

# General Purpose Transistors

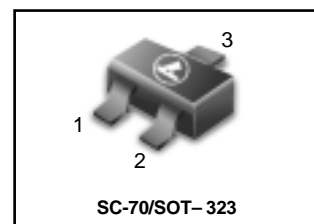
## PNP Silicon

- We declare that the material of product compliance with RoHS requirements.

### L2SA1576AQT1G Series

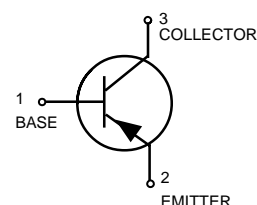
#### ORDERING INFORMATION

| Device                | Package | Shipping          |
|-----------------------|---------|-------------------|
| L2SA1576AQLT1G Series | SC-70   | 3000/Tape & Reel  |
| L2SA1576AQLT3G Series | SC-70   | 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       | mAdc |
| Collector power dissipation    | $P_C$     | 0.15       | W    |
| Junction temperature           | $T_j$     | 150        | °C   |
| Storage temperature            | $T_{stg}$ | -55 ~ +150 | °C   |



#### DEVICE MARKING

L2SA1576AQT1G =FQ L2SA1576ART1G=FR L2SA1576AST1G =FS

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

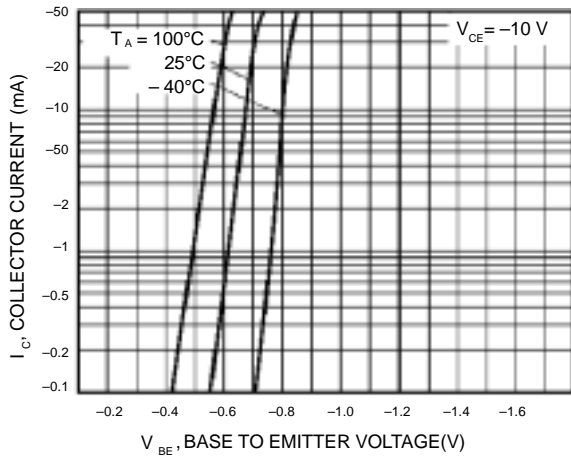
| Characteristic  | Symbol        | Min | Typ | Max  | Unit          |
|---|---------------|-----|-----|------|---------------|
| Collector-Emitter Breakdown Voltage<br>( $I_C = -1\text{ mA}$ )                         | $V_{(BR)CEO}$ | -50 | —   | —    | V             |
| Emitter-Base Breakdown Voltage<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>( $V_{CB} = -6\text{ V}$ )                                  | $I_{CBO}$     | —   | —   | -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:

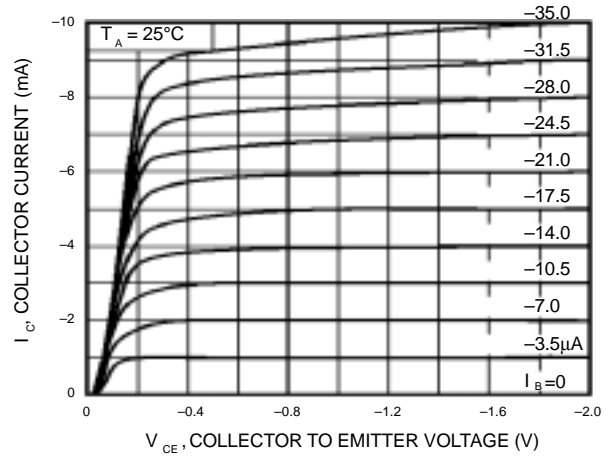
| *        | Q       | R       | S       |
|----------|---------|---------|---------|
| $h_{FE}$ | 120-270 | 180-390 | 270-560 |

## L2SA1576AQT1G Series

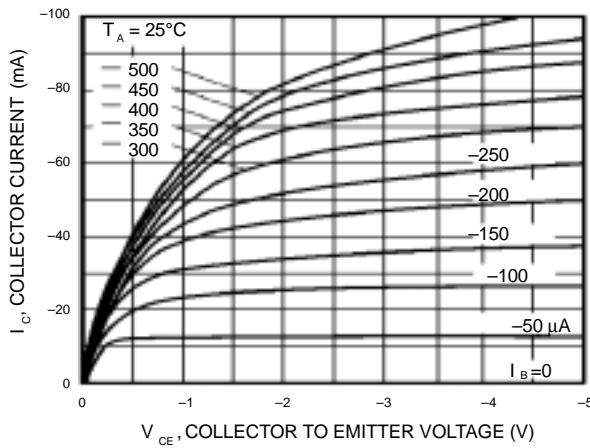
**Fig.1 Grounded emitter propagation characteristics**



