

# General Purpose Transistors

## PNP Silicon

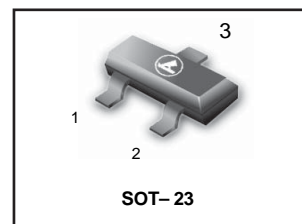
### Features

- We declare that the material of product compliance with RoHS requirements.
- S- Prefix for Automotive and Other Applications Requiring Unique Site and Control Change Requirements; AEC-Q101 Qualified and PPAP Capable.

**L2SA1037AKQLT1G Series**  
**S-L2SA1037AKQLT1G Series**

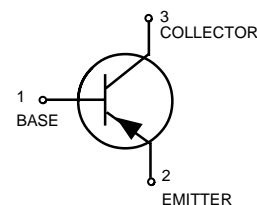
### ORDERING INFORMATION

| Device                               | Package | Shipping          |
|--------------------------------------|---------|-------------------|
| L2SA1037AKQLT1G<br>S-L2SA1037AKQLT1G | SOT23   | 3000/Tape & Reel  |
| L2SA1037AKQLT3G<br>S-L2SA1037AKQLT3G | SOT23   | 10000/Tape & Reel |



### MAXIMUM RATINGS

| Rating                         | Symbol    | Value      | Unit             |
|--------------------------------|-----------|------------|------------------|
| Collector-Emitter Voltage      | $V_{CEO}$ | -50        | V                |
| Collector-Base Voltage         | $V_{CBO}$ | -60        | V                |
| Emitter-Base Voltage           | $V_{EBO}$ | -6.0       | V                |
| Collector Current — Continuous | $I_C$     | -150       | mA <sub>dc</sub> |
| Collector power dissipation    | $P_C$     | 0.2        | W                |
| Junction temperature           | $T_j$     | 150        | °C               |
| Storage temperature            | $T_{stg}$ | -55 ~ +150 | °C               |



### DEVICE MARKING

L2SA1037AKQLT1G =FQ L2SA1037AKSLT1G=G3F L2SA1037AKRLT1G=FR

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

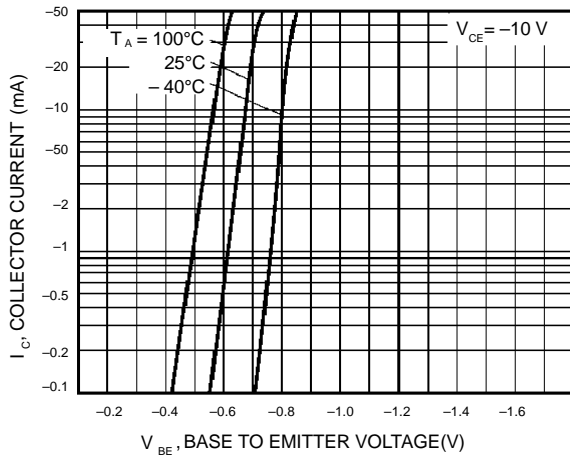
| Characteristic  | Symbol        | Min | Typ | Max  | Unit          |
|---|---------------|-----|-----|------|---------------|
| Collector-Emitter Breakdown Voltage<br>( $I_C = -1\text{ mA}$ )                           | $V_{(BR)CEO}$ | -50 | —   | —    | V             |
| Emitter-Base Breakdown Voltage<br>( $I_E = -50\ \mu\text{A}$ )                            | $V_{(BR)EBO}$ | -6  | —   | —    | V             |
| Collector-Base Breakdown Voltage<br>( $I_C = -50\ \mu\text{A}$ )                          | $V_{(BR)CBO}$ | -60 | —   | —    | V             |
| Collector Cutoff Current<br>( $V_{CB} = -60\text{ V}$ )                                   | $I_{CBO}$     | —   | —   | -0.1 | $\mu\text{A}$ |
| Emitter cutoff current<br>( $V_{EB} = -6\text{ V}$ )                                      | $I_{EBO}$     | —   | —   | -0.1 | $\mu\text{A}$ |
| Collector-emitter saturation voltage<br>( $I_C / I_B = -50\text{ mA} / -5\text{ mA}$ )    | $V_{CE(sat)}$ | —   | —   | -0.5 | V             |
| DC current transfer ratio<br>( $V_{CE} = -6\text{ V}, I_C = -1\text{ mA}$ )               | $h_{FE}$      | 120 | —   | 560  | —             |
| Transition frequency<br>( $V_{CE} = -12\text{ V}, I_E = 2\text{ mA}, f = 30\text{ MHz}$ ) | $f_T$         | —   | 140 | —    | MHz           |
| Output capacitance<br>( $V_{CB} = -12\text{ V}, I_E = 0\text{ A}, f = 1\text{ MHz}$ )     | $C_{ob}$      | —   | 4.0 | 5.0  | pF            |

