

General Purpose Transistors

NPN Silicon

FEATURE

- Low Cob, Cob=2pF(Typ.).
- Epitaxial planar type.
- PNP complement:L2SA1576A
- Pb-Free Package is available.

DEVICE MARKING AND ORDERING INFORMATION

| Device | Marking | Shipping |
|--------------|-----------------|----------------|
| L2SC4081QT1 | BQ | 3000/Tape&Reel |
| L2SC4081QT1G | BQ (Pb-Free) | 3000/Tape&Reel |
| L2SC4081RT1 | BR | 3000/Tape&Reel |
| L2SC4081RT1G | BR (Pb-Free) | 3000/Tape&Reel |
| L2SC4081ST1 | BS | 3000/Tape&Reel |
| L2SC4081ST1G | BS (Pb-Free) | 3000/Tape&Reel |

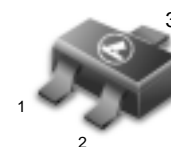
MAXIMUM RATINGS

| Rating | Symbol | Value | Unit |
|--------------------------------|-----------|------------|------|
| Collector-Emitter Voltage | V_{CEO} | 50 | V |
| Collector-Base Voltage | V_{CBO} | 60 | V |
| Emitter-Base Voltage | V_{EBO} | 7.0 | V |
| Collector Current — Continuous | I_C | 150 | mAdc |
| Collector power dissipation | P_C | 0.2 | W |
| Junction temperature | T_j | 150 | °C |
| Storage temperature | T_{stg} | -55 ~ +150 | °C |

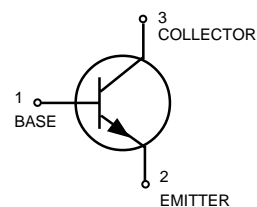
h_{FE} values are classified as follows:

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

L2SC4081*T1



SC-70/SOT-323



L2SC4081*T1
ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ unless otherwise noted.)

| Characteristic | Symbol | Min | Typ | Max | Unit |
|---|---------------|-----|-----|-----|---------------|
| Collector–Emitter Breakdown Voltage ($I_C = 1\text{ mA}$) | $V_{(BR)CEO}$ | 50 | — | — | V |
| Emitter–Base Breakdown Voltage ($I_E = 50\ \mu\text{A}$) | $V_{(BR)EBO}$ | 7 | — | — | V |
| Collector–Base Breakdown Voltage ($I_C = 50\ \mu\text{A}$) | $V_{(BR)CBO}$ | 60 | — | — | V |
| Collector Cutoff Current ($V_{CB} = 60\text{ V}$) | I_{CBO} | — | — | 0.1 | μA |
| Emitter cutoff current ($V_{EB} = 7\text{ V}$) | I_{EBO} | — | — | 0.1 | μA |
| Collector-emitter saturation voltage ($I_C / I_B = 50\text{ mA} / 5\text{ mA}$) | $V_{CE(sat)}$ | — | — | 0.4 | V |
| DC current transfer ratio ($V_{CE} = 6\text{ V}$, $I_C = 1\text{ mA}$) | h_{FE} | 120 | — | 560 | — |
| Transition frequency ($V_{CE} = 12\text{ V}$, $I_E = -2\text{ mA}$, $f = 30\text{ MHz}$) | f_T | — | 180 | — | MHz |
| Output capacitance ($V_{CB} = 12\text{ V}$, $I_E = 0\text{ A}$, $f = 1\text{ MHz}$) | C_{ob} | — | 2.0 | 3.5 | pF |

Fig.1 Grounded emitter propagation characteristics

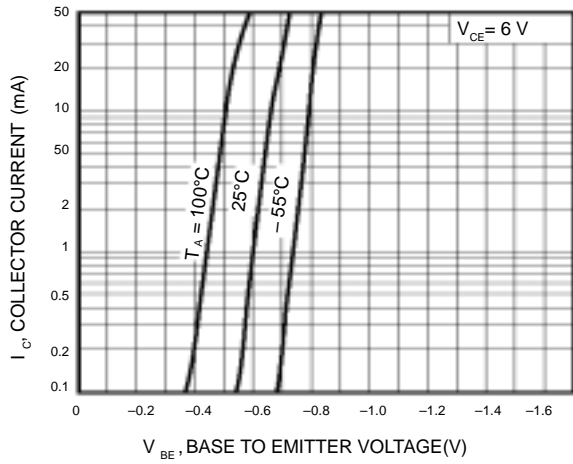


Fig.2 Grounded emitter output characteristics(I)

