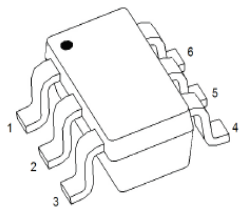
SZCJ

# SOT-23-6L Plastic-Encapsulate MOSFETS

## CJL3415 P-Channel 20V(D-S) MOSFET

| $V_{(BR)DSS}$ | $R_{DS(on)}$MAX | $I_D$ |
|---|---|---|
| -20V | 50mΩ@-4.5V | -4.0A |
| | 60mΩ@-2.5V | |
| | 100mΩ@-1. 8V | |

**SOT-23-6L**




**FEATURE**

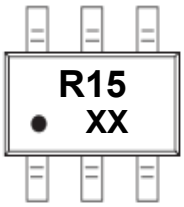
Excellent $R_{DS(ON)}$, low gate charge,low gate voltage

High power and current handing capability

**APPLICATION**

Load switch and in PWM applicatopns

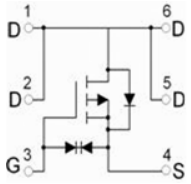
**MARKING:**




R15=Device code
Solid point=Pin1 positioning point
XX=Date Code

PIN1

**Equivalent Circuit**




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

| Parameter | Symbol | Value | Unit |
|---|---|---|---|
| Drain-Source Voltage | $V_{DS}$ | -20 | V |
| Gate-Source Voltage | $V_{GS}$ | ±8 | |
| Continuous Drain Current (t≤10s) | $I_D$ | -4.0 | A |
| Pulsed Drain Current (note1) | $I_{DM}$ | -30 | A |
| Maximum Power Dissipation (note2) | $P_D$ | 1.5 | W |
| Thermal Resistance from Junction to Ambient (note2) | $R_{\theta JA}$ | 82.5 | ℃/W |
| Operation Junction and Storage Temperature Range | $T_J$,$T_{STG}$ | -55 ~+150 | ℃ |

## MOSFET ELECTRICAL CHARACTERISTICS

**$T_a$=25℃ unless otherwise specified**

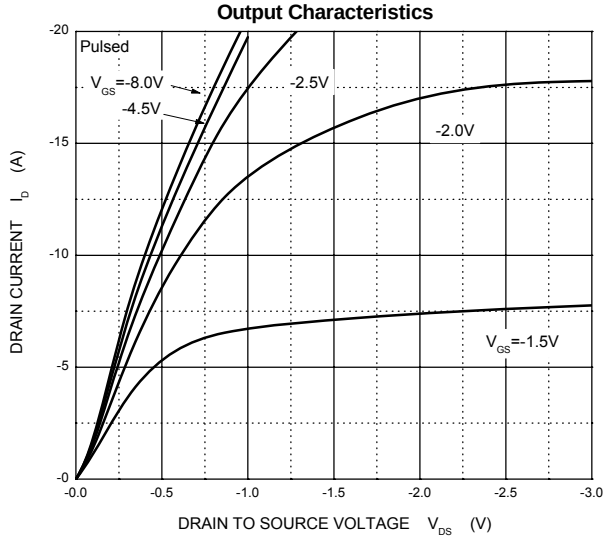
| Parameter | Symbol | Test Condition | Min | Typ | Max | Unit |
|---|---|---|---|---|---|---|
| **Static Parameters** | | | | | | |
| Drain-source breakdown voltage | $V_{(BR)\ DSS}$ | $V_{GS}$ = 0V, $I_D$ =-250μA | -20 | | | V |
| Gate threshold voltage (note3) | $V_{GS(th)}$ | $V_{DS}$ =$V_{GS}$, $I_D$ =-250μA | -0.3 | -0.56 | -1 | |
| Gate-body leakage current | $I_{GSS}$ | $V_{DS}$ =0V, $V_{GS}$ =±8V | | | ±10 | μA |
| | | $V_{DS}$ =0V, $V_{GS}$ =±4.5V | | | ±1 | |
| Zero gate voltage drain current | $I_{DSS}$ | $V_{DS}$ =-16V, $V_{GS}$ =0V | | | -1 | |
| Drain-source on-state resistance(note3) | $R_{DS(on)}$ | $V_{GS}$ =-4.5V, $I_D$ =-4A | | 37 | 50 | mΩ |
| | | $V_{GS}$ =-2.5V, $I_D$ =-4A | | 45 | 60 | |
| | | $V_{GS}$ =-1.8V, $I_D$ =-2A | | 80 | 100 | |
| Forward transconductance(note3) | $g_{FS}$ | $V_{DS}$ =-5V, $I_D$ =-4A | 8 | 16 | | S |
| **Dynamic Parameters** (note4) | | | | | | |
| Input capacitance | $C_{iss}$ | $V_{DS}$ =-10V,$V_{GS}$ =0V,f =1MHz | | 1450 | | pF |
| Output capacitance | $C_{oss}$ | | | 205 | | |
| Reverse transfer capacitance | $C_{rss}$ | | | 160 | | |
| **Switching Parameters**(note4) | | | | | | |
| Total gate charge | $Q_g$ | $V_{DS}$ =-10V,$V_{GS}$ =-4.5V,$I_D$ =-4A | | 17.2 | | nC |
| Gate-Source charge | $Q_{gs}$ | | | 1.3 | | |
| Gate-drain charge | $Q_{gd}$ | | | 4.5 | | |
| Turn-on delay time | $t_{d(on)}$ | $V_{DS}$=-10V, $V_{GS}$=-4.5V<br>$R_{GEN}$ =3Ω, $R_L$=2.5Ω, | | 9.5 | | ns |
| Turn-on rise time | $t_r$ | | | 17 | | |
| Turn-off delay time | $t_{d(off)}$ | | | 94 | | |
| Turn-off fall time | $t_f$ | | | 35 | | |
| **Drain-Source Diode Characteristics** | | | | | | |
| Drain-source diode forward voltage(note3) | $V_{DS}$ | $V_{GS}$ = 0V, $I_S$ =-1A | | | -1 | V |
| Maximum continuous drain-source diode forward current | $I_S$ | | | | -4 | A |

