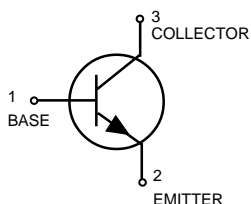
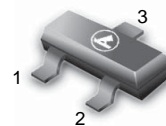


General Purpose Transistors

NPN Silicon



L9013*LT1



SOT-23 (TO-236AB)

MAXIMUM RATINGS

| Rating | Symbol | Value | Unit |
|------------------------------|-----------|-------|------|
| Collector-Emitter Voltage | V_{CEO} | 20 | V |
| Collector-Base Voltage | V_{CBO} | 40 | V |
| Emitter-Base Voltage | V_{EBO} | 5 | V |
| Collector current-continuoun | I_C | 500 | mAdc |

THERMAL CHARATEERISTICS

| Characteristic | Symbol | Max | Unit |
|--|-----------------|-------------|----------------------|
| Total Device Dissipation FR-5 Board, (1) $T_A=25^{\circ}\text{C}$ Derate above 25°C | P_D | 225 | mW |
| Thermal Resistance, Junction to Ambient | $R_{\theta JA}$ | 556 | $^{\circ}\text{C/W}$ |
| Total Device Dissipation Alumina Substrate, (2) $T_A=25^{\circ}\text{C}$ Derate above 25°C | P_D | 300 | mW |
| Thermal Resistance, Junction to Ambient | $R_{\theta JA}$ | 417 | $^{\circ}\text{C/W}$ |
| Junction and Storage Temperature | T_j, T_{stg} | -55 to +150 | $^{\circ}\text{C}$ |

DEVICE MARKING

L9013QLT1=13Q

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

| Characteristic | Symbol | Min | Typ | Max | Unit |
|----------------|--------|-----|-----|-----|------|
|----------------|--------|-----|-----|-----|------|

OFF CHARACTERISTICS

| | | | | | |
|---|---------------|----|---|-----|----|
| Collector-Emitter Breakdown Voltage ($I_C=1.0\text{mA}$) | $V_{(BR)CEO}$ | 20 | - | - | V |
| Emitter-Base Breakdown Voltage ($I_E=100\mu\text{A}$) | $V_{(BR)EBO}$ | 5 | - | - | V |
| Collector-Base Breakdown Voltage ($I_C=100\mu\text{A}$) | $V_{(BR)CBO}$ | 40 | - | - | V |
| Collector Cutoff Current ($V_{CB}=35\text{V}$) | I_{CBO} | - | - | 150 | nA |
| Emitter Cutoff Current ($V_{EB}=4\text{V}$) | I_{EBO} | - | - | 150 | nA |

L9013*LT1

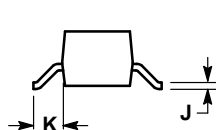
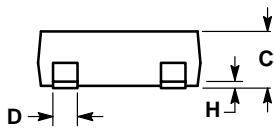
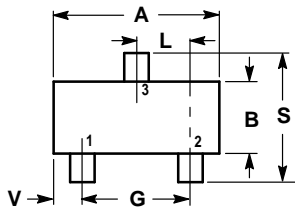
ON CHARACTERISTICS

| | | | | | |
|---|-------------|-----|---|-----|---|
| DC Current Gain ($I_C=50mA, V_{CE}=1V$) | H_{fe} | 100 | - | 600 | |
| Collector-Emitter Saturation Voltage ($I_C=500mA, I_B=50mA$) | $V_{CE(S)}$ | - | - | 0.6 | V |

NOTE:

| | | | | |
|----------|---------|---------|---------|---------|
| * | P | Q | R | S |
| H_{FE} | 100~200 | 150~300 | 200~400 | 300~600 |

SOT-23 (TO-236AB)



NOTES:

- CONTROLLING DIMENSION: MILLIMETERS
- LEAD THICKNESS SPECIFIED PER L / F DRAWING WITH SOLDER PLATING.

| DIM | INCHES | | MILLIMETERS | |
|-----|--------|--------|-------------|-------|
| | MIN | MAX | MIN | MAX |
| A | 0.1102 | 0.1197 | 2.80 | 3.04 |
| B | 0.0472 | 0.0551 | 1.20 | 1.40 |
| C | 0.0350 | 0.0440 | 0.89 | 1.11 |
| D | 0.0150 | 0.0200 | 0.37 | 0.50 |
| G | 0.0701 | 0.0807 | 1.78 | 2.04 |
| H | 0.0005 | 0.0040 | 0.013 | 0.100 |
| J | 0.0034 | 0.0070 | 0.085 | 0.177 |
| K | 0.0180 | 0.0236 | 0.45 | 0.60 |
| L | 0.0350 | 0.0401 | 0.89 | 1.02 |
| S | 0.0830 | 0.0984 | 2.10 | 2.50 |
| V | 0.0177 | 0.0236 | 0.45 | 0.60 |

- PIN 1. BASE
- EMITTER
- COLLECTOR

