



TO-92L Plastic-Encapsulate Transistors

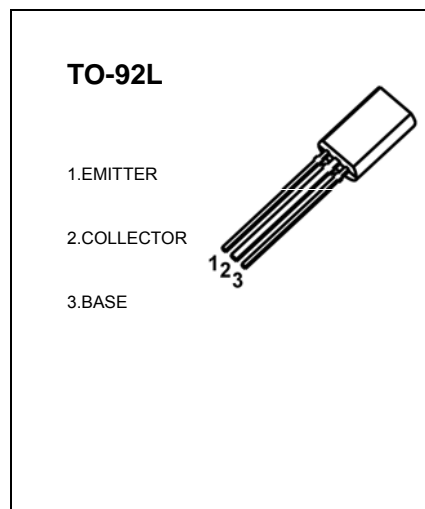
2SC2655 TRANSISTOR (NPN)

FEATURES

- Low Saturation Voltage: $V_{CE(sat)}=0.5V(\text{Max})(I_C=1A)$
- High Speed Switching Time: $t_{stg}=1\mu s(\text{Typ.})$
- Complementary to 2SA1020

MAXIMUM RATINGS ($T_a=25^\circ\text{C}$ unless otherwise noted)

| Symbol | Parameter | Symbol | Unit |
|-----------|-------------------------------|---------|------------------|
| V_{CBO} | Collector-Base Voltage | 50 | V |
| V_{CEO} | Collector-Emitter Voltage | 50 | V |
| V_{EBO} | Emitter-Base Voltage | 5 | V |
| I_C | Collector Current –Continuous | 2 | A |
| P_C | Collector Power Dissipation | 0.9 | W |
| T_J | Junction Temperature | 150 | $^\circ\text{C}$ |
| T_{stg} | Storage Temperature | -55-150 | $^\circ\text{C}$ |



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

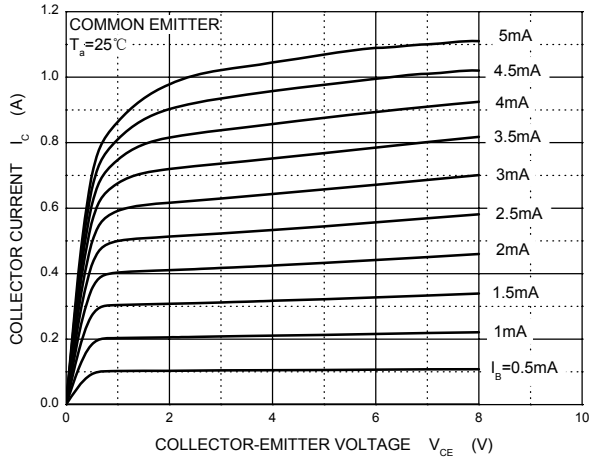
| Parameter | Symbol | Test conditions | Min | Typ | Max | Unit |
|--------------------------------------|---------------|-----------------------------|--|------|-----|---------|
| Collector-base breakdown voltage | $V_{(BR)CBO}$ | $I_C=100\mu A, I_E=0$ | 50 | | | V |
| Collector-emitter breakdown voltage | $V_{(BR)CEO}$ | $I_C=10mA, I_B=0$ | 50 | | | V |
| Emitter-base breakdown voltage | $V_{(BR)EBO}$ | $I_E=100\mu A, I_C=0$ | 5 | | | V |
| Collector cut-off current | I_{CBO} | $V_{CB}=50V, I_E=0$ | | | 1 | μA |
| Emitter cut-off current | I_{EBO} | $V_{EB}=5V, I_C=0$ | | | 1 | μA |
| DC current gain | $h_{FE(1)}$ | $V_{CE}=2V, I_C=500mA$ | 70 | | 240 | |
| | $h_{FE(2)}$ | $V_{CE}=2V, I_C=1.5A$ | 40 | | | |
| Collector-emitter saturation voltage | $V_{CE(sat)}$ | $I_C=1A, I_B=0.05A$ | | | 0.5 | V |
| Base-emitter saturation voltage | $V_{BE(sat)}$ | $I_C=1A, I_B=0.05A$ | | | 1.2 | V |
| Transition frequency | f_T | $V_{CE}=2V, I_C=0.5A$ | | 100 | | MHz |
| Collector output capacitance | C_{ob} | $V_{CB}=10V, I_E=0, f=1MHz$ | | 30 | | pF |
| Switch time | Tune on Time | t_{on} | | 0.15 | | μs |
| | Storage Time | t_{stg} | $V_{CC}=30V, I_C=1A, I_{B1}=-I_{B2}=0.05A$ | 2 | | |
| | Fall Time | t_f | | 0.15 | | |