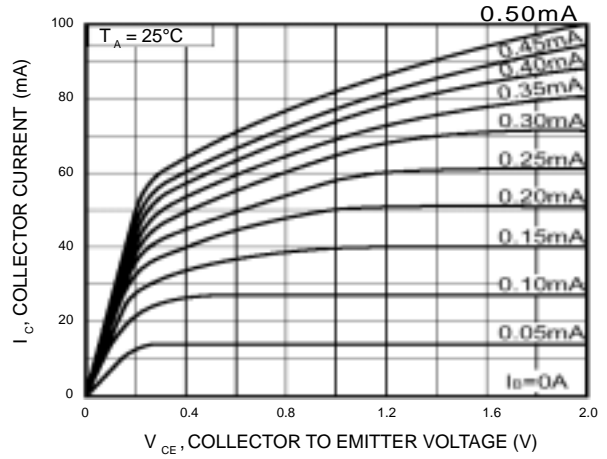


Fig.3 Grounded emitter output characteristics(II)

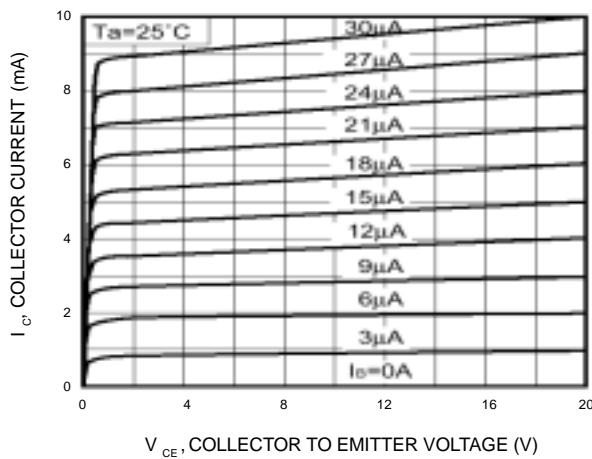


Fig.4 DC current gain vs. collector current (I)

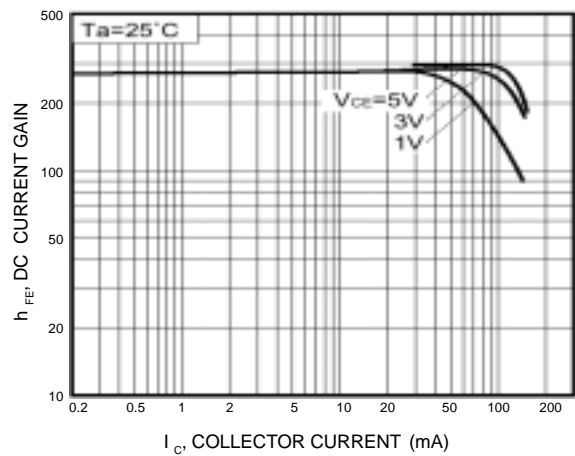


Fig.5 DC current gain vs. collector current (II)

