

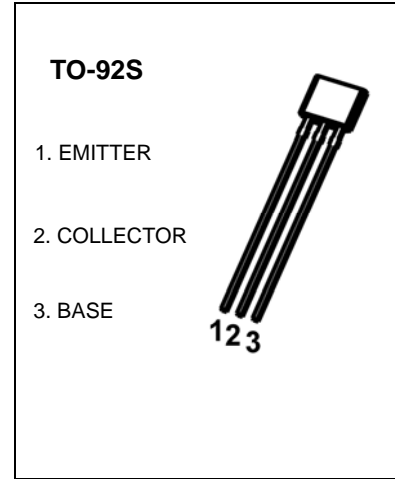


TO-92S Plastic-Encapsulate Transistors

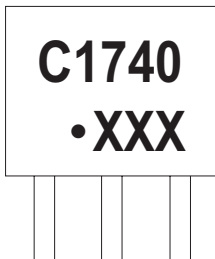
2SC1740S TRANSISTOR (NPN)

FEATURES

Low Cob

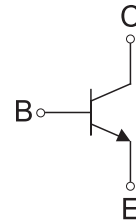


MARKING



C1740=Device code
 Solid dot= Green molding compound device,
 if none, the normal device
 XXX=Code

Equivalent Circuit



ORDERING INFORMATION

| Part Number | Package | Packing Method | Pack Quantity |
|-------------|---------|----------------|---------------|
| 2SC1740S | TO-92S | Bulk | 1000pcs/Bag |
| 2SC1740S-TA | TO-92S | Tape | 3000pcs/Box |

MAXIMUM RATINGS (T_a=25°C unless otherwise noted)

| Symbol | Parameter | Value | Unit |
|-----------------------------------|--|---------|------|
| V _{CB0} | Collector-Base Voltage | 60 | V |
| V _{CEO} | Collector-Emitter Voltage | 50 | V |
| V _{EBO} | Emitter-Base Voltage | 7 | V |
| I _C | Collector Current –Continuous | 150 | mA |
| P _C | Collector Power Dissipation | 300 | mW |
| T _J , T _{stg} | Operation Junction and Storage Temperature Range | -55-150 | °C |

ELECTRICAL CHARACTERISTICS

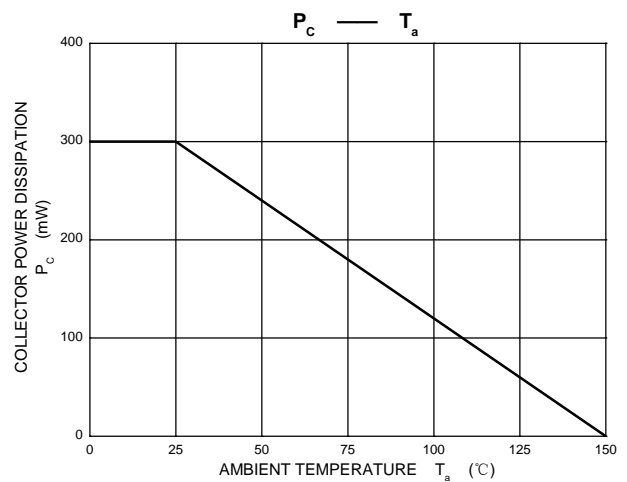
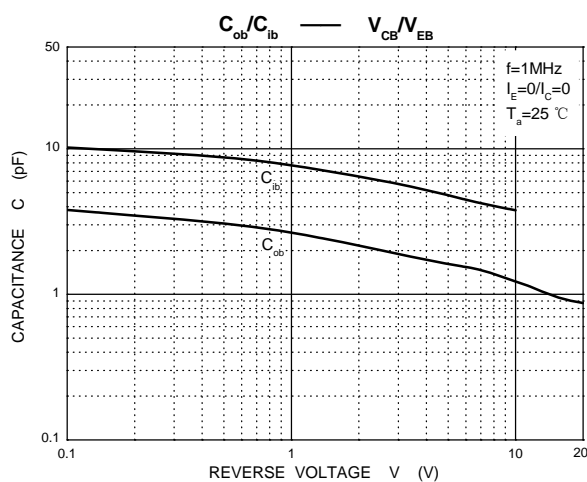
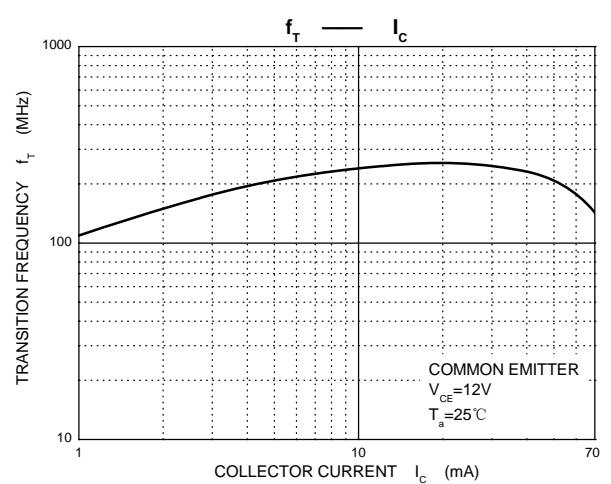
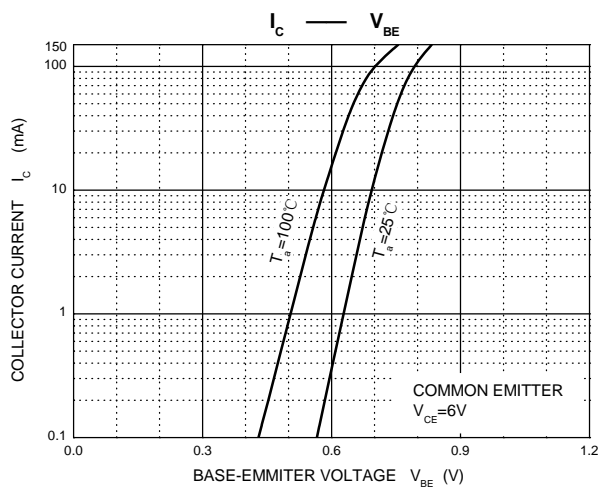
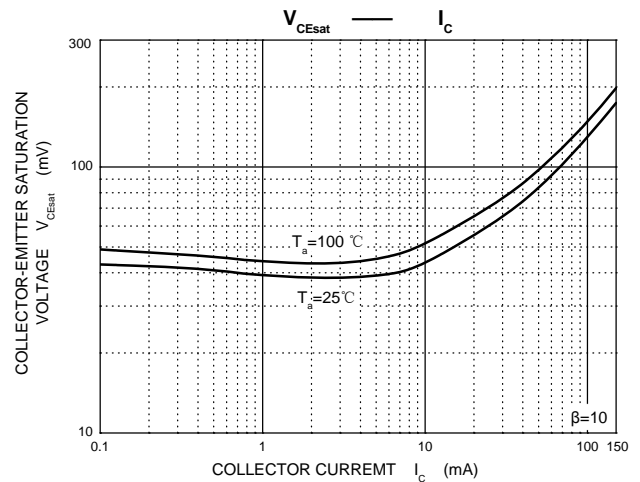
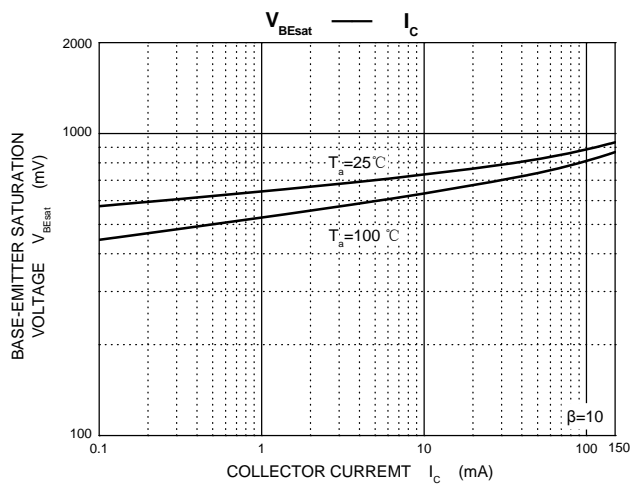
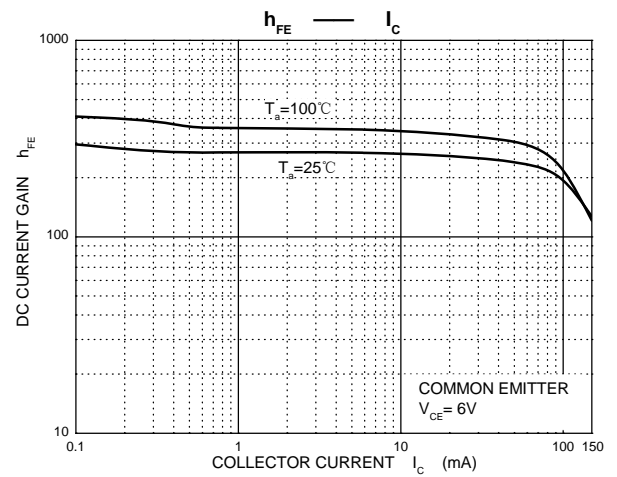
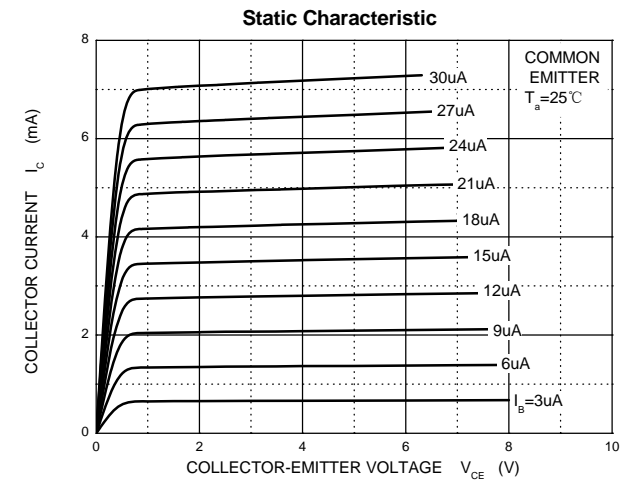
$T_a=25^\circ\text{C}$ unless otherwise specified

| Parameter | Symbol | Test conditions | Min | Typ | Max | Unit |
|--------------------------------------|---------------|---|-----|-----|-----|---------------|
| Collector-base breakdown voltage | $V_{(BR)CBO}$ | $I_C=50\mu\text{A}$, $I_E=0$ | 60 | | | V |
| Collector-emitter breakdown voltage | $V_{(BR)CEO}$ | $I_C=1\text{mA}$, $I_B=0$ | 50 | | | V |
| Emitter-base breakdown voltage | $V_{(BR)EBO}$ | $I_E=50\mu\text{A}$, $I_C=0$ | 7 | | | V |
| Collector cut-off current | I_{CBO} | $V_{CB}=60\text{V}$, $I_E=0$ | | | 0.1 | μA |
| Emitter cut-off current | I_{EBO} | $V_{EB}=7\text{V}$, $I_C=0$ | | | 0.1 | μA |
| DC current gain | h_{FE} | $V_{CE}=6\text{V}$, $I_C=1\text{mA}$ | 120 | | 560 | |
| Collector-emitter saturation voltage | $V_{CE(sat)}$ | $I_C=50\text{mA}$, $I_B=5\text{mA}$ | | | 0.4 | V |
| Transition frequency | f_T | $V_{CE}=12\text{V}$, $I_C=-2\text{mA}$, $f=100\text{MHz}$ | 100 | | | MHz |
| Collector output capacitance | C_{ob} | $V_{CB}=12\text{V}$, $I_E=0$, $f=1\text{MHz}$ | | 2 | 3.5 | pF |

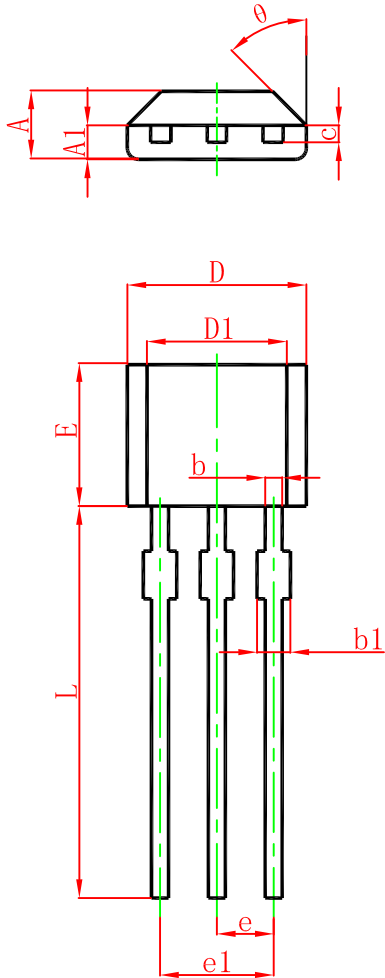
CLASSIFICATION OF h_{FE}

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

Typical Characteristics

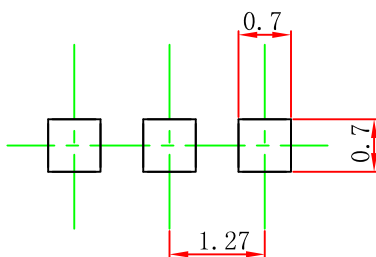


TO-92S Package Outline Dimensions



| Symbol | Dimensions In Millimeters | | Dimensions In Inches | |
|--------|---------------------------|--------|----------------------|-------|
| | Min. | Max. | Min. | Max. |
| A | 1.420 | 1.620 | 0.056 | 0.064 |
| A1 | 0.660 | 0.860 | 0.026 | 0.034 |
| b | 0.330 | 0.480 | 0.013 | 0.019 |
| b1 | 0.400 | 0.510 | 0.016 | 0.020 |
| c | 0.330 | 0.510 | 0.013 | 0.020 |
| D | 3.900 | 4.100 | 0.154 | 0.161 |
| D1 | 2.280 | 2.680 | 0.090 | 0.106 |
| E | 3.050 | 3.250 | 0.120 | 0.128 |
| e | 1.270 TYP. | | 0.050 TYP. | |
| e1 | 2.440 | 2.640 | 0.096 | 0.104 |
| L | 15.100 | 15.500 | 0.594 | 0.610 |
| θ | 45° TYP. | | 45° TYP. | |

TO-92S Suggested Pad Layout



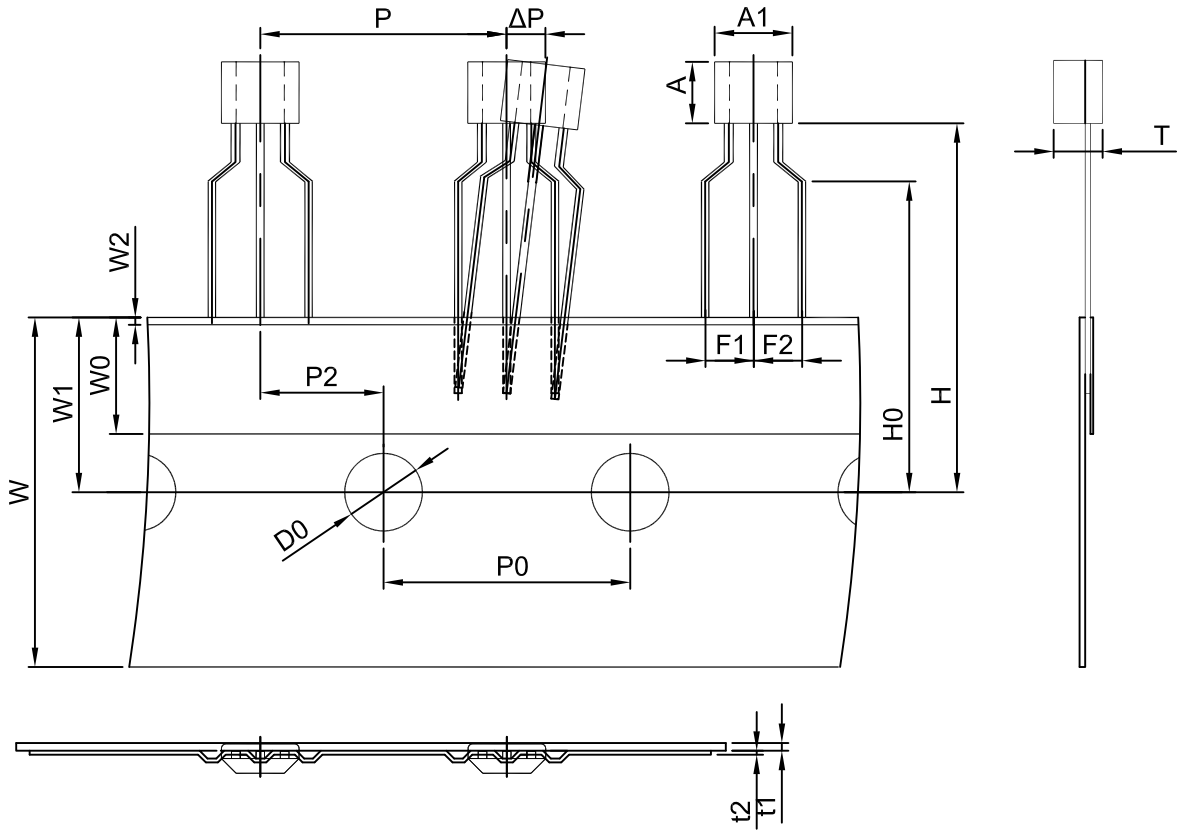
Note:

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

NOTICE

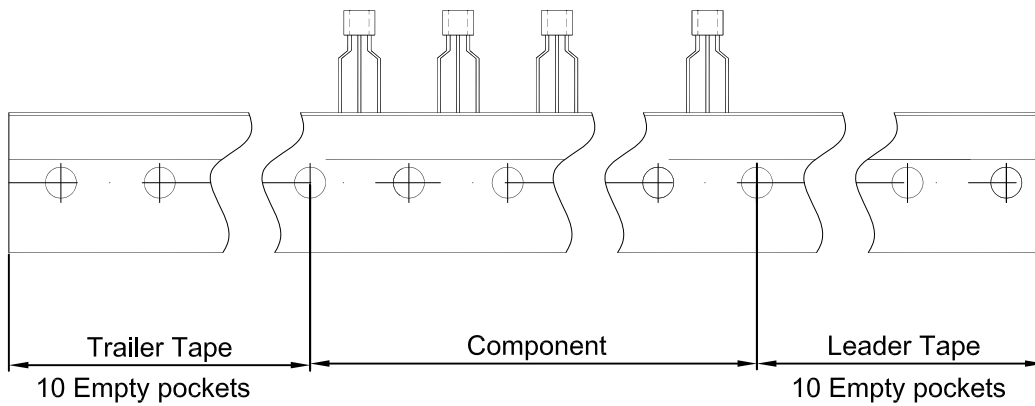
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TO-92S PACKAGE TAPING DIMENSION



Dimiensions are in millimeter

| A1 | A | T | P | P0 | P2 | F1 | F2 | W |
|-----|------|------|------|------|------|-----|-----|------|
| 4.0 | 3.15 | 1.52 | 12.7 | 12.7 | 6.35 | 2.5 | 2.5 | 18.0 |
| W0 | W1 | W2 | H | H0 | D0 | t1 | t2 | ΔP |
| 6.0 | 9.0 | 1.0 | 19.0 | 16.0 | 4.0 | 0.4 | 0.2 | 0 |



| Package | Box | Box Size(mm) | Carton | Carton Size(mm) |
|---------|----------|--------------|------------|-----------------|
| TO-92S | 3000 pcs | 333×162×43 | 30,000 pcs | 350×340×250 |

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