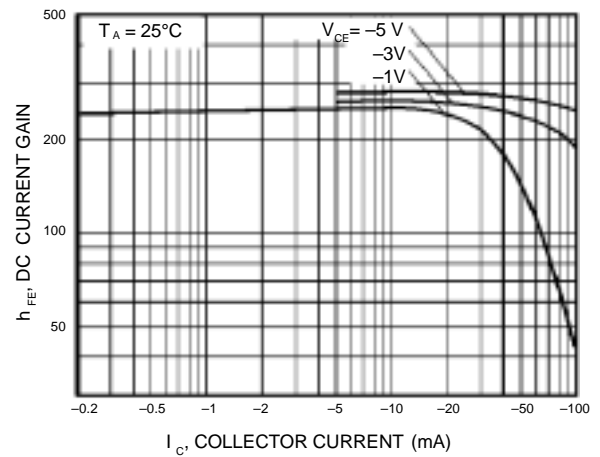
**Fig.2 Grounded emitter output characteristics(I)**



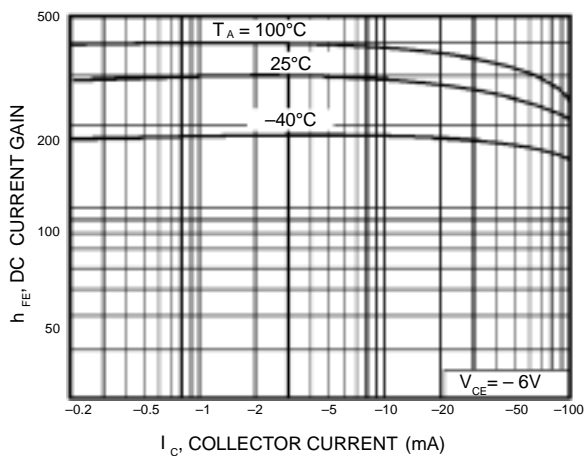
**Fig.3 Grounded emitter output characteristics(II)**



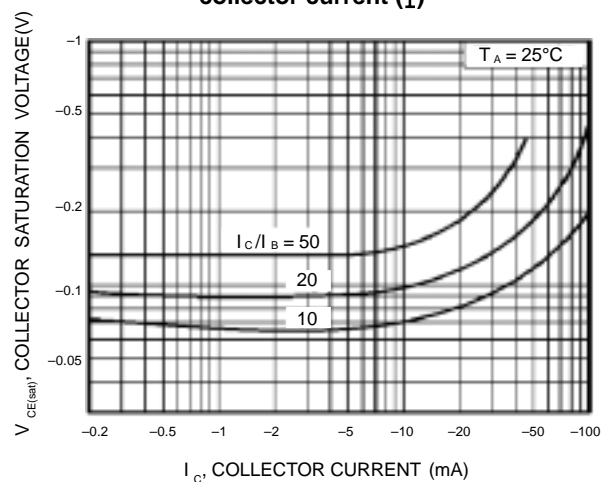
**Fig.4 DC current gain vs. collector current (I)**



