

# SILICON TRANSISTORS

## 2SC1505, 2SC1506, 2SC1507

### NPN SILICON TRIPLE DIFFUSED TRANSISTORS

### COLOR TV CHROMA AND SOUND OUTPUT AMPLIFIERS

#### DESCRIPTION

The 2SC1505, 2SC1506 and 2SC1507 are high voltage triple diffused silicon transistors. These transistors are designed for use in line-operated color TV chroma output circuits and sound output circuits.

Three types of different lead configuration are prepared for designer's convenience.

#### FEATURES

- Suitable for chroma output circuits and sound output circuits ( $P_o = 1.5W$ ) in line-operated color TV receivers.
- High voltage, high  $f_T$  and low  $C_{ob}$ .
- Three types of different lead configuration available.
  - 2SC1505 . . . . . Standard type
  - 2SC1506 . . . . . TO-66 replacement
  - 2SC1507 . . . . . Upright mounting

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

|                              |                         |             |            |
|------------------------------|-------------------------|-------------|------------|
| Collector to Base Voltage    | $V_{CBO}$               | 300         | V          |
| Collector to Emitter Voltage | $V_{CEO}$               | 300         | V          |
| Emitter to Base Voltage      | $V_{EB0}$               | 7.0         | V          |
| Collector Current            | $I_C$                   | 200         | mA         |
| Total Power Dissipation      | $P_T(T_c = 25^\circ C)$ | 15          | W          |
| Total Power Dissipation      | $P_T(T_a = 25^\circ C)$ | 1.2         | W          |
| Junction Temperature         | $T_j$                   | 150         | $^\circ C$ |
| Storage Temperature          | $T_{stg}$               | -55 to +150 | $^\circ C$ |

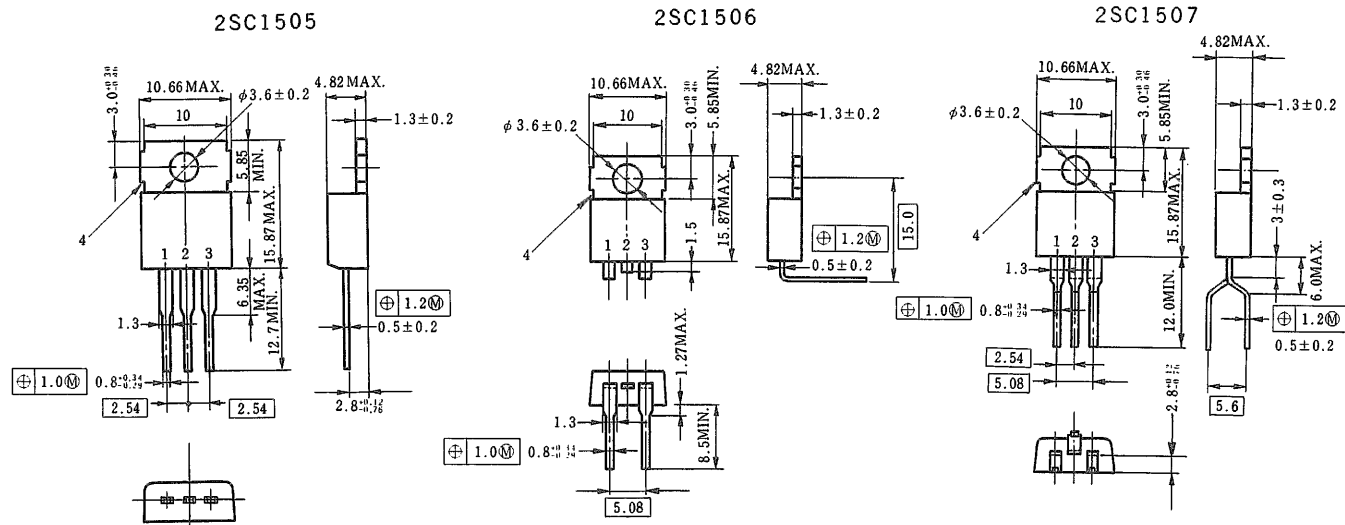
#### ELECTRICAL CHARACTERISTICS ( $T_a = 25^\circ C$ )

| CHARACTERISTIC                | SYMBOL        | MIN. | TYP. | MAX. | UNIT | TEST CONDITIONS                     |
|-------------------------------|---------------|------|------|------|------|-------------------------------------|
| Collector Cutoff Current      | $I_{CBO}$     |      |      | 100  | nA   | $V_{CB} = 200V, I_E = 0$            |
| Emitter Cutoff Current        | $I_{EB0}$     |      |      | 100  | nA   | $V_{EB} = 5.0V, I_C = 0$            |
| DC Current Gain               | $h_{FE}$      | 40   | 80   | 200  |      | $V_{CE} = 10V, I_C = 10mA$ *        |
| Collector Saturation Voltage  | $V_{CE(sat)}$ |      |      | 2.0  | V    | $I_C = 50mA, I_B = 5.0mA$ *         |
| Gain Bandwidth Product        | $f_T$         | 50   | 80   |      | MHz  | $V_{CE} = 30V, I_E = -10mA$         |
| Collector to Base Capacitance | $C_{ob}$      |      |      | 4.5  | pF   | $V_{CB} = 50V, I_E = 0, f = 1.0MHz$ |