### $h_{FE}$ values are classified as follows:

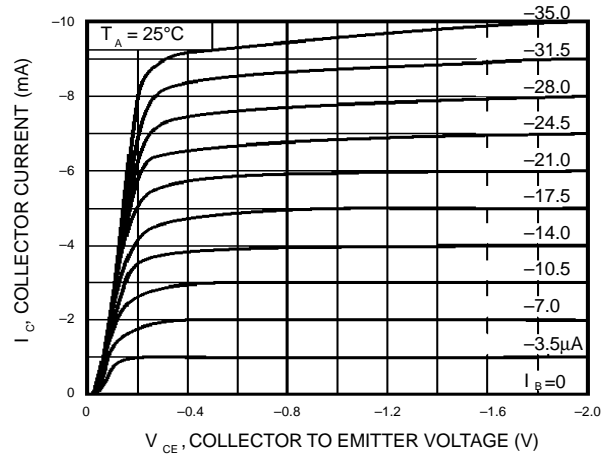
| *        | Q       | R       | S       |
|----------|---------|---------|---------|
| $h_{FE}$ | 120-270 | 180-390 | 270-560 |

**L2SA1037AKQLT1G Series**  
**S-L2SA1037AKQLT1G Series**

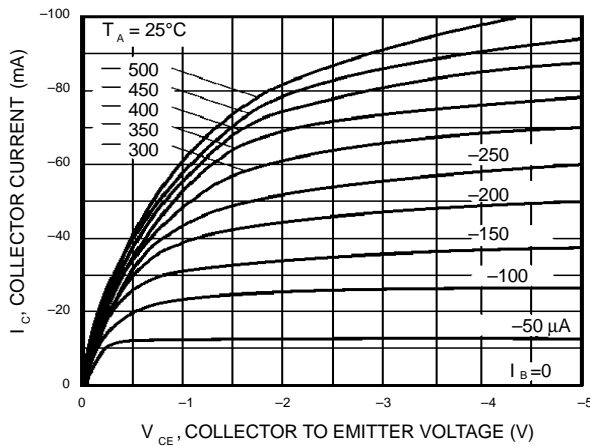
**Fig.1 Grounded emitter propagation characteristics**



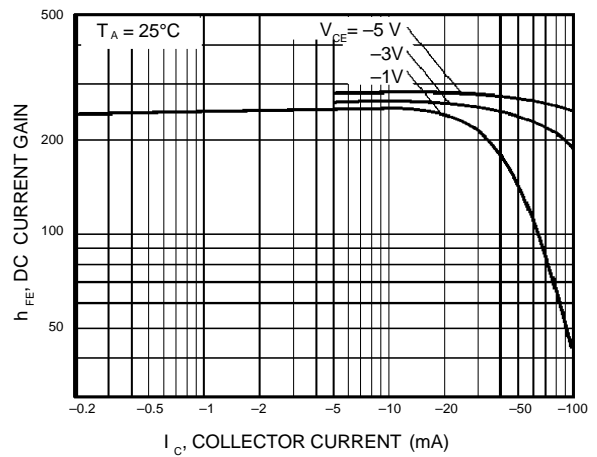
**Fig.2 Grounded emitter output characteristics(I)**



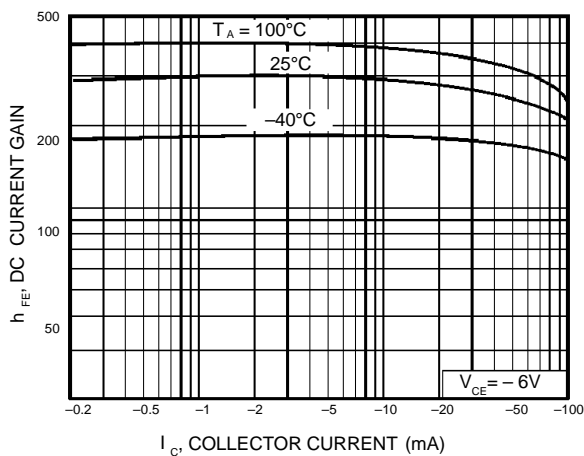
**Fig.3 Grounded emitter output characteristics(II)**



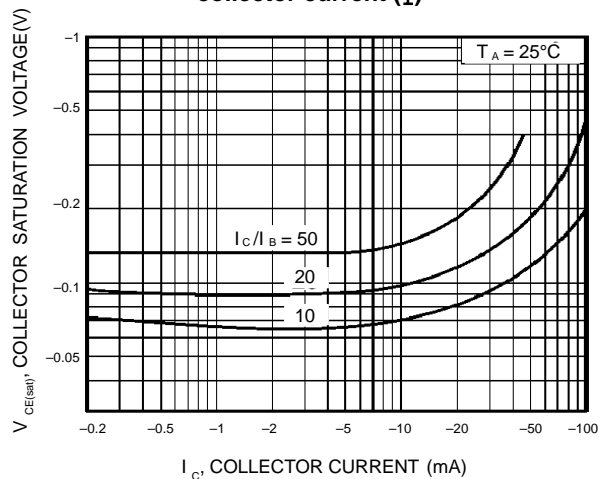
**Fig.4 DC current gain vs. collector current (I)**



