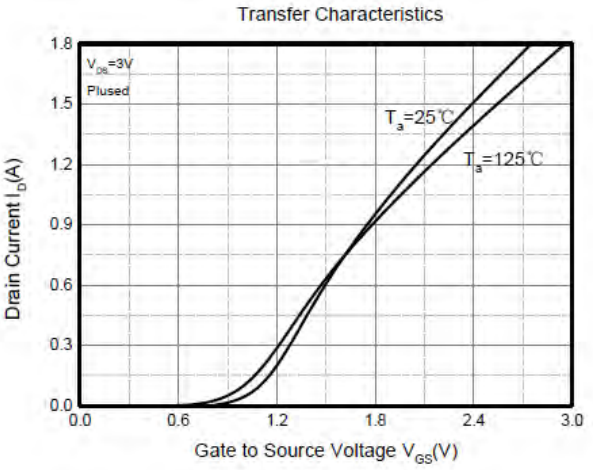
## ■ Electrical Characteristics ($T_J$=25℃ unless otherwise noted)

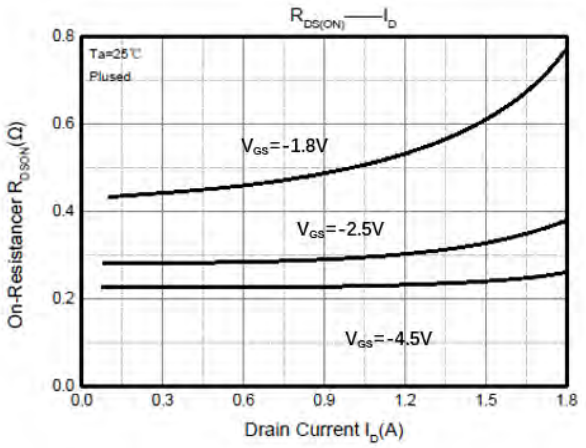
| Parameter | Symbol | Conditions | Min | Typ | Max | Units |
|---|---|---|---|---|---|---|
| **Static Parameter** | | | | | | |
| Drain-Source Breakdown Voltage | $BV_{DSS}$ | $V_{GS}$= 0V, $I_D$=250μA | 20 | | | V |
| Zero Gate Voltage Drain Current | $I_{DSS}$ | $V_{DS}$=20V,$V_{GS}$=0V | | | 1 | μA |
| Gate-Body Leakage Current | $I_{GSS}$ | $V_{GS}$= ±10V, $V_{DS}$=0V | | 2.5 | ±10 | μA |
| | | $V_{GS}$= ±8V, $V_{DS}$=0V | | 500 | ±2000 | nA |
| Gate Threshold Voltage | $V_{GS(th)}$ | $V_{DS}$= $V_{GS}$, $I_D$=250μA | 0.35 | 0.75 | 1.1 | V |
| Static Drain-Source On-Resistance | $R_{DS(ON)}$ | $V_{GS}$= 4.5V, $I_D$=0.65A | | 130 | 250 | mΩ |
| | | $V_{GS}$= 2.5V, $I_D$=0.3A | | 180 | 350 | |
| Diode Forward Voltage [C] | $V_{SD}$ | $I_S$=0.5A,$V_{GS}$=0V | | | 1.2 | V |
| Maximum Body-Diode Continuous Current | $I_S$ | | | | 0.75 | A |
| **Dynamic Parameters [B]** | | | | | | |
| Input Capacitance | $C_{iss}$ | $V_{DS}$=10V,$V_{GS}$=0V,f=1MHZ | | | 110 | pF |
| Output Capacitance | $C_{oss}$ | | | | 18 | |
| Reverse Transfer Capacitance | $C_{rss}$ | | | | 15 | |
| **Switching Parameters [B]** | | | | | | |
| Total Gate Charge | $Q_g$ | $V_{GS}$=4.5V,$V_{DS}$=10V,$I_D$=0.5A | | 1.1 | | nC |
| Gate Source Charge | $Q_{gs}$ | | | 0.19 | | |
| Gate Drain Charge | $Q_{gd}$ | | | 0.27 | | |
| Turn-on Delay Time | $t_{D(on)}$ | $V_{GS}$=4.5V,$V_{DD}$=10V,$R_G$=10Ω,$I_D$=0.5A | | 6.7 | | ns |
| Turn-on Rise Time | $t_r$ | | | 4.8 | | |
| Turn-off Delay Time | $t_{D(off)}$ | | | 17.3 | | |
| Turn-off Fall Time | $t_f$ | | | 7.4 | | |

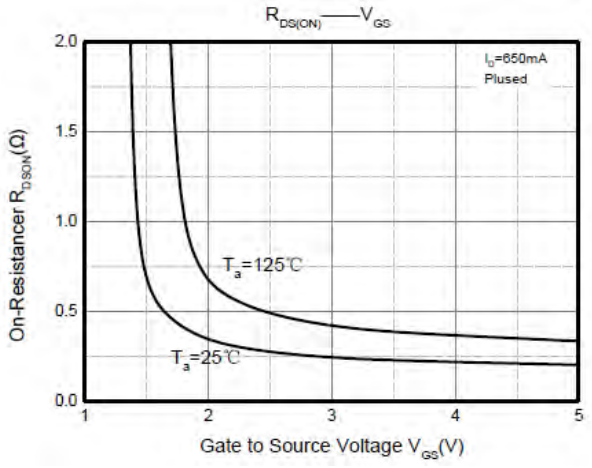
A. Repetitive Rating: Pulse width limited by maximum junction temperature.
B. These parameters have no way to verify.
C. Pulse Test: Pulse Width≤300us, Duty Cycle≤0.5%.