**Notes:**

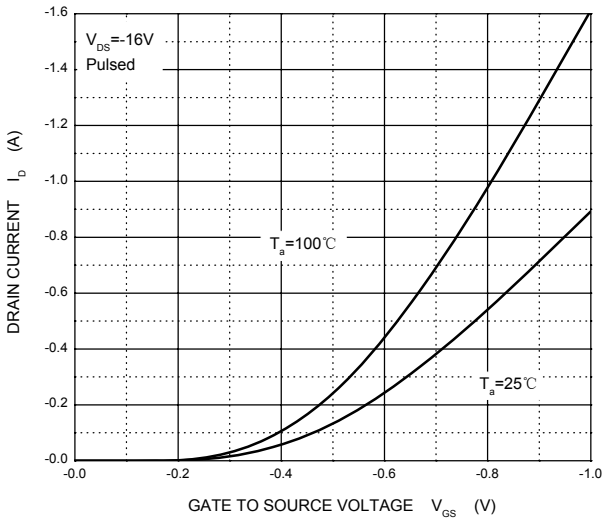
1. Repetitive rating,pulse width limited by junction temperature.
2. Device mounted on 1 $in^2$ FR-4 board with 2oz. Copper, single sided, in a still air environment with $T_A$=25℃.
3. Pulse Test : Pulse width ≤ 300μs, duty cycle ≤ 2%.
4. These parameters have no way to verify.

