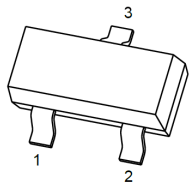
SZCJ

# SOT-23 Plastic-Encapsulate MOSFETS

## CJ3134KA N-Channel MOSFET

| $V_{(BR)DSS}$ | $R_{DS(on)}$TYP | $I_D$ |
|---|---|---|
| 20V | 110mΩ@4.5V | 0.9A |
| | 140mΩ@2.5V | |
| | 180mΩ@1.8V | |

**SOT-23**




1. GATE
2. SOURCE
3. DRAIN

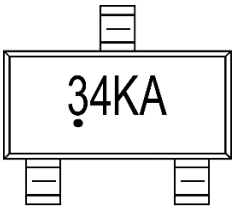
### FEATURE

- Lead Free Product is Acquired
- Surface Mount Package
- N-Channel Switch with Low $R_{DS(on)}$
- Operated at Low Logic Level Gate Drive

### APPLICATIONS

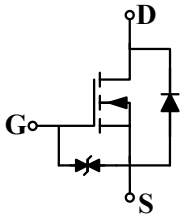
- Load/Power Switching
- Interfacing Switching
- Battery Management for Ultra Small Portable Electronics
- Logic Level Shift

### MARKING




34KA= Device code
Solid dot = Green molding compound device.

### EQUIVALENT CIRCUIT




### Maximum ratings ( $T_a$=25℃ unless otherwise noted )

| Parameter | Symbol | Limit | Unit |
|---|---|---|---|
| Drain-Source Voltage | $V_{DS}$ | 20 | V |
| Typical Gate-Source Voltage | $V_{GS}$ | ±12 | V |
| Continuous Drain Current | $I_D$① | 0.9 | A |
| Pulsed Drain Current | $I_{DM}$② | 2 | A |
| Power Dissipation | $P_D$⑤ | 350 | mW |
| Thermal Resistance from Junction to Ambient | $R_{\theta JA}$⑤ | 357 | ℃/W |
| Operating Junction and Storage Temperature Range | $T_J$,$T_{stg}$ | -55~+150 | ℃ |
| Lead Temperature for Soldering Purposes(1/8" duration for 10s) | $T_L$ | 260 | ℃ |