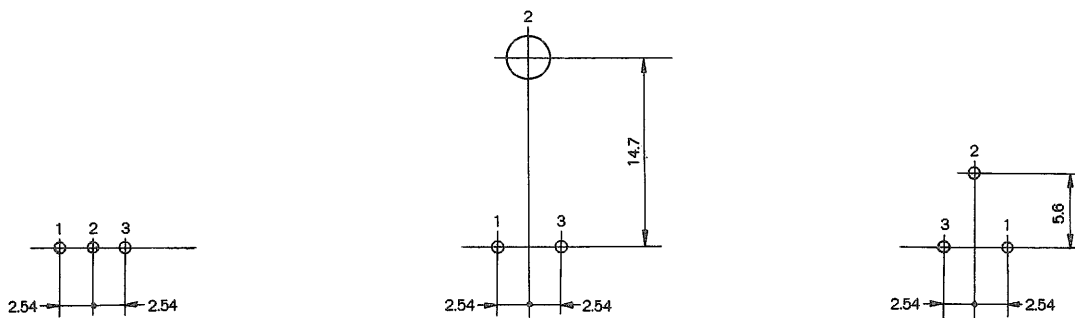
\* Pulse test  $PW \leq 350\mu s$ , duty cycle  $\leq 2.0\%$

$h_{FE}$  classification / M: 40-80 L: 60-120 K: 100-200

## PACKAGE DIMENSIONS (Unit:mm)



## MOUNTING HOLE LAYOUT DIMENSIONS



## LEAD CONNECTION

1. Base EIAJ :SC-46
2. Collector(Fin) JEDEC:TO-220AB
3. Emitter IEC :—
4. Fin

As the clearance between collector and Base, Emitter is narrow, care should be taken at high voltage use.

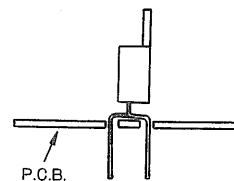
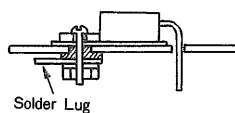
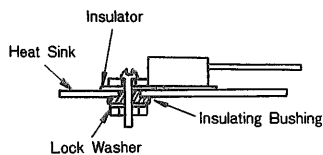
1. Base EIAJ :SC-45
2. — JEDEC:TO-220AA
3. Emitter IEC :—
4. Collector(Fin)

As the collector lead is cut, solder lug is used instead of it.

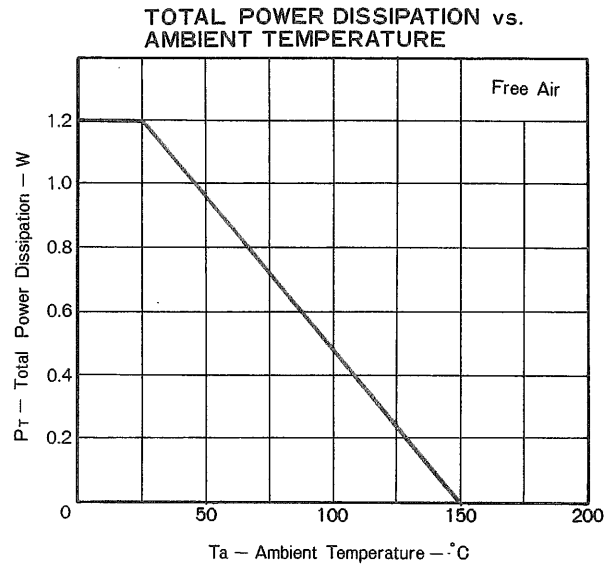
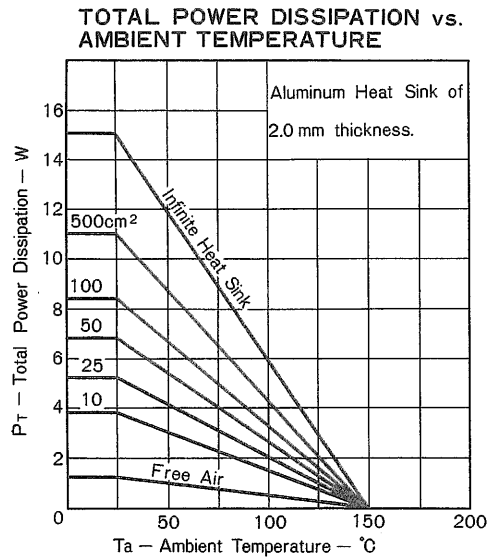