## Typical Characteristics

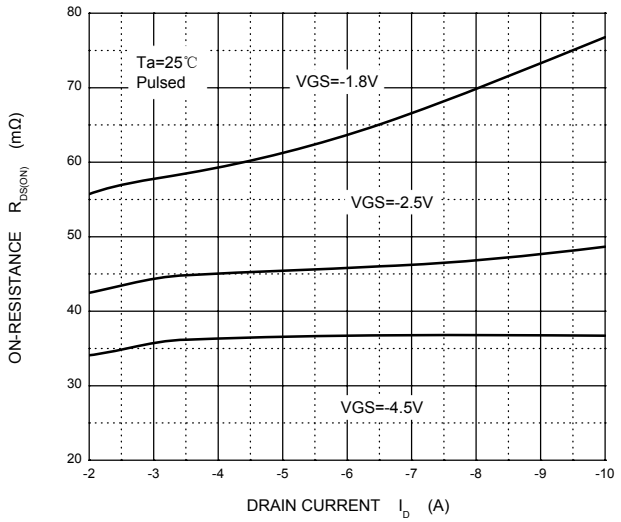
**Output Characteristics**



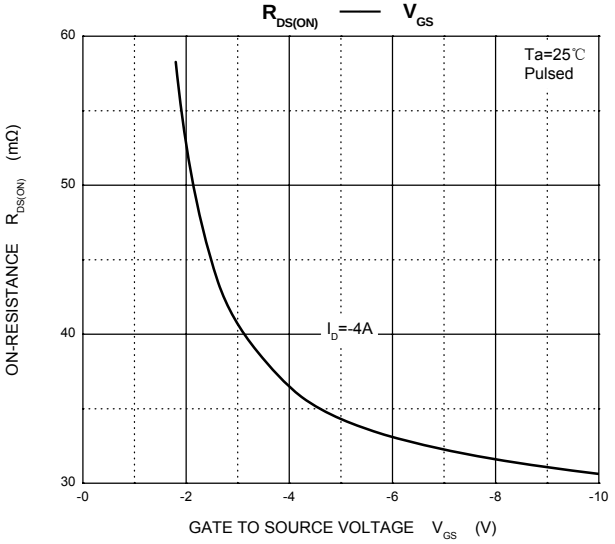

**Transfer Characteristics**



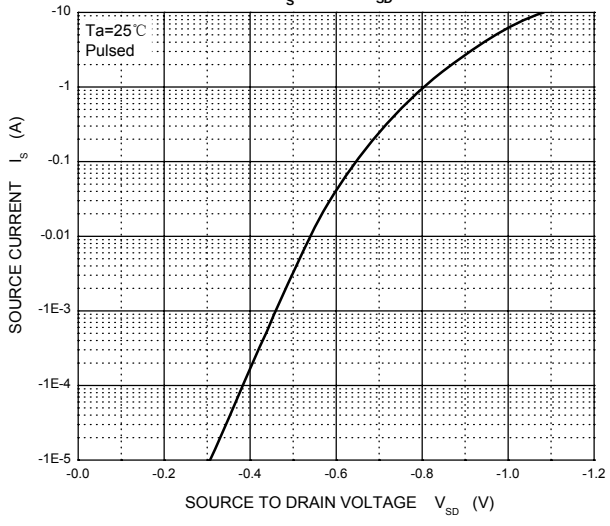

**$R_{DS(ON)}$ —— $I_D$**



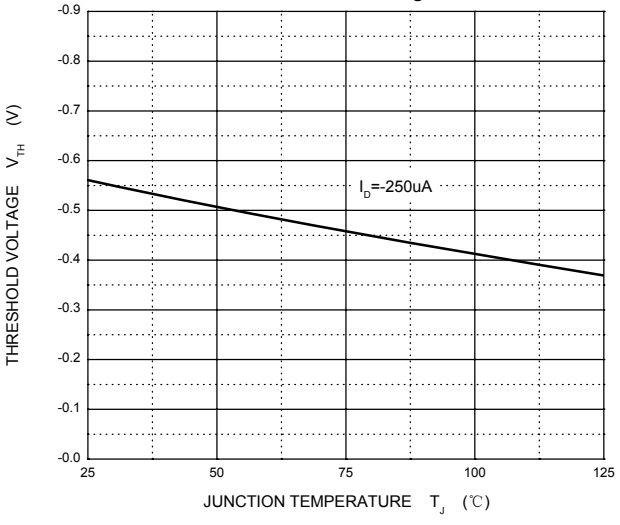

**$R_{DS(ON)}$ —— $V_{GS}$**



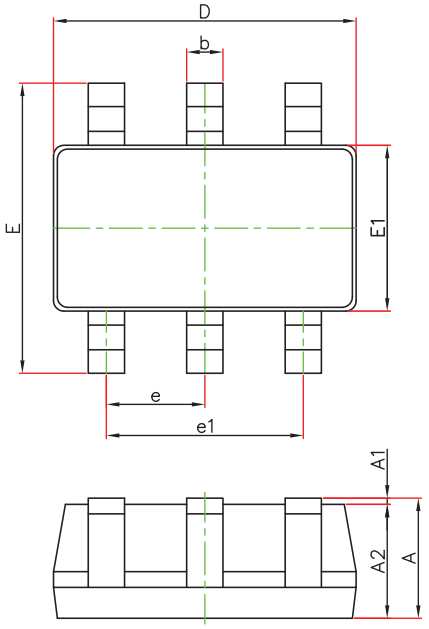

**$I_S$ —— $V_{SD}$**

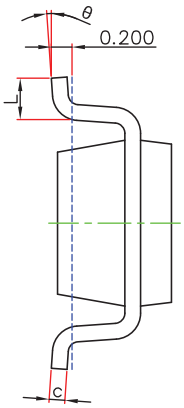



**Threshold Voltage**



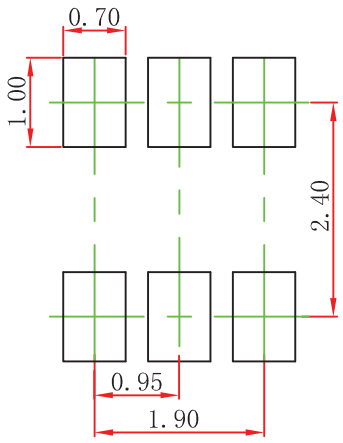
## SOT-23-6L Package Outline Dimensions




| Symbol | Dimensions In Millimeters | | Dimensions In Inches | |
|---|---|---|---|---|
| | Min. | Max. | Min. | Max. |