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

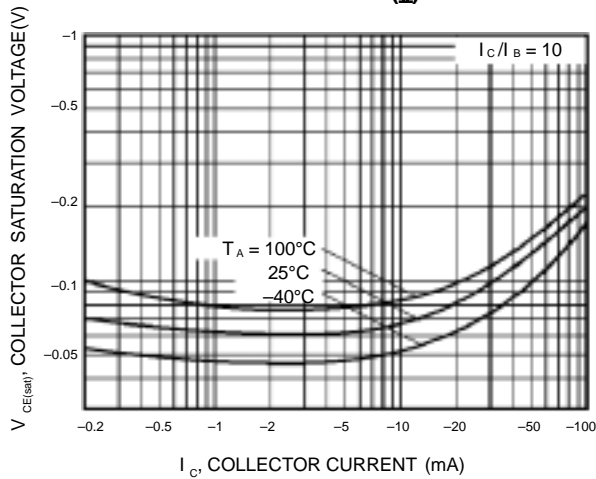


**Fig.6 Collector-emitter saturation voltage vs. collector current (I)**

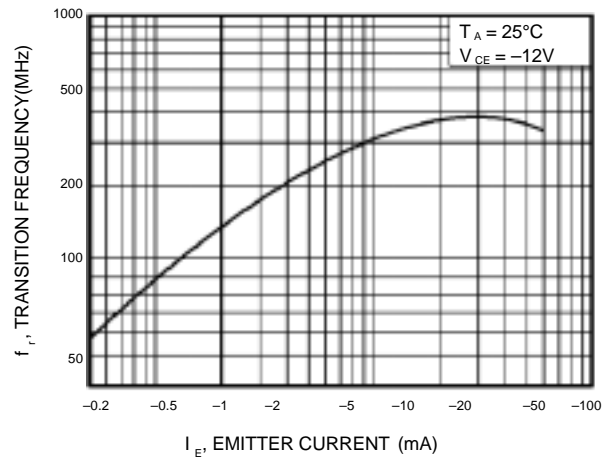


## L2SA1576AQT1G Series

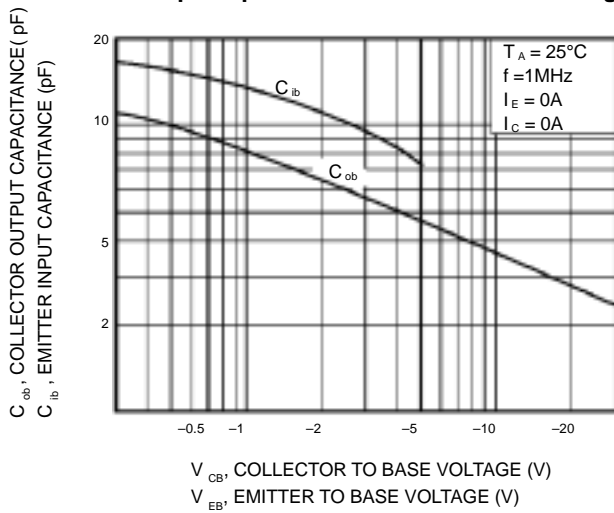
**Fig.7 Collector-emitter saturation voltage vs. collector current (I)**



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

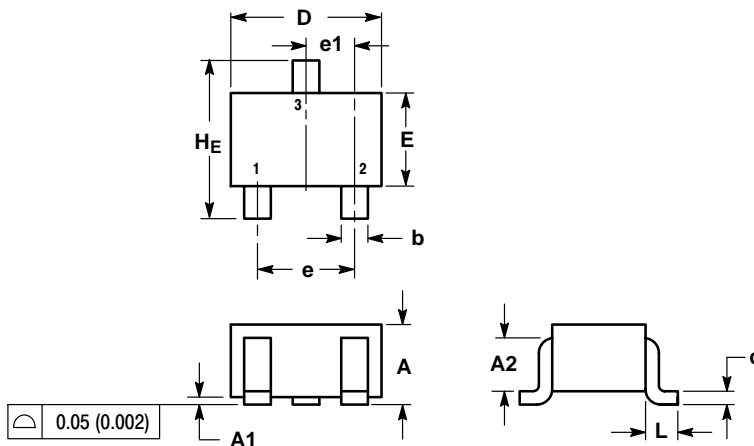


**Fig.9 Collector output capacitance vs. collector-base voltage  
Emitter input capacitance vs. emitter-base voltage**



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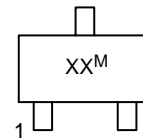
### SC-70/SOT-323


**NOTES:**

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

| DIM            | MILLIMETERS |      |      | INCHES    |       |       |
|----------------|-------------|------|------|-----------|-------|-------|
|                | MIN         | NOM  | MAX  | MIN       | NOM   | MAX   |
| A              | 0.80        | 0.90 | 1.00 | 0.032     | 0.035 | 0.040 |
| A1             | 0.00        | 0.05 | 0.10 | 0.000     | 0.002 | 0.004 |
| A2             | 0.7 REF     |      |      | 0.028 REF |       |       |
| b              | 0.30        | 0.35 | 0.40 | 0.012     | 0.014 | 0.016 |
| c              | 0.10        | 0.18 | 0.25 | 0.004     | 0.007 | 0.010 |
| D              | 1.80        | 2.10 | 2.20 | 0.071     | 0.083 | 0.087 |
| E              | 1.15        | 1.24 | 1.35 | 0.045     | 0.049 | 0.053 |
| e              | 1.20        | 1.30 | 1.40 | 0.047     | 0.051 | 0.055 |
| e1             | 0.65 BSC    |      |      | 0.026 BSC |       |       |
| L              | 0.425 REF   |      |      | 0.017 REF |       |       |
| H <sub>E</sub> | 2.00        | 2.10 | 2.40 | 0.079     | 0.083 | 0.095 |

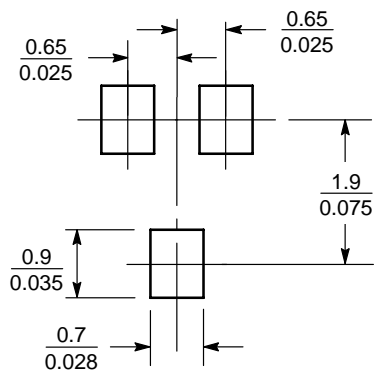
#### GENERIC MARKING DIAGRAM



- XX = Specific Device Code
- M = Date Code
- = Pb-Free Package

\*This information is generic. Please refer to device data sheet for actual part marking. Pb-Free indicator, "G" or microdot "▪", may or may not be present.

#### SOLDERING FOOTPRINT\*



SCALE 10:1 (mm/inches)