## MOSFET ELECTRICAL CHARACTERISTICS

### $T_J$=25℃ unless otherwise specified

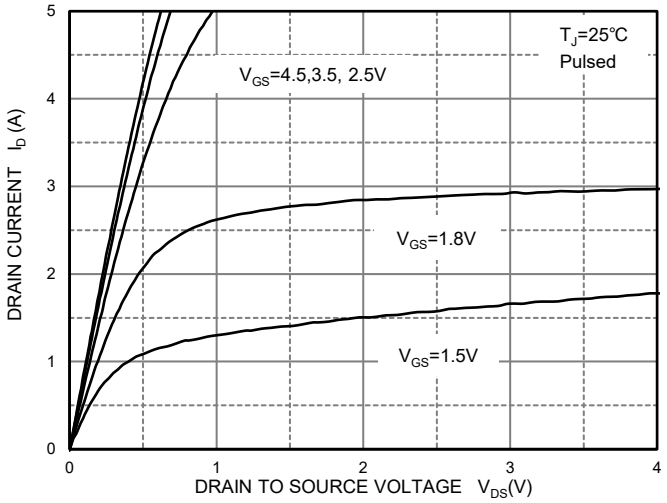
| Parameter | Symbol | Test Condition | Min | Typ | Max | Unit |
|---|---|---|---|---|---|---|
| **STATIC CHARACTERISTICS** | | | | | | |
| Drain-source breakdown voltage | $V_{(BR)\ DSS}$ | $V_{GS}$ =0V, $I_D$ =250μA | 20 | | | V |
| Zero gate voltage drain current | $I_{DSS}$ | $V_{DS}$ =20V, $V_{GS}$ =0V | | | 1 | μA |
| Gate-body leakage current | $I_{GSS}$ | $V_{GS}$ =±10V, $V_{DS}$ =0V | | | ±20 | μA |
| Gate-threshold voltage | $V_{GS(th)}$ | $V_{DS}$ =$V_{GS}$, $I_D$ =250μA | 0.4 | 0.7 | 1.1 | V |
| Drain-source on-state resistance | $R_{DS(on)}$③ | $V_{GS}$ =4.5V, $I_D$ =0.65A | | 110 | 170 | mΩ |
| | | $V_{GS}$ =2.5V, $I_D$ =0.55A | | 140 | 200 | mΩ |
| | | $V_{GS}$ =1.8V, $I_D$ =0.45A | | 180 | 300 | mΩ |
| Diode forward voltage | $V_{SD}$③ | $I_S$ =0.15A, $V_{GS}$ =0V | | | 1.2 | V |
| **DYNAMIC CHARACTERISTICS**④ | | | | | | |
| Input capacitance | $C_{iss}$ | $V_{DS}$ =16V,$V_{GS}$ =0V, f =1MHz | | 45 | | pF |
| Output capacitance | $C_{oss}$ | | | 12 | | |
| Reverse transfer capacitance | $C_{rss}$ | | | 8 | | |
| **SWITCHING CHARACTERISTICS**④ | | | | | | |
| Turn-on delay time | $t_{d(on)}$ | $V_{GS}$ =4.5V,$V_{DS}$ =10V, $I_D$ =500mA,$R_{GEN}$ =10Ω | | 10 | | ns |
| Turn-on rise time | $t_r$ | | | 20 | | |
| Turn-off delay time | $t_{d(off)}$ | | | 100 | | |
| Turn-off fall time | $t_f$ | | | 60 | | |

**Notes:**

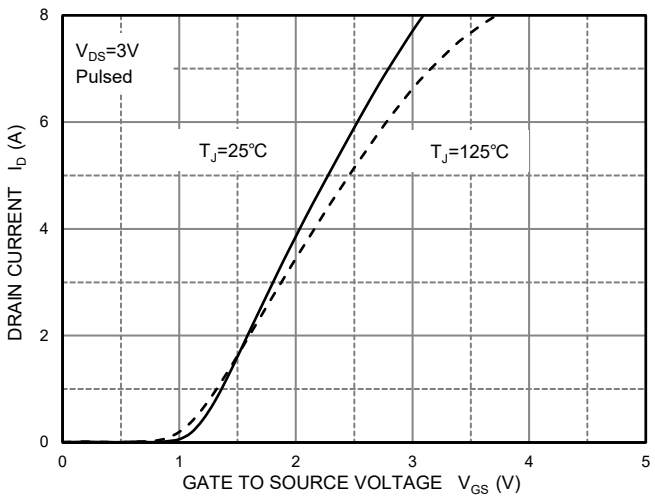
1. Limited only by maximum temperature allowed.
2. $P_W$ ≤10μs. Limited only by maximum temperature allowed.
3. Pulse Test : Pulse Width ≤400μs, duty cycle ≤2%.
4. Guaranteed by design, not subject to production.
5. The value of $R_{\theta JA}$ is measured with the device mounted on 1 $in^2$ FR-4 board with 2oz. single-sided Copper, in a still air environment with $T_a$=25℃.