| A | 1.050 | 1.250 | 0.041 | 0.049 |
| A1 | 0.000 | 0.100 | 0.000 | 0.004 |
| A2 | 1.050 | 1.150 | 0.041 | 0.045 |
| b | 0.300 | 0.500 | 0.012 | 0.020 |
| c | 0.100 | 0.200 | 0.004 | 0.008 |
| D | 2.820 | 3.020 | 0.111 | 0.119 |
| E1 | 1.500 | 1.700 | 0.059 | 0.067 |
| E | 2.650 | 2.950 | 0.104 | 0.116 |
| e | 0.950(BSC) | | 0.037(BSC) | |
| e1 | 1.800 | 2.000 | 0.071 | 0.079 |
| L | 0.300 | 0.600 | 0.012 | 0.024 |
| θ | 0° | 8° | 0° | 8° |

## SOT-23-6L Suggested Pad Layout



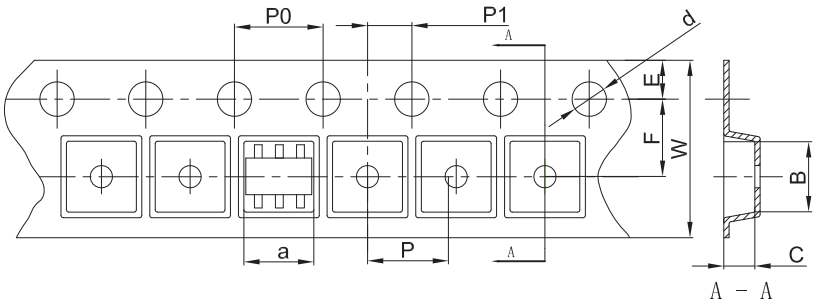

Note:
1.Controlling dimension:in millimeters.
2.General tolerance:± 0.05mm.
3.The pad layout is for reference purposes only.