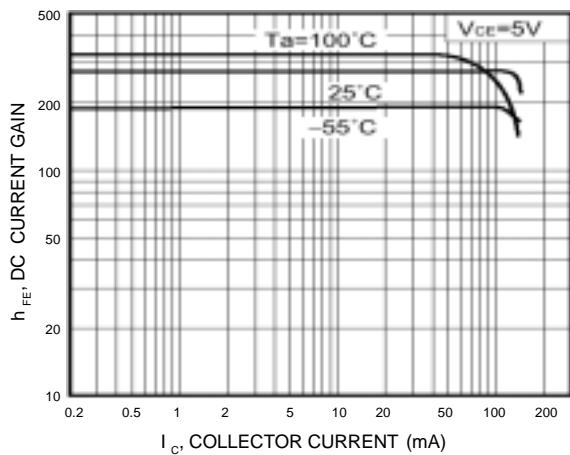
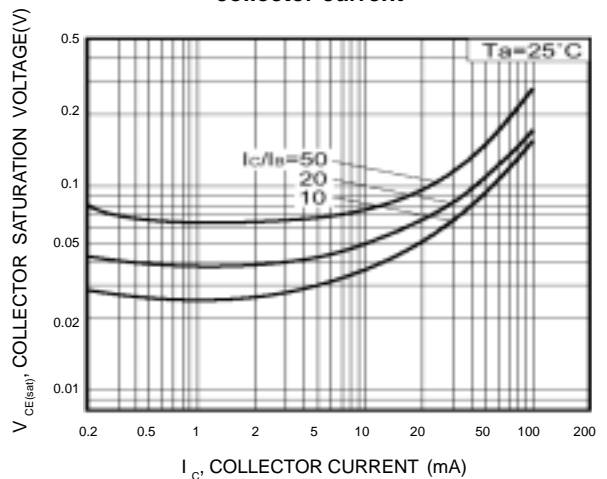


Fig.6 Collector-emitter saturation voltage vs. collector current



L2SC4081*T1

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

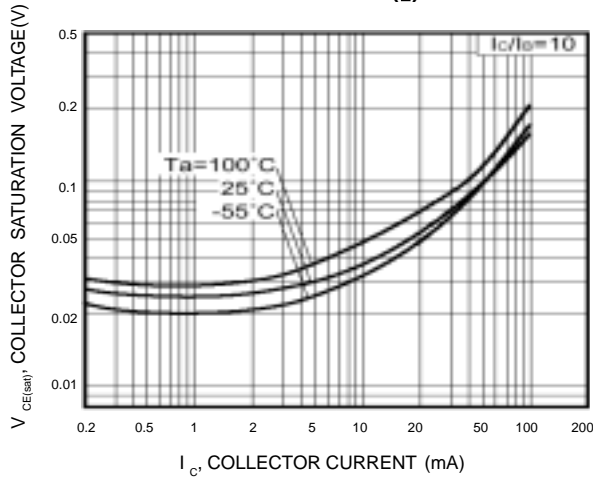


Fig.8 Collector-emitter saturation voltage vs. collector current (II)

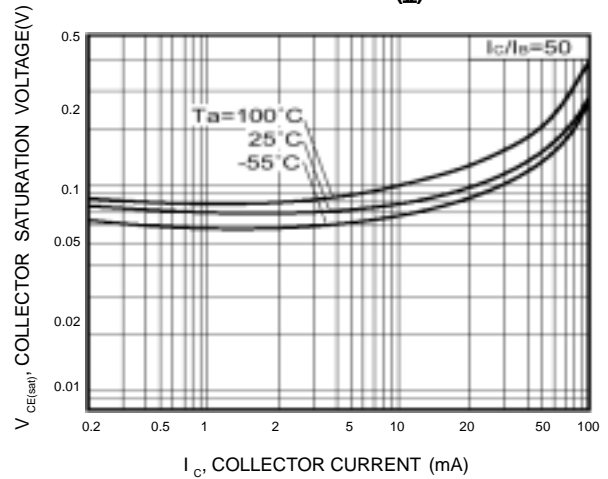


Fig.9 Gain bandwidth product vs. emitter current

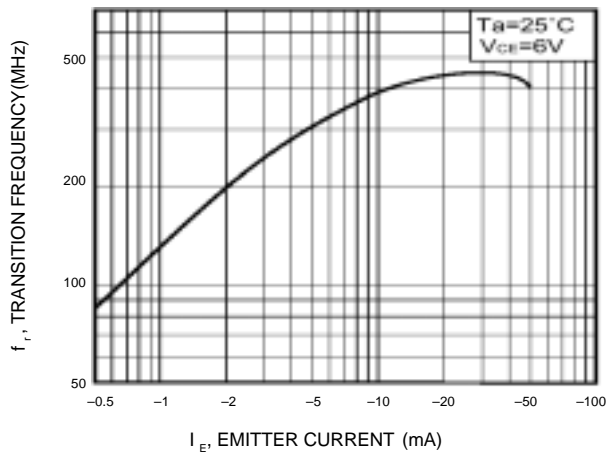


Fig.10 Collector output capacitance vs. collector-base voltage
Emitter input capacitance vs. emitter-base voltage