## Typical Characteristics

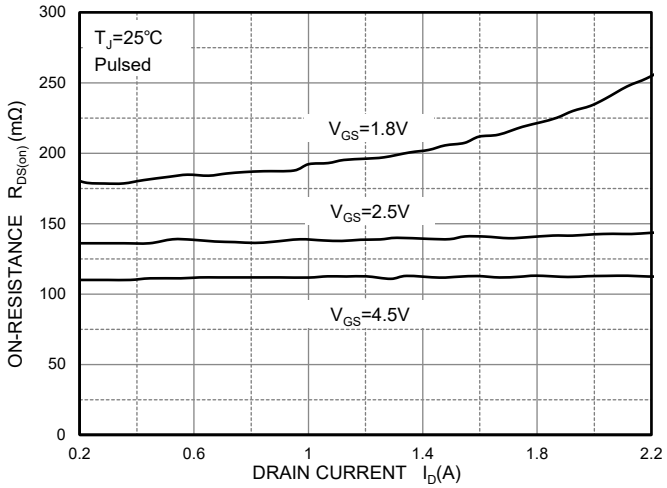
**Output Characteristics**



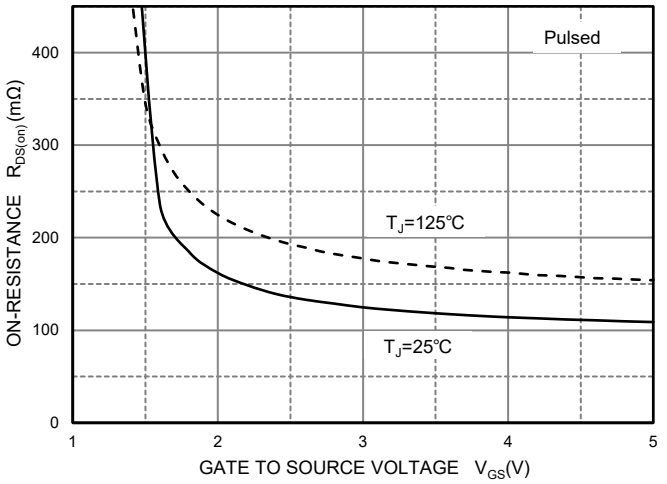

**Transfer Characteristics**



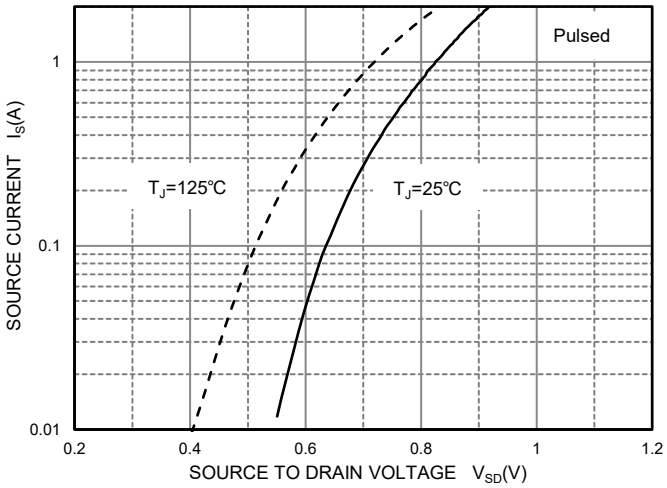

**On Resistance vs. Drain Current**



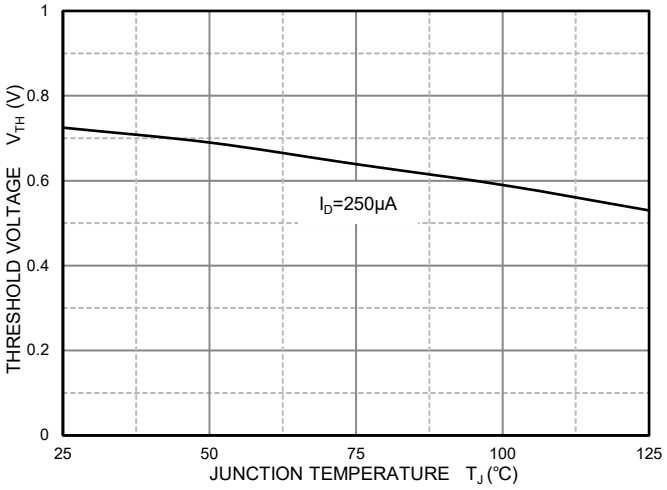

**On Resistance vs. Gate-Source Bias**



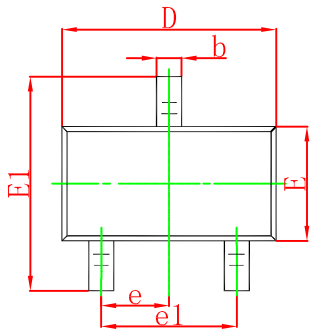

**Source-Drain Diode Forward Characteristics**

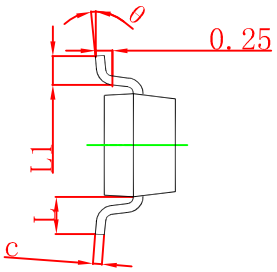


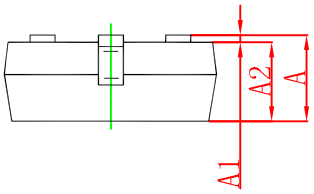

**Threshold Voltage vs. Temperature**



## SOT-23 Package Outline Dimensions

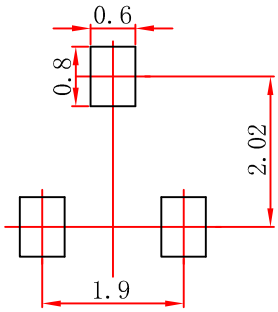



| Symbol | Dimensions In Millimeters | | Dimensions In Inches | |
|---|---|---|---|---|
| | Min | Max | Min | Max |
| A | 0.900 | 1.150 | 0.035 | 0.045 |
| A1 | 0.000 | 0.100 | 0.000 | 0.004 |