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-23-6L Tape and Reel

### SOT-23-6L Embossed Carrier Tape

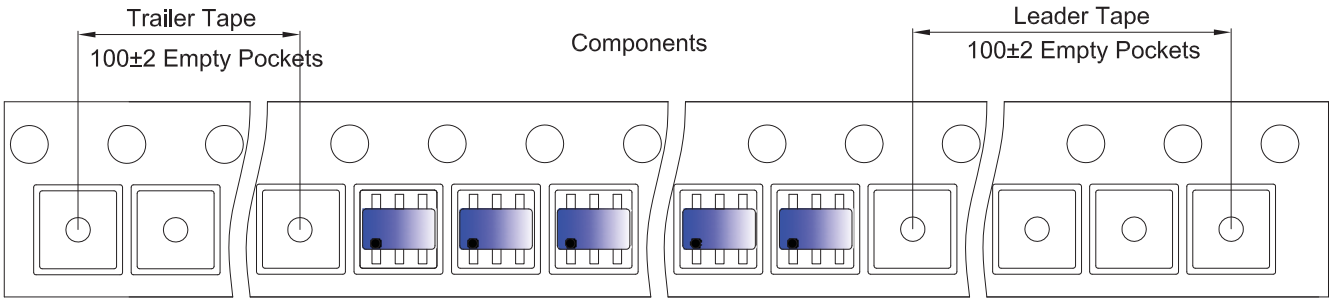



Packaging Description:

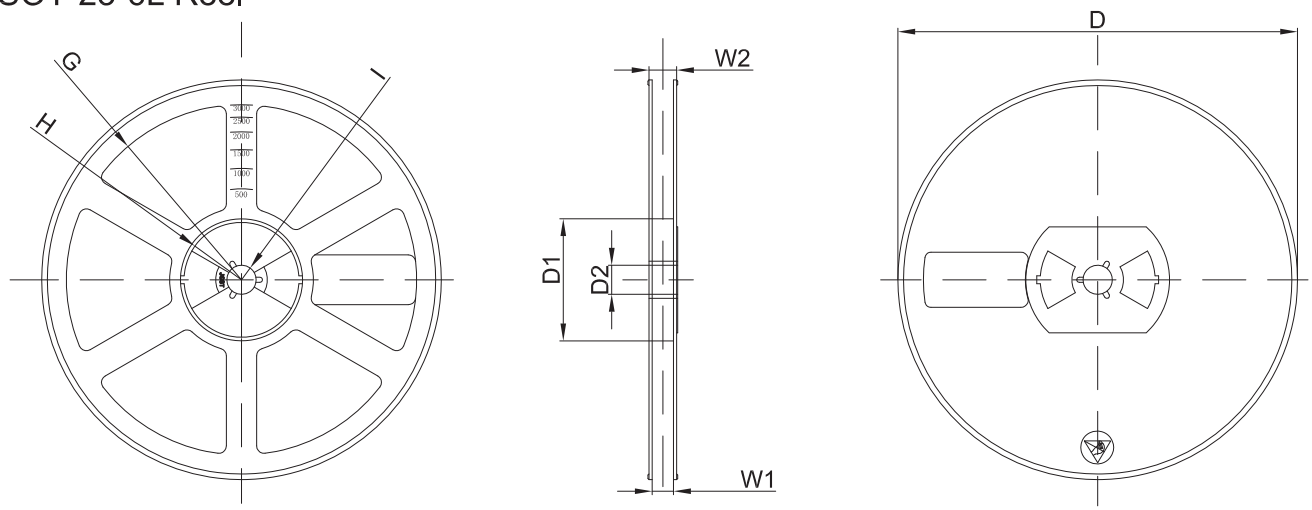
SOT-23-6L parts are shipped in tape. The carrier tape is made from a dissipative (carbon filled) polycarbonate resin. The cover tape is a multilayer film (Heat Activated Adhesive in nature) primarily composed of polyester film, adhesive layer, sealant, and anti-static sprayed agent. These reeled parts in standard option are shipped with 3,000 units per 7" or 18.0cm 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-23-6L | 3.23 | 3.17 | 1.37 | Ø1.55 | 1.75 | 3.50 | 4.00 | 4.00 | 2.00 | 8.00 |

### SOT-23-6L Tape Leader and Trailer




### SOT-23-6L Reel




| Dimensions are in millimeter | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Reel Option | D | D1 | D2 | G | H | I | W1 | W2 |
| 7"Dia | Ø180.00 | 60.00 | 13.00 | R78.00 | R25.60 | R6.50 | 9.50 | 13.10 |

| REEL | Reel Size | Box | Box Size(mm) | Carton | Carton Size(mm) | G.W.(kg) |
|---|---|---|---|---|---|---|
| 3000 pcs | 7 inch | 30,000 pcs | 203×203×195 | 120,000 pcs | 438×438×220 | |