

2SC 3198
2SC 3198 Ⓛ

SILICON NPN TRANSISTOR
EPITAXIAL PLANAR TYPE (PCT PROCESS)

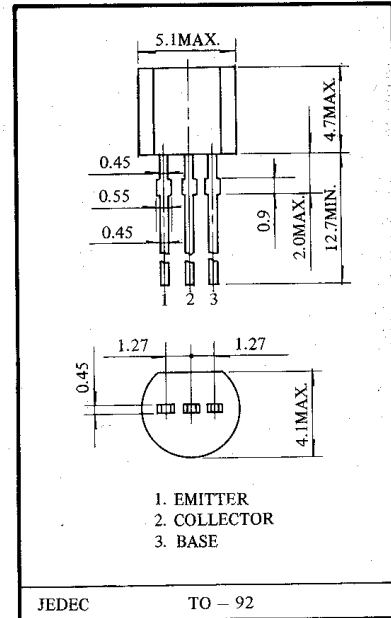
Unit in mm

APPLICATIONS

- Low Frequency Amplifiers
- Low Noise Amplifiers

FEATURES

- Excellent h_{FE} Linearity, $h_{FE}(0.1mA)/h_{FE}(2mA) = 0.95$ (Typ.)
- High h_{FE} (70~700).
- Excellent Safe Operation Area.
- Low Noise 2SC3198 NF=1dB (TYP), 10dB (Max).
 2SC3198Ⓛ NF=0.2dB (TYP), 3dB (Max).
- Complementary to the 2SA1266/2SA1266Ⓛ.



MAXIMUM RATINGS ($T_a = 25^\circ C$)

| CHARACTERISTIC | SYMBOL | RATING | UNIT | CHARACTERISTIC | SYMBOL | RATING | UNIT |
|-----------------------------|-----------|--------|------|-----------------------------|-----------|---------|------------|
| Collector - Base Voltage | V_{CBO} | 60 | V | Emitter Current | I_E | -150 | mA |
| Collector - Emitter Voltage | V_{CEO} | 50 | V | Collector Power Dissipation | P_C | 400 | mW |
| Emitter - Base Voltage | V_{EBO} | 5 | V | Junction Temperature | T_j | 125 | $^\circ C$ |
| Collector Current | I_C | 150 | mA | Storage Temperature Range | T_{stg} | -55~125 | $^\circ C$ |

ELECTRICAL CHARACTERISTICS ($T_a = 25^\circ C$)

| CHARACTERISTIC | SYMBOL | TEST CONDITION | MIN. | TYP. | MAX. | UNIT |
|--|---------------|---|------|------|------|----------|
| Collector Cut off Current | I_{CBO} | $V_{CB} = 60V, I_E = 0$ | - | - | 0.1 | μA |
| Emitter Cut off Current | I_{EBO} | $V_{EB} = 5V, I_C = 0$ | - | - | 0.1 | μA |
| DC Current Gain (1) | $h_{FE(1)}$ | $V_{CE} = 6V, I_C = 2mA$ | 70 | - | 700 | - |
| DC Current Gain (2) | $h_{FE(2)}$ | $V_{CE} = 6V, I_C = 150mA$ | 25 | - | - | - |
| Collector - Emitter Saturation Voltage | $V_{CE(sat)}$ | $I_C = 100mA, I_B = 10mA$ | - | 0.1 | 0.25 | V |
| Base - Emitter Saturation Voltage | $V_{BE(sat)}$ | $I_C = 100mA, I_B = 100mA$ | - | - | 0.1 | V |
| Transition Frequency | f_T | $V_{CE} = 10V, I_E = -1mA$ | 80 | - | - | MHz |
| Output Capacitance | C_{ob} | $V_{CB} = 10V, I_E = 0, f = 1MHz$ | - | 2.0 | 3.0 | pF |
| Base Spreading Resistance | $r_{bb'}$ | $V_{CB} = 10V, I_E = -1mA, f = 30MHz$ | - | 50 | - | Ω |
| Noise Figure | 2SC3198 | $V_{CE} = -6V, I_C = 0.1mA$ $R_g = 10k\Omega, f = 1 KHz$ | - | 1 | 10 | dB |
| | 2SC3198Ⓛ | | - | 0.2 | 3 | |

■ **NOTE: According to h_{FE} (1), Classified as follows**

| | | | | | | | |
|---|--------|---|---------|----|---------|----|---------|
| O | 70-140 | Y | 120~240 | GR | 200~400 | BL | 350~700 |
|---|--------|---|---------|----|---------|----|---------|