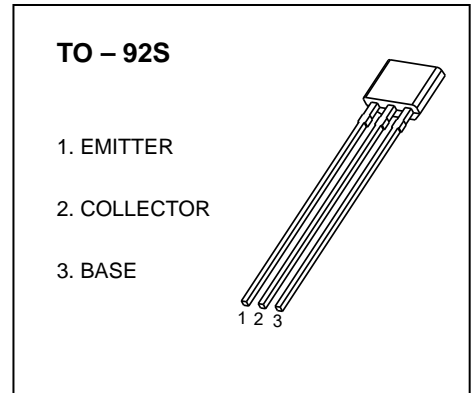


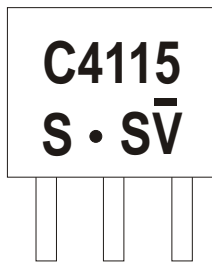
2SC4115S TRANSISTOR (NPN)

FEATURES

- Low $V_{CE(sat)}$.
- Excellent Current Gain Characteristics.
- Complements The 2SA1585S.

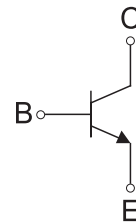


MARKING



C4115S=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 |
|-------------|---------|----------------|---------------|
| 2SC4115S | TO-92S | Bulk | 1000pcs/Bag |
| 2SC4115S-TA | TO-92S | Tape | 3000pcs/Box |

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

| Symbol | Parameter | Value | Unit |
|-----------------|--|----------|---------------------------|
| V_{CBO} | Collector-Base Voltage | 40 | V |
| V_{CEO} | Collector-Emitter Voltage | 20 | V |
| V_{EBO} | Emitter-Base Voltage | 6 | V |
| I_C | Collector Current | 3 | A |
| P_C | Collector Power Dissipation | 300 | mW |
| $R_{\theta JA}$ | Thermal Resistance From Junction To Ambient | 417 | $^\circ\text{C}/\text{W}$ |
| T_J, T_{stg} | Operation Junction and Storage Temperature Range | -55~+150 | $^\circ\text{C}$ |