CLASSIFICATION OF $h_{FE(1)}$

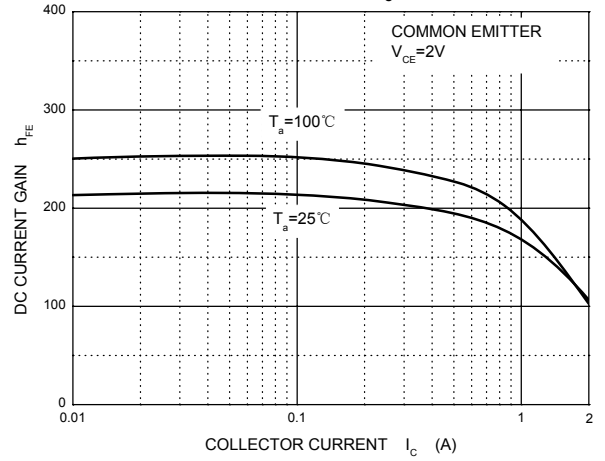
| Rank | O | Y |
|-------|--------|---------|
| Range | 70-140 | 120-240 |

Typical Characteristics

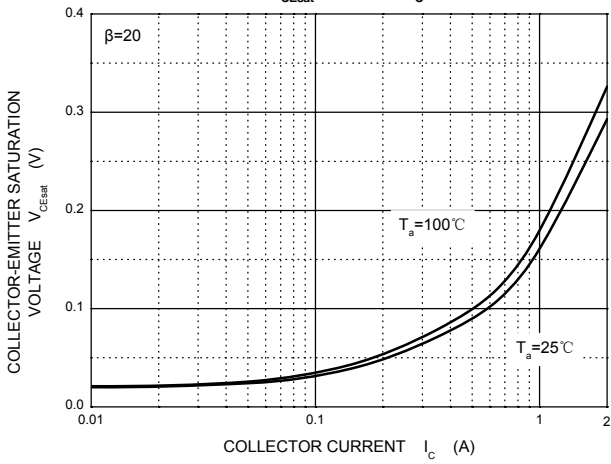
Static Characteristic



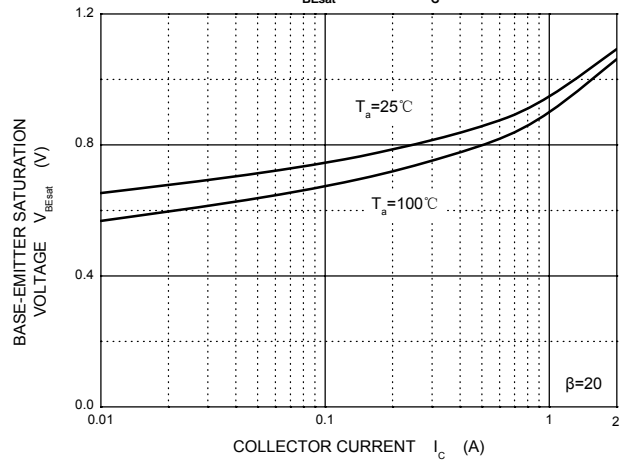
h_{FE} — I_c



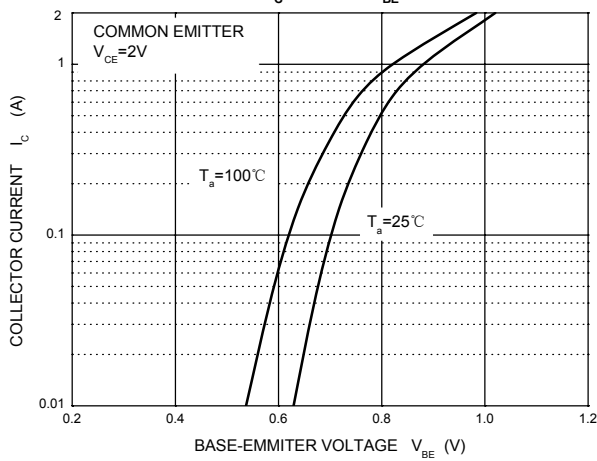
V_{CEsat} — I_c



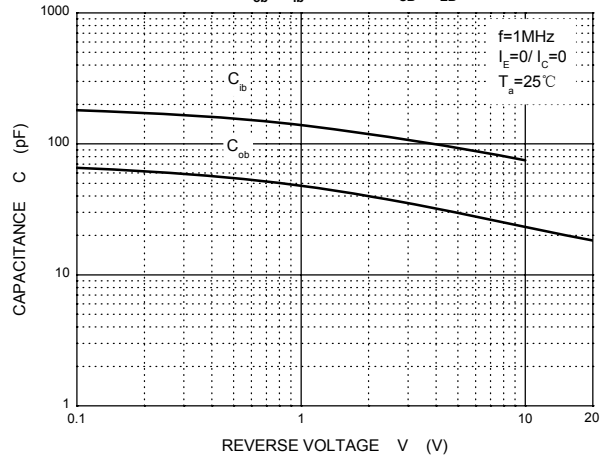
V_{BEsat} — I_c



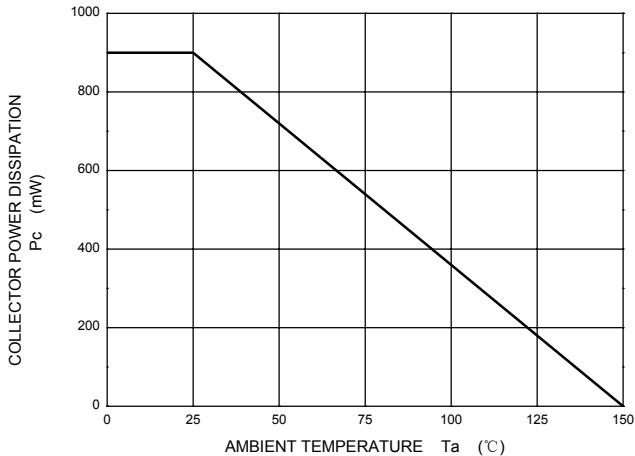
I_c — V_{BE}



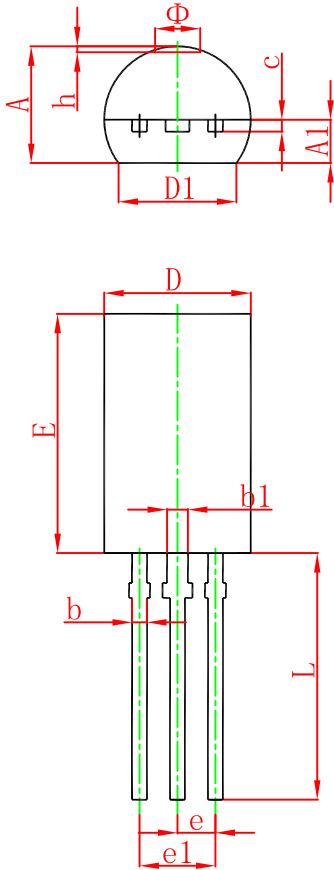
C_{ob}/C_{ib} — V_{CB}/V_{EB}



P_c — T_a

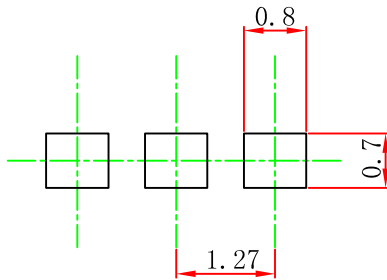


TO-92L Package Outline Dimensions



| Symbol | Dimensions In Millimeters | | Dimensions In Inches | |
|--------|---------------------------|--------|----------------------|-------|
| | Min. | Max. | Min. | Max. |
| A | 3.750 | 4.050 | 0.148 | 0.159 |
| A1 | 1.280 | 1.580 | 0.050 | 0.062 |
| b | 0.380 | 0.550 | 0.015 | 0.022 |
| b1 | 0.620 | 0.780 | 0.024 | 0.031 |
| c | 0.350 | 0.450 | 0.014 | 0.018 |
| D | 4.750 | 5.050 | 0.187 | 0.199 |
| D1 | 4.000 | | 0.157 | |
| E | 7.850 | 8.150 | 0.309 | 0.321 |
| e | 1.270 TYP. | | 0.050 TYP. | |
| e1 | 2.440 | 2.640 | 0.096 | 0.104 |
| L | 13.800 | 14.200 | 0.543 | 0.559 |
| Φ | | 1.600 | | 0.063 |
| h | 0.000 | 0.300 | 0.000 | 0.012 |