| A2 | 0.900 | 1.050 | 0.035 | 0.041 |
| b | 0.300 | 0.500 | 0.012 | 0.020 |
| c | 0.080 | 0.150 | 0.003 | 0.006 |
| D | 2.800 | 3.000 | 0.110 | 0.118 |
| E | 1.200 | 1.400 | 0.047 | 0.055 |
| E1 | 2.250 | 2.550 | 0.089 | 0.100 |
| e | 0.950 TYP | | 0.037 TYP | |
| e1 | 1.800 | 2.000 | 0.071 | 0.079 |
| L | 0.550 REF | | 0.022 REF | |
| L1 | 0.300 | 0.500 | 0.012 | 0.020 |
| θ | 0° | 8° | 0° | 8° |

## SOT-23 Suggested Pad Layout



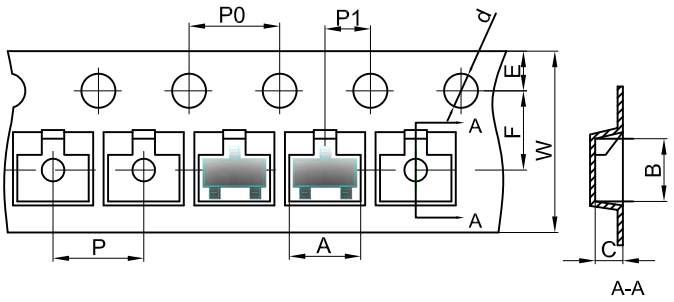

Note:
1.Controlling dimension:in millimeters.
2.General tolerance:± 0.05mm.
3.The pad layout is for reference purposes only.

NOTICE

SZCJ reserves the right to make modifications,enhan nts,improvements,corrections or other es without further notice to any product herein. SZCJ does not assume any liability arising out of the application or use of any product described h