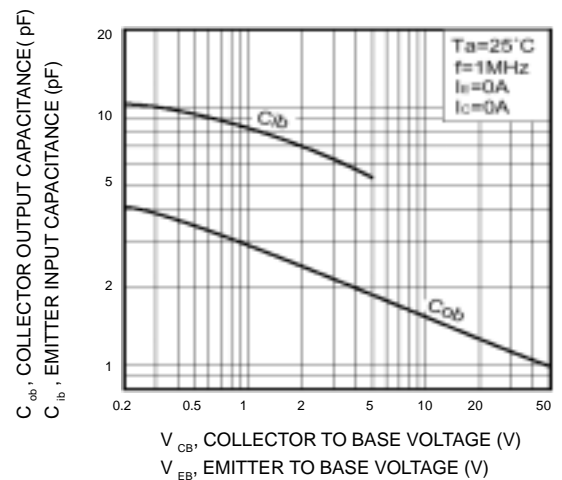
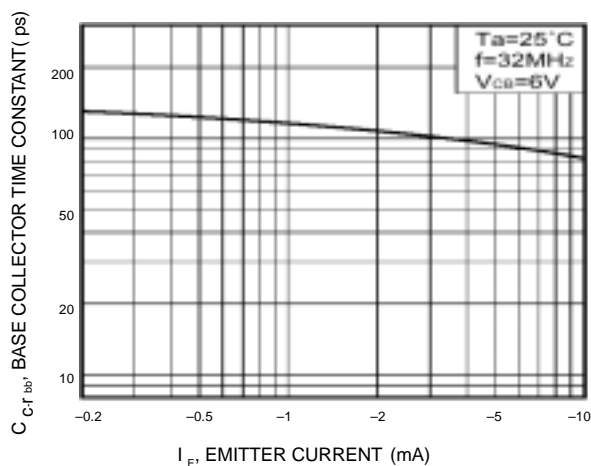


Fig.11 Base-collector time constant vs. emitter current

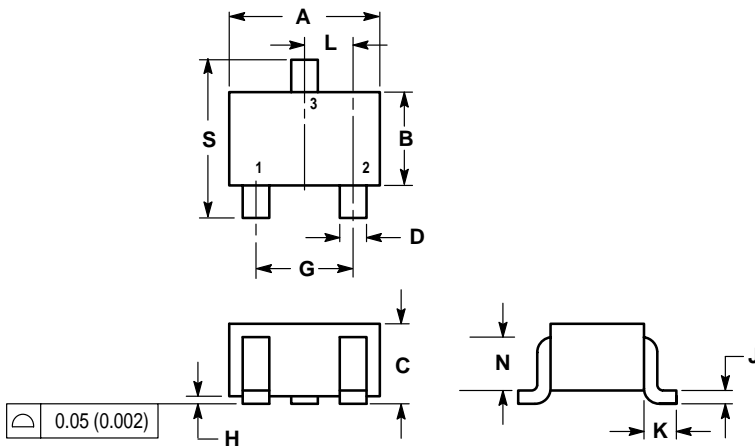


L2SC4081*T1

SC-70 / SOT-323

NOTES:

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



| DIM | INCHES | | MILLIMETERS | |
|-----|-----------|-------|-------------|------|
| | MIN | MAX | MIN | MAX |
| A | 0.071 | 0.087 | 1.80 | 2.20 |
| B | 0.045 | 0.053 | 1.15 | 1.35 |
| C | 0.032 | 0.040 | 0.80 | 1.00 |
| D | 0.012 | 0.016 | 0.30 | 0.40 |
| G | 0.047 | 0.055 | 1.20 | 1.40 |
| H | 0.000 | 0.004 | 0.00 | 0.10 |
| J | 0.004 | 0.010 | 0.10 | 0.25 |
| K | 0.017 REF | | 0.425 REF | |
| L | 0.026 BSC | | 0.650 BSC | |
| N | 0.028 REF | | 0.700 REF | |
| S | 0.079 | 0.095 | 2.00 | 2.40 |

