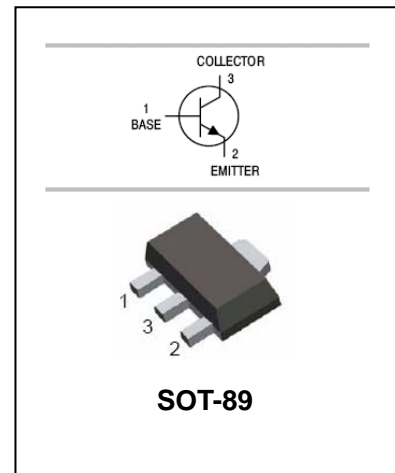


LOW FREQUENCY TRANSISTER (20V, 3A)

2SD2150

FEATURES

- Low $V_{CE(sat)}$: $V_{CE(sat)} = 0.2V(Typ.)$
($I_C/I_B = 2A/0.1A$).
- Excellent current gain characteristics.
- Complements the 2SB1424.



Structure

Epitaxial planar type NPN silicon transistor.

ORDERING INFORMATION

| Type No. | Marking | Package Code |
|----------|---------|--------------|
| 2SD2150 | CFR | SOT-89 |

MAXIMUM RATING @ $T_a = 25^\circ C$ unless otherwise specified

| 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 -Continuous | 3 5 | A(DC) A(Pulse) ^{*1} |
| P_C | Collector power dissipation | 0.5 | W |
| T_j | Junction Temperature | 150 | $^\circ C$ |
| T_{stg} | Storage Temperature | -55 to +150 | $^\circ C$ |

*1 Single pulse $P_w = 10ms$



LOW FREQUENCY TRANSISTER (20V, 3A)

2SD2150

ELECTRICAL CHARACTERISTICS @ Ta=25°C unless otherwise specified

| Parameter | Symbol | Test conditions | MIN | TYP | MAX | UNIT |
|--------------------------------------|---------------|---------------------------------------|-----|-----|-----|----------|
| Collector-base breakdown voltage | $V_{(BR)CBO}$ | $I_C=50\mu A, I_E=0$ | 40 | | | V |
| Collector-emitter breakdown voltage | $V_{(BR)CEO}$ | $I_C=1mA, I_B=0$ | 20 | | | V |
| Emitter-base breakdown voltage | $V_{(BR)EBO}$ | $I_E=50\mu A, I_C=0$ | 6 | | | V |
| Collector cut-off current | I_{CBO} | $V_{CB}=30V, I_E=0$ | | | 0.1 | μA |
| Emitter cut-off current | I_{EBO} | $V_{EB}=5V, I_C=0$ | | | 0.1 | μA |
| Collector-emitter saturation voltage | $V_{CE(sat)}$ | $I_C/I_B=2A/0.1A$ | | 0.2 | 0.5 | V |
| DC current transfer ratio | h_{FE} | $V_{CE}=2V, I_C=0.1A$ | 120 | | 560 | h_{FE} |
| Transition frequency | f_T | $V_{CE}=2V, I_E=-0.5A,$ $f=100MHz$ | | 290 | | MHz |
| Output Capacitance | C_{ob} | $V_{CB}=10V, f=1MHz, I_E=0A$ | | 25 | | pF |

*Measured using pulse current

CLASSIFICATION OF h_{FE}

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

LOW FREQUENCY TRANSISTER (20V, 3A)

2SD2150

TYPICAL CHARACTERISTICS @ Ta=25°C unless otherwise specified

● Electrical characteristic curves

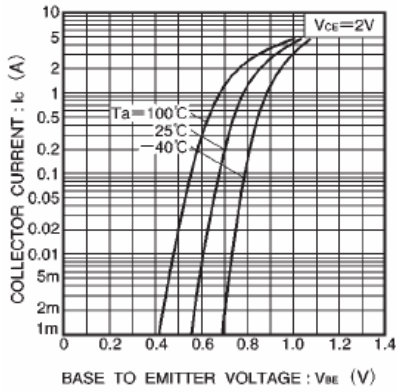


Fig.1 Grounded emitter propagation characteristics

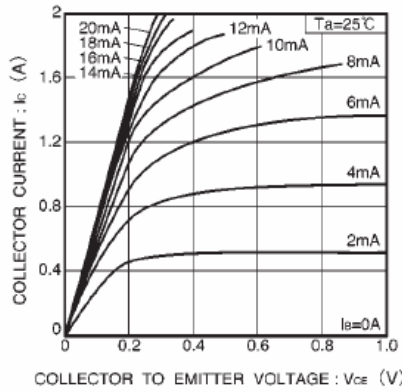


Fig.2 Grounded emitter output characteristics (I)

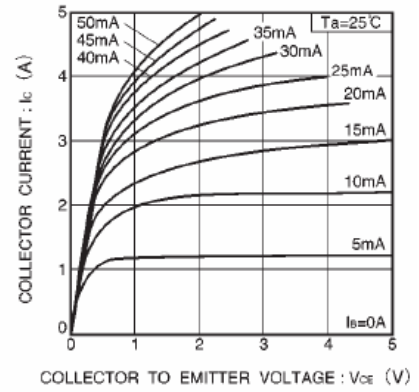


Fig.3 Grounded emitter output characteristics (II)

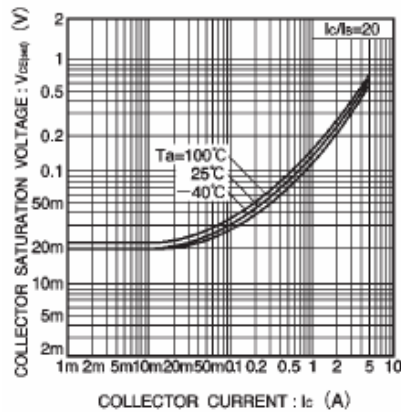


Fig.7 Collector-emitter saturation voltage vs. collector current (III)