ELECTRICAL CHARACTERISTICS

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

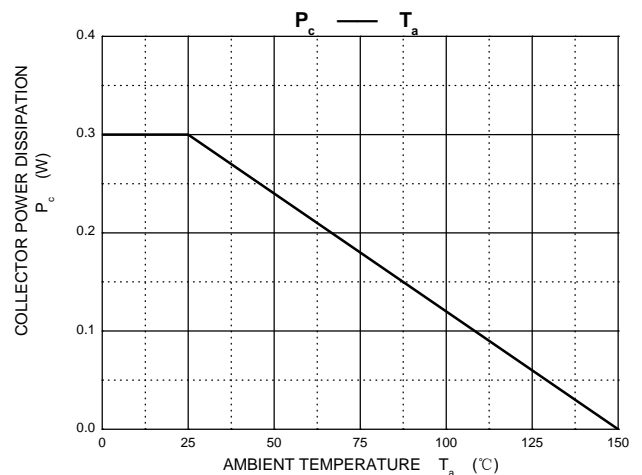
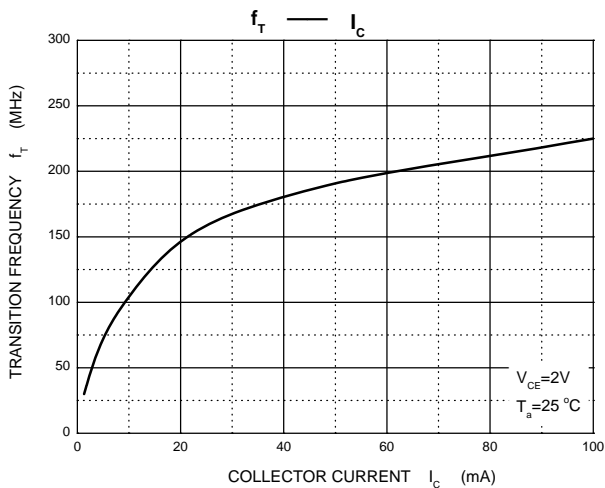
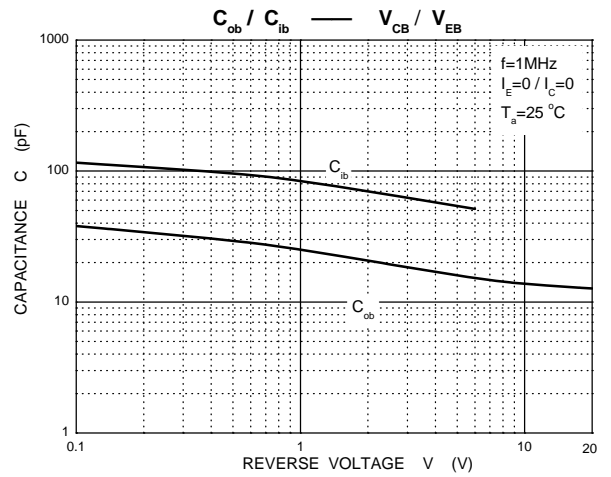
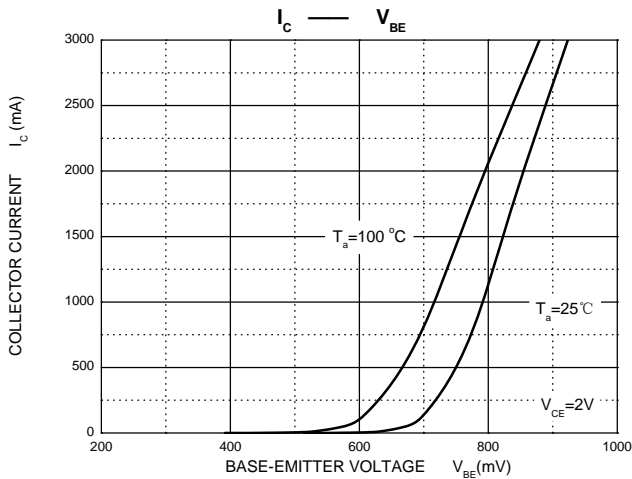
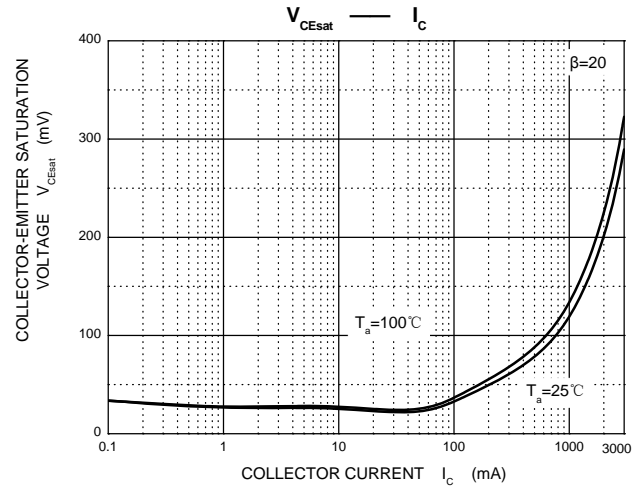
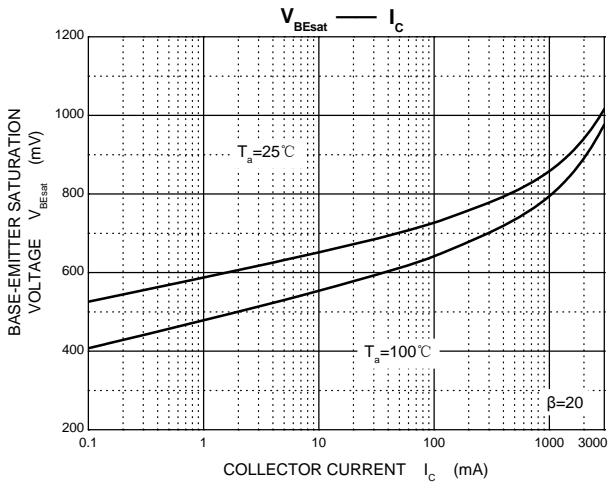
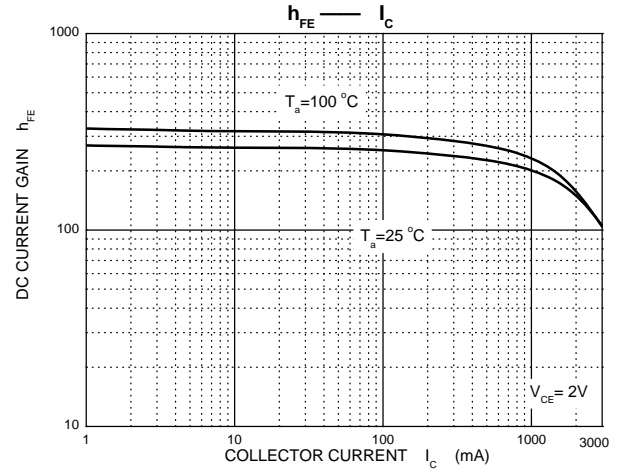
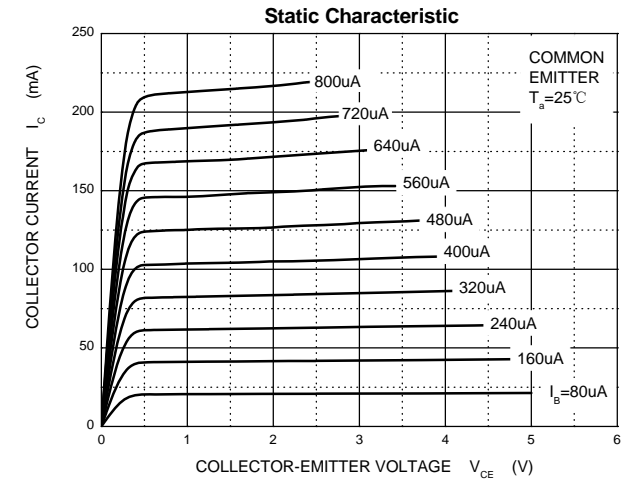
| Parameter | Symbol | Test conditions | Min | Typ | Max | Unit |
|--------------------------------------|-----------------|--|-----|-----|-----|---------------|
| Collector-base breakdown voltage | $V_{(BR)CBO}$ | $I_C=0.05\text{mA}, I_E=0$ | 40 | | | V |
| Collector-emitter breakdown voltage | $V_{(BR)CEO}$ | $I_C=1\text{mA}, I_B=0$ | 20 | | | V |
| Emitter-base breakdown voltage | $V_{(BR)EBO}$ | $I_E=0.05\text{mA}, I_C=0$ | 6 | | | V |
| Collector cut-off current | I_{CBO} | $V_{CB}=30\text{V}, I_E=0$ | | | 0.1 | μA |
| Emitter cut-off current | I_{EBO} | $V_{EB}=5\text{V}, I_C=0$ | | | 0.1 | μA |
| DC current gain | h_{FE} | $V_{CE}=2\text{V}, I_C=100\text{mA}$ | 120 | | 560 | |
| Collector-emitter saturation voltage | $V_{CE(sat)}$ * | $I_C=2\text{A}, I_B=0.1\text{A}$ | | | 0.5 | V |
| Collector output capacitance | C_{ob} | $V_{CB}=10\text{V}, I_E=0, f=1\text{MHz}$ | | 25 | | pF |
| Transition frequency | f_T | $V_{CE}=2\text{V}, I_C=0.5\text{A}, f=100\text{MHz}$ | | 290 | | MHz |