**Fig.5 DC current gain vs. collector current (II)**

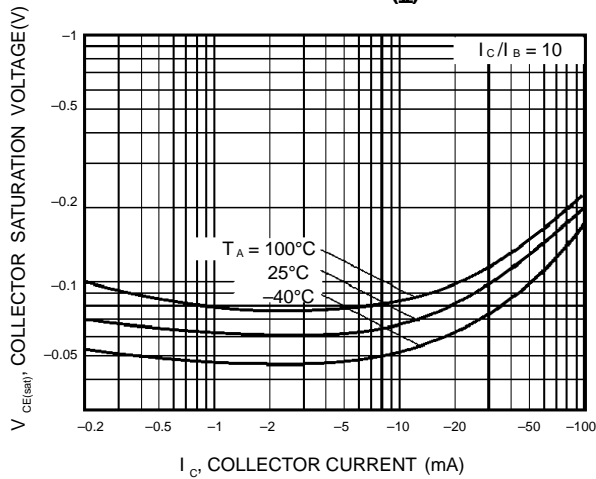


**Fig.6 Collector-emitter saturation voltage vs. collector current (I)**

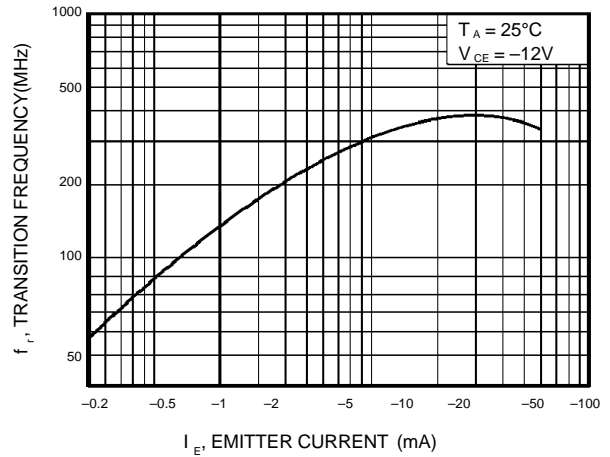


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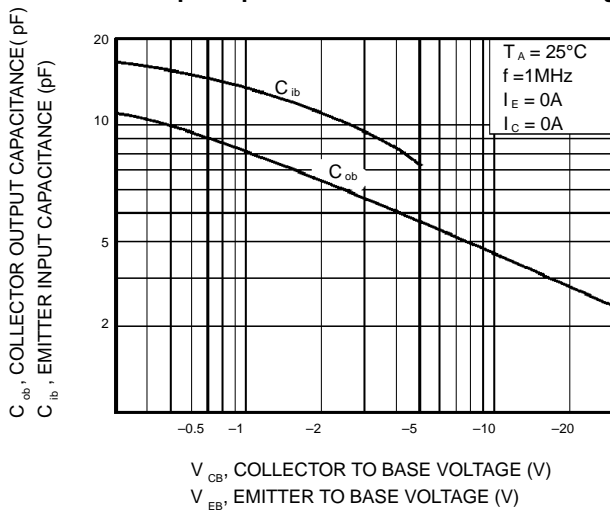
**Fig.7 Collector-emitter saturation voltage vs. collector current (I)**



**Fig.8 Gain bandwidth product vs. emitter current**



**Fig.9 Collector output capacitance vs. collector-base voltage**  
**Emitter input capacitance vs. emitter-base voltage**

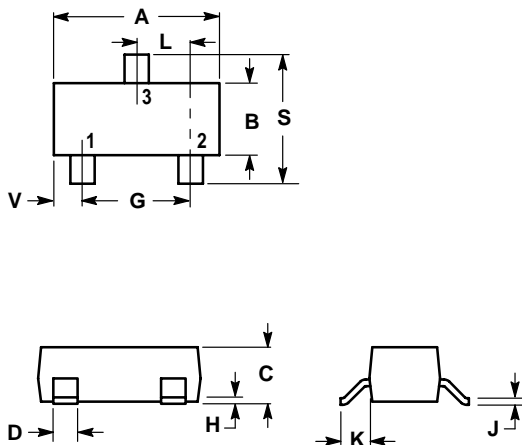


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**SOT-23**

NOTES:

1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M,1982
2. CONTROLLING DIMENSION: INCH.



| 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   | 0.0140 | 0.0285 | 0.35        | 0.69  |
| L   | 0.0350 | 0.0401 | 0.89        | 1.02  |
| S   | 0.0830 | 0.1039 | 2.10        | 2.64  |
| V   | 0.0177 | 0.0236 | 0.45        | 0.60  |