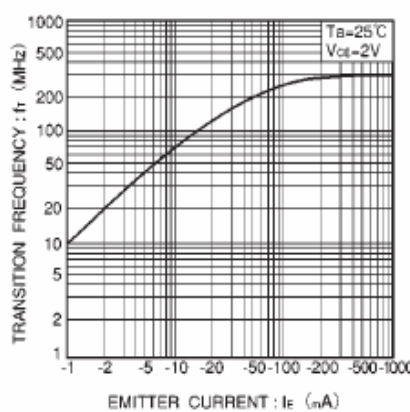


Fig.8 Gain bandwidth product vs. emitter current

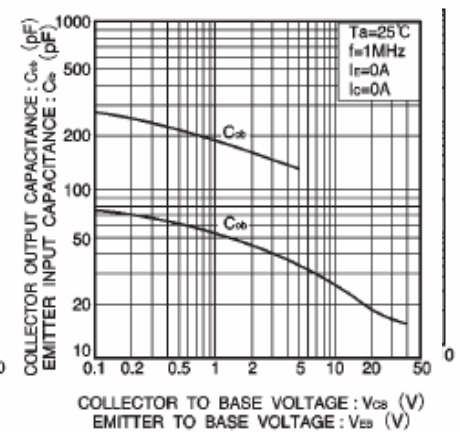


Fig.9 Collector output capacitance vs. collector-base voltage
Emitter input capacitance vs. emitter-base voltage



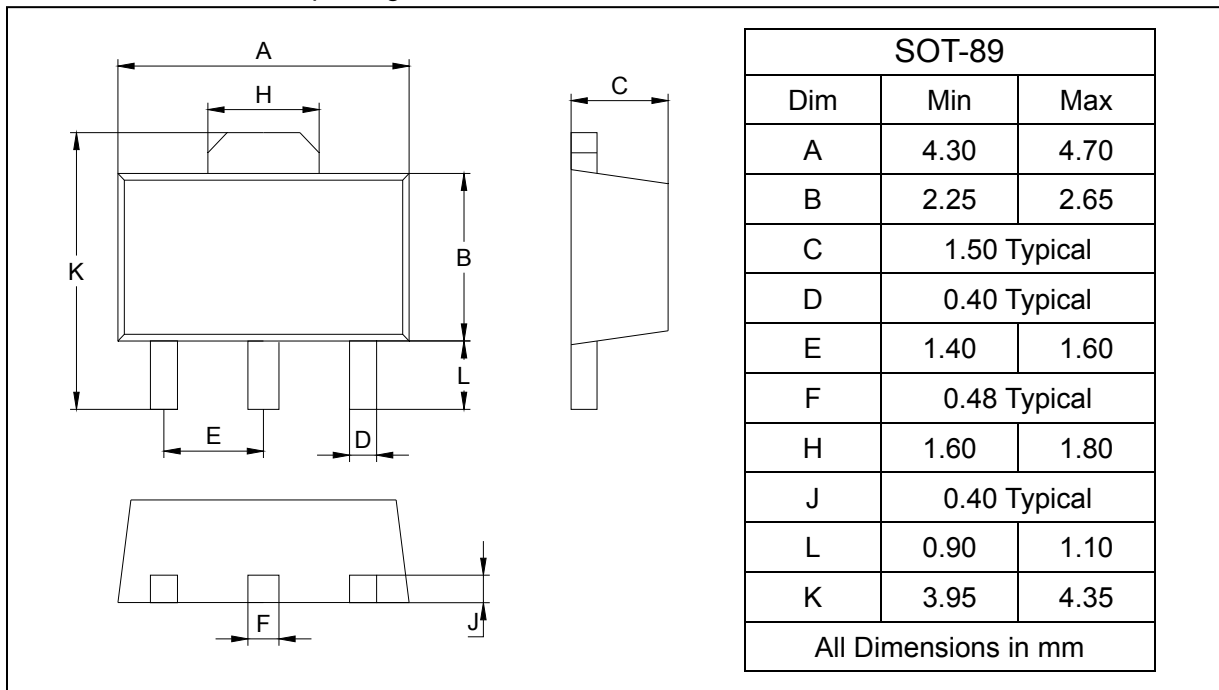
LOW FREQUENCY TRANSISTER (20V, 3A)

2SD2150

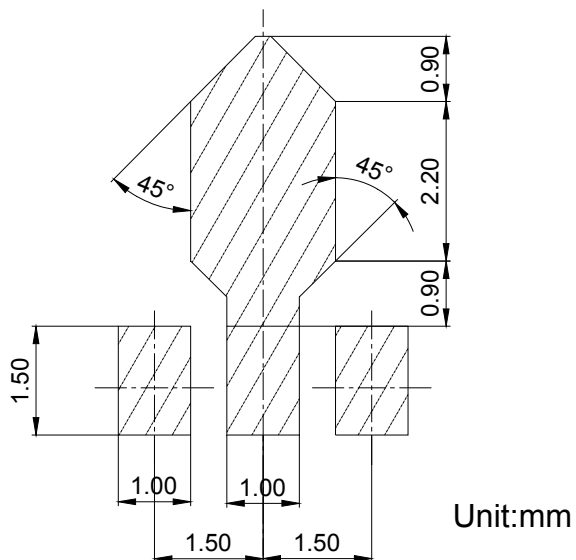
PACKAGE OUTLINE

Plastic surface mounted package

SOT-89



SOLDERING FOOTPRINT



PACKAGE INFORMATION

| Device | Package | Shipping |
|---------|---------|----------------|
| 2SD2150 | SOT-89 | 1000/Tape&Reel |