# SOT-23 Tape and Reel

## SOT-23 Embossed Carrier Tape

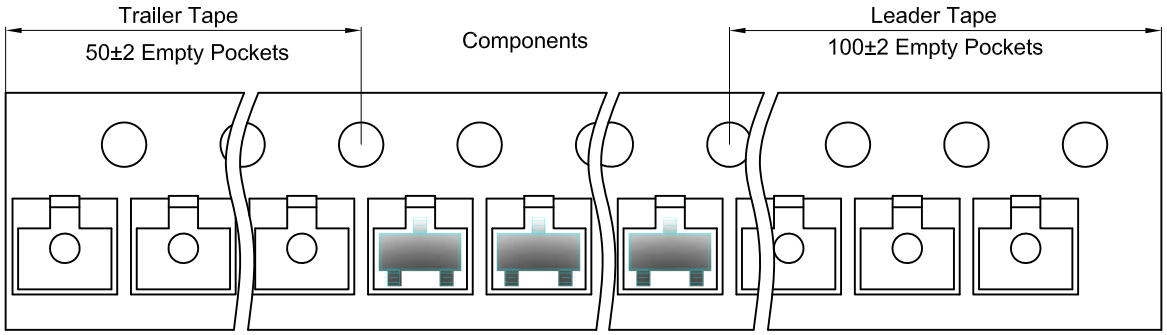



Packaging Description:

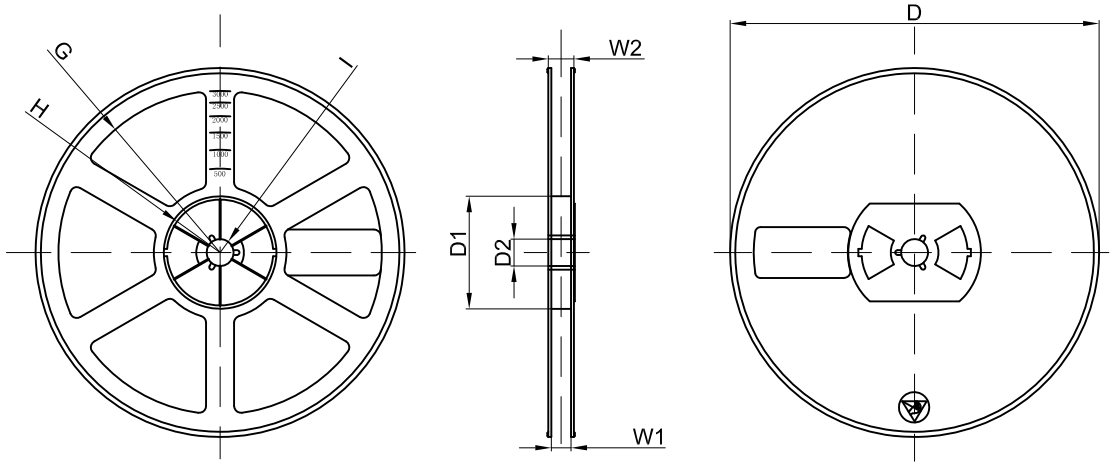
SOT-23 parts are shipped in tape. The carrier tape is made from a dissipative (carbon filled) polycarbonate resin. The cover tape is a multilayer film (Heat Activated Adhesive in nature) primarily composed of polyester film, adhesive layer, sealant, and anti-static sprayed agent. These reeled parts in standard option are shipped with 3,000 units per 7" or 17.8cm diameter reel. The reels are clear in color and is made of polystyrene plastic (anti-static coated).

| Dimensions are in millimeter | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Pkg type | A | B | C | d | E | F | P0 | P | P1 | W |
| SOT-23 | 3.15 | 2.77 | 1.22 | Ø1.50 | 1.75 | 3.50 | 4.00 | 4.00 | 2.00 | 8.00 |

## SOT-23 Tape Leader and Trailer




## SOT-23 Reel




| Dimensions are in millimeter | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Reel Option | D | D1 | D2 | G | H | I | W1 | W2 |
| 7"Dia | Ø178.00 | 54.40 | 13.00 | R78.00 | R25.60 | R6.50 | 9.50 | 12.30 |

| REEL | Reel Size | Box | Box Size(mm) | Carton | Carton Size(mm) | G.W.(kg) |
|---|---|---|---|---|---|---|
| 3000 pcs | 7 inch | 45,000 pcs | 203×203×195 | 180,000 pcs | 438×438×220 | |