TO-92L Suggested Pad Layout



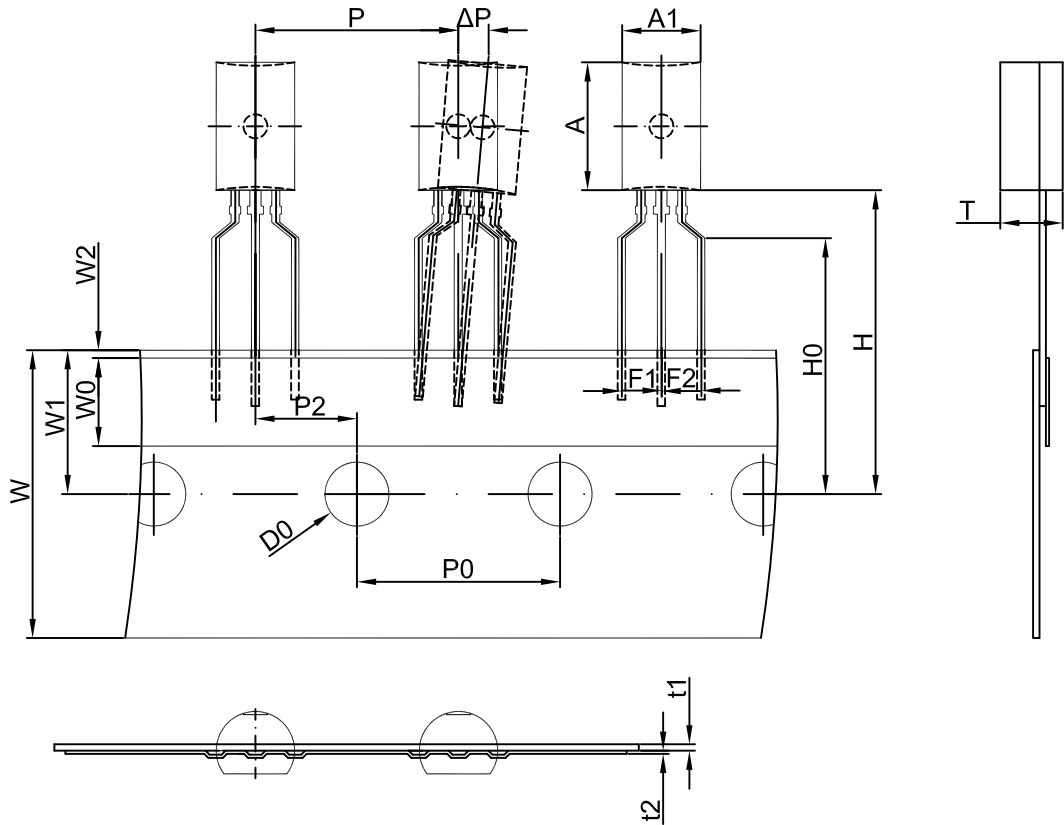
Note:

1. Controlling dimension: in millimeters.
2. General tolerance: ± 0.05 mm.
3. The pad layout is for reference purposes only.

NOTICE

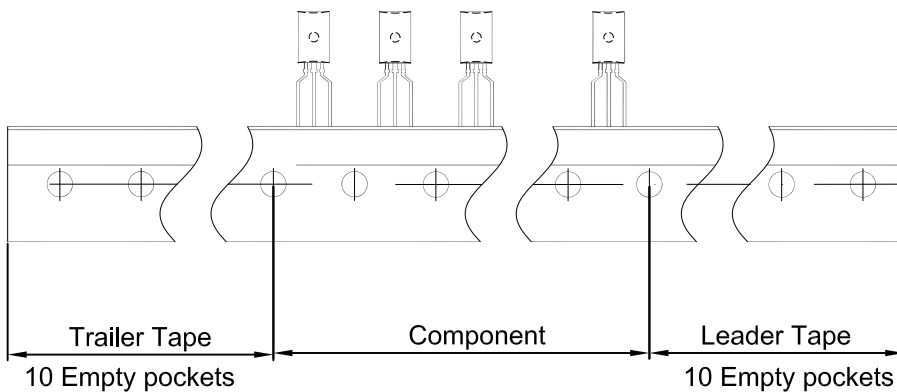
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TO-92L PACKAGE TAPEING DIMENSION



Dimensions are in millimeter

| A1 | A | T | P | P0 | P2 | F1 | F2 | W |
|----------|----------|----------|---------------|----------|----------|----------|----------|---------------|
| 4.9±0.15 | 8.0±0.15 | 3.9±0.15 | 12.7±0.3 | 12.7±0.2 | 6.35±0.3 | 2.5±0.3 | 2.5±0.3 | 18.0+1.0/-0.5 |
| W0 | W1 | W2 | H | H0 | D0 | t1 | t2 | ΔP |
| 6.0±0.5 | 9.0±0.5 | 1.0 MAX. | 19.0+2.0/-1.0 | 16.0±0.5 | 4.0±0.2 | 0.4±0.05 | 0.2±0.05 | 0 ± 1.0 |



| Package | Box | Box Size(mm) | Carton | Carton Size(mm) |
|---------|----------|--------------|------------|-----------------|
| TO-92L | 2000 pcs | 333×203×42 | 20,000 pcs | 493×400×264 |