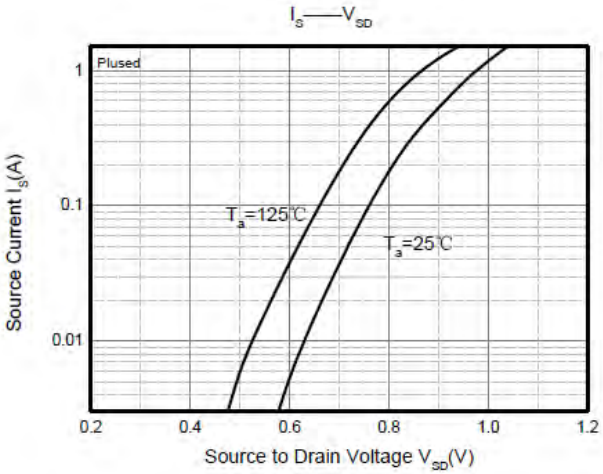
## ■ Typical Performance Characteristics

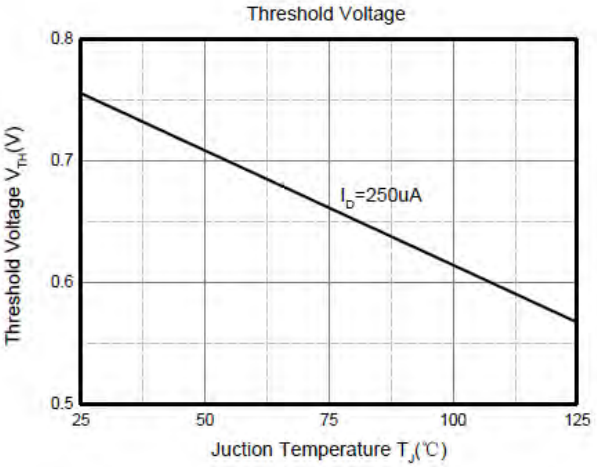


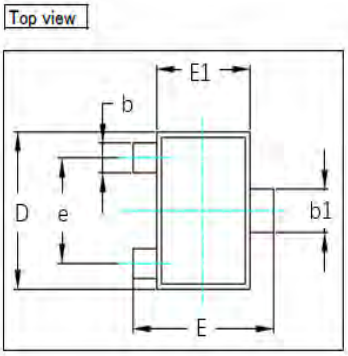



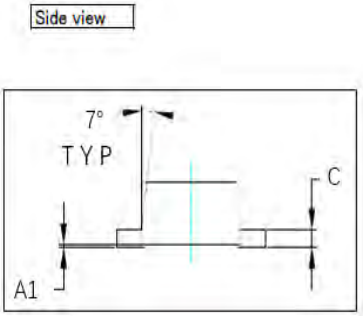



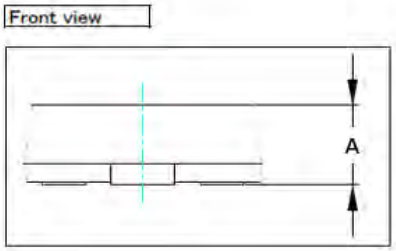



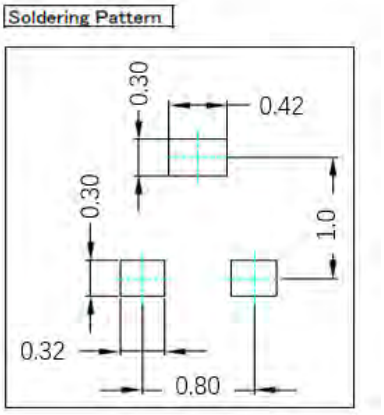
## ■SOT-723 Package information




| SYMBOL | DIMENSIONS IN MILLIMETER | |
|---|---|---|
| | MIN | MAX |
| A | 0.430 | 0.500 |
| A1 | 0.000 | 0.050 |
| b | 0.170 | 0.270 |
| b1 | 0.270 | 0.370 |
| C | 0.080 | 0.150 |
| D | 1.150 | 1.250 |
| E | 1.250 | 1.500 |
| E1 | 0.750 | 0.850 |
| e | 0.800 TYP. | |
| ⊖ | 0° | 7° |

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