*Pulse test

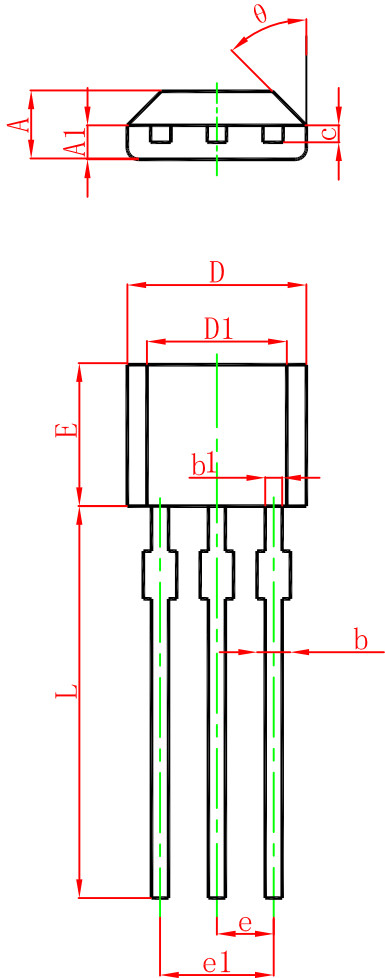
CLASSIFICATION OF h_{FE}

| RANK | Q | R | S |
|-------|---------|---------|---------|
| RANGE | 120-270 | 180-390 | 270-560 |

Typical Characteristics

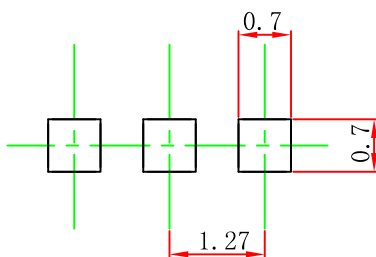


TO-92S Package Outline Dimensions



| 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



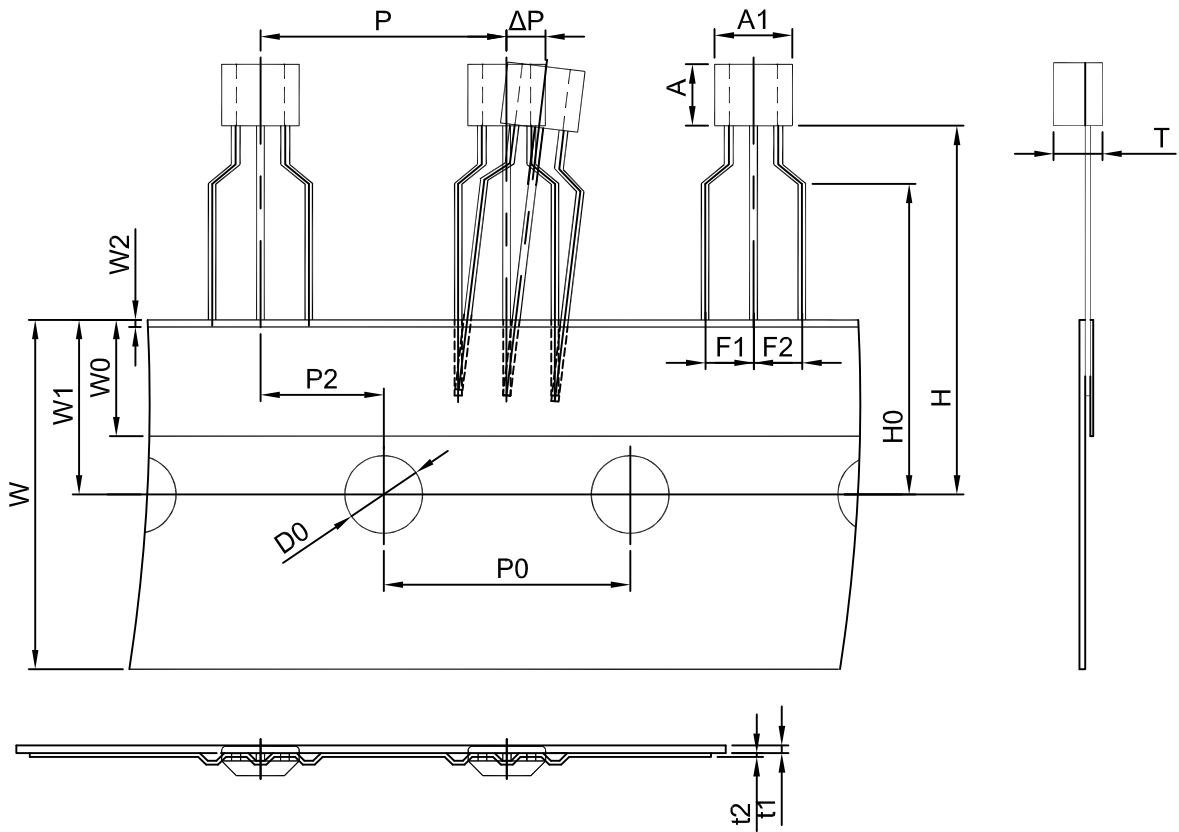
Note:

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

NOTICE

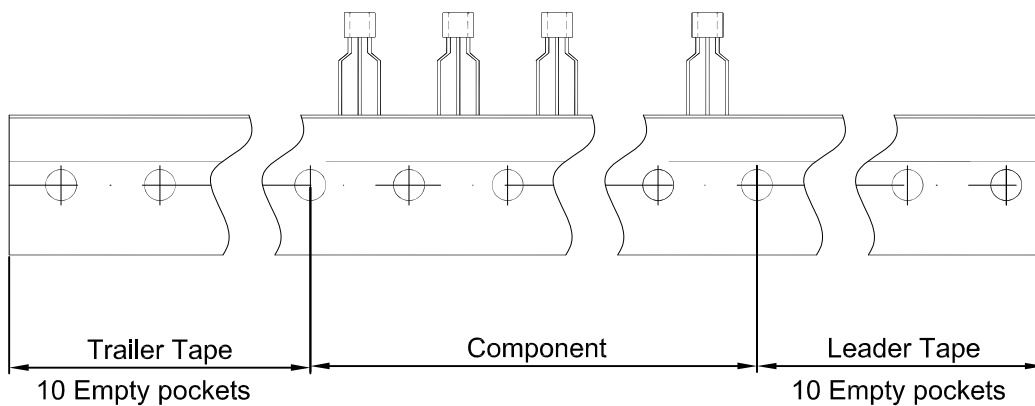
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TO-92S PACKAGE TAPING DIMENSION



Dimensions 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 | 3,000 pcs | 330×184×40 | 30,000 pcs | 505×405×240 |