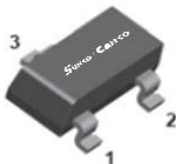
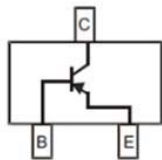


PNP Transistor



SOT-23-3L

Features

- Epoxy meets UL-94 V-0 flammability rating
- Halogen free available upon request by adding suffix "HF"
- Moisture Sensitivity Level 1
- Surface mount package ideally Suited for Automatic Insertion
- PNP

Mechanical Data

- Package: SOT-23
- Terminals: Tin plated leads, solderable per J-STD-002 and JESD22-B102
- Marking:

|           |    |
|-----------|----|
| 2SA1037-Q | FQ |
| 2SA1037-R | FR |
| 2SA1037-S | FS |

■ Maximum Ratings (Ta=25°C unless otherwise noted)

| Item                           | Symbol    | Unit | Conditions                | Value       |
|--------------------------------|-----------|------|---------------------------|-------------|
| Collector-Base Voltage         | $V_{CBO}$ | V    | $I_C = -50\mu A, I_E = 0$ | -60         |
| Collector-Emitter Voltage      | $V_{CEO}$ | V    | $I_C = -1mA, I_B = 0$     | -50         |
| Emitter-Base Voltage           | $V_{EBO}$ | V    | $I_E = -50\mu A, I_C = 0$ | -6          |
| Collector Current              | $I_C$     | A    |                           | -0.15       |
| Collector Power Dissipation    | $P_C$     | mW   |                           | 200         |
| Operating Junction Temperature | $T_j$     | °C   |                           | 150         |
| Storage Temperature            | $T_{stg}$ | °C   |                           | -55 to +150 |

■ Electrical Characteristics (Ta=25°C unless otherwise noted)

| Item                                 | Symbol        | Unit    | Conditions                             | Min | Type | Max  |
|--------------------------------------|---------------|---------|--|-----|------|------|
| Collector-base breakdown voltage     | $V_{CBO}$     | V       | $I_C = -50\mu A, I_E = 0$              | -60 |      |      |
| Collector-emitter breakdown voltage  | $V_{CEO}$     | V       | $I_C = -1mA, I_B = 0$                  | -50 |      |      |
| Emitter-base breakdown voltage       | $V_{EBO}$     | V       | $I_E = -50\mu A, I_C = 0$              | -6  |      |      |
| Collector-base cut-off current       | $I_{CBO}$     | $\mu A$ | $V_{CB} = -60V, I_E = 0$               |     |      | -0.1 |
| Emitter-base cut-off current         | $I_{EBO}$     | $\mu A$ | $V_{EB} = -6V, I_C = 0$                |     |      | -0.1 |
| DC current gain                      | $h_{FE}$      |         | $V_{CE} = -6V, I_C = -1mA$             | 120 |      | 560  |
| Collector-emitter saturation voltage | $V_{CE(sat)}$ | V       | $I_C = -50mA, I_B = -5mA$              |     |      | -0.5 |
| Transition frequency                 | $f_T$         | MHz     | $V_{CE} = -12V, I_C = -2mA, f = 30MHz$ |     | 140  |      |
| Collector-base output capacitance    | $C_{ob}$      | pF      | $V_{CB} = -12V, I_E = 0, f = 1MHz$     |     | 4    | 5    |

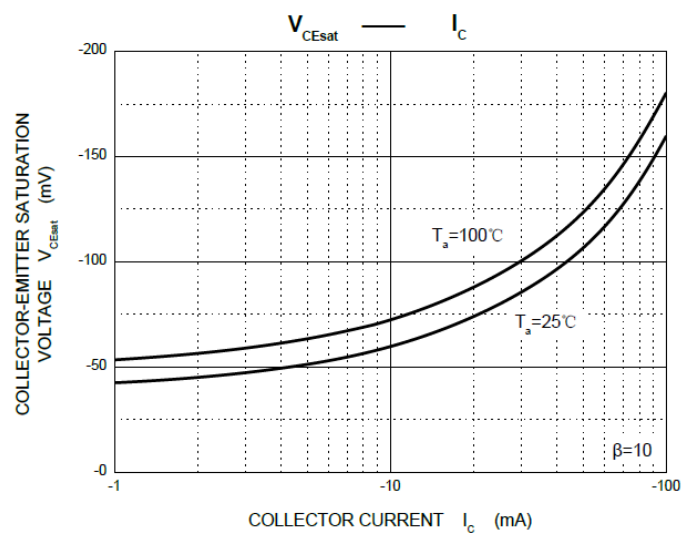
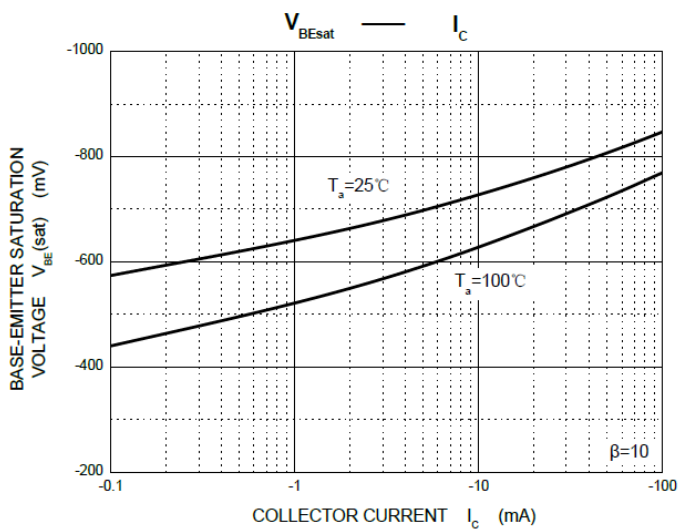
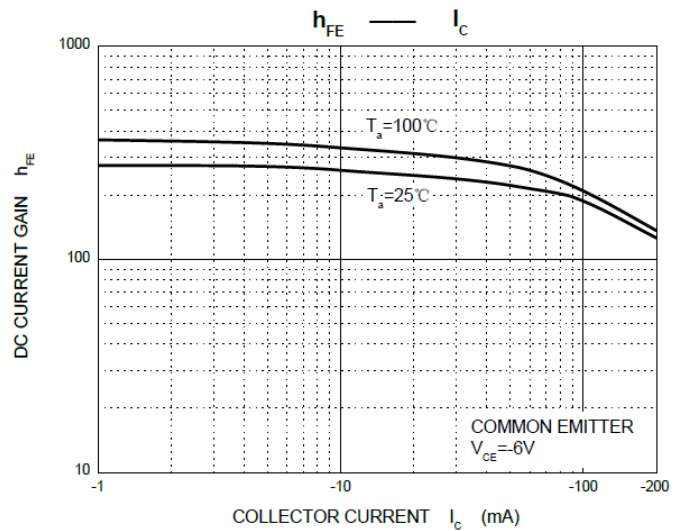
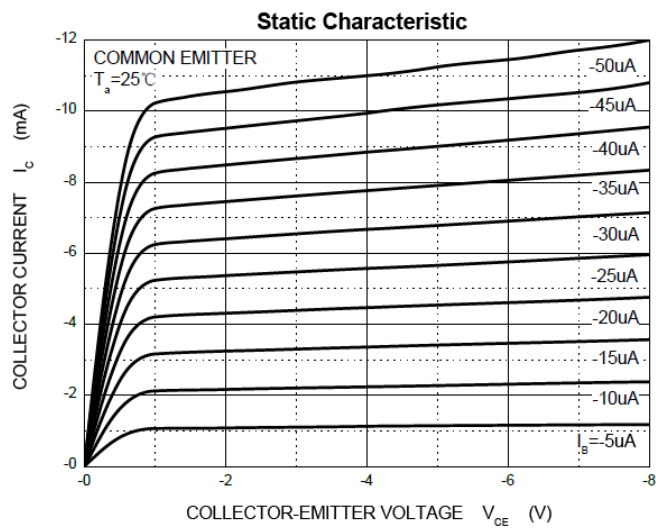
■ CLASSIFICATION OF HFE

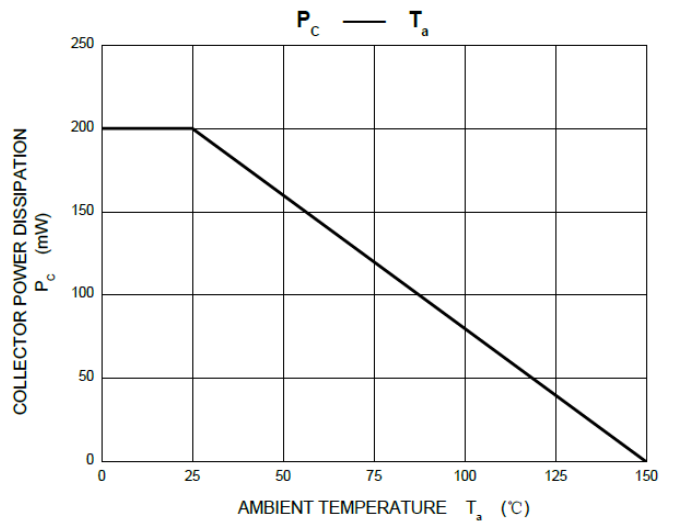
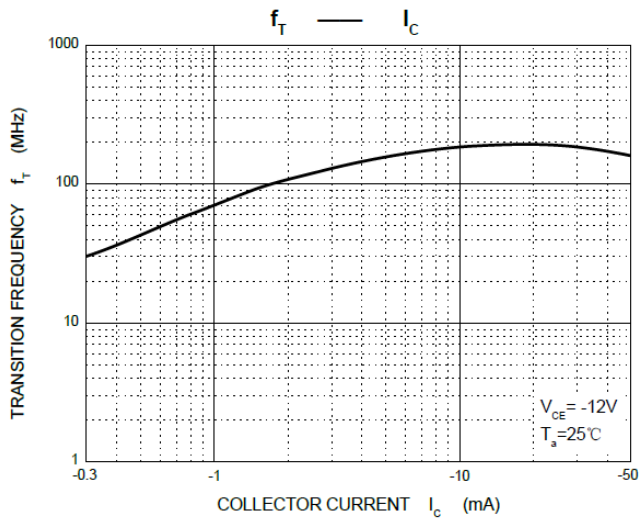
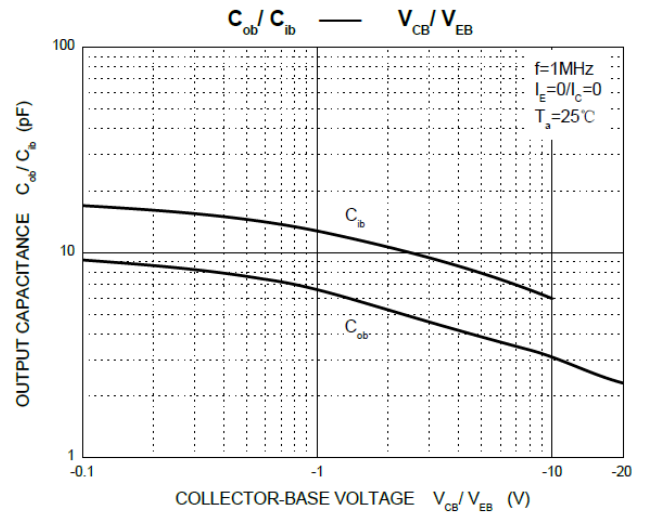
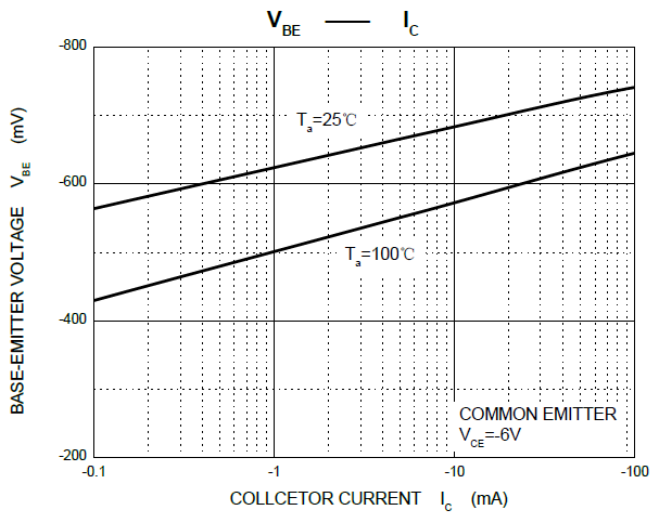
| Rank  | Q       | R       | S       |
|-------|---------|---------|---------|
| Range | 120-270 | 180-390 | 270-560 |

■ Ordering Information (Example)

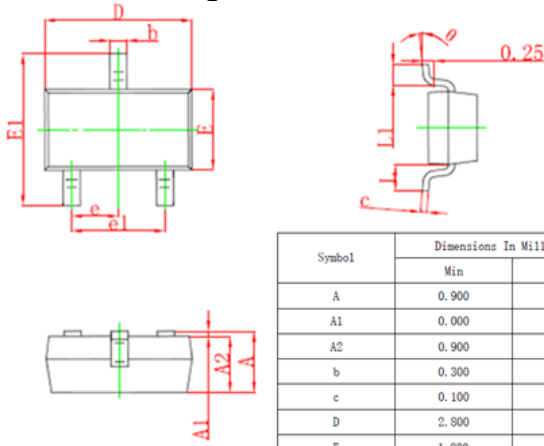
| PREFERRED P/N | PACKING CODE | UNIT WEIGHT(g)    | MINIMUM PACKAGE(pcs) | INNER BOX QUANTITY(pcs) | OUTER CARTON QUANTITY(pcs) | DELIVERY MODE |
|---------------|--------------|-------------------|----------------------|-------------------------|----------------------------|---------------|
| 2SA1037       | F2           | Approximate 0.008 | 3000                 | 30000                   | 120000                     | 7" reel       |

■ Characteristics(Typical)



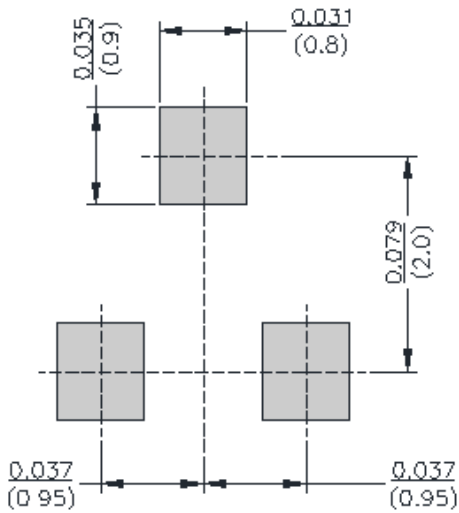


■SOT-23 Package Outline Dimensions



| Symbol | Dimensions In Millimeters |       | Dimensions In Inches |       |
|--------|---------------------------|-------|----------------------|-------|
|        | Min                       | Max   | Min                  | Max   |
| A      | 0.900                     | 1.150 | 0.035                | 0.045 |
| A1     | 0.000                     | 0.100 | 0.000                | 0.004 |
| A2     | 0.900                     | 1.050 | 0.035                | 0.041 |
| b      | 0.300                     | 0.500 | 0.012                | 0.020 |
| c      | 0.100                     | 0.200 | 0.004                | 0.008 |
| D      | 2.800                     | 3.000 | 0.110                | 0.118 |
| E      | 1.200                     | 1.400 | 0.047                | 0.055 |
| E1     | 2.250                     | 2.550 | 0.089                | 0.100 |
| e      | 0.950TYP                  |       | 0.037TYP             |       |
| e1     | 1.800                     | 2.000 | 0.071                | 0.079 |
| L      | 0.550REF                  |       | 0.022REF             |       |
| L1     | 0.300                     | 0.500 | 0.012                | 0.020 |
| phi    | 0°                        | 8°    | 0°                   | 8°    |

■SOT-23 Soldering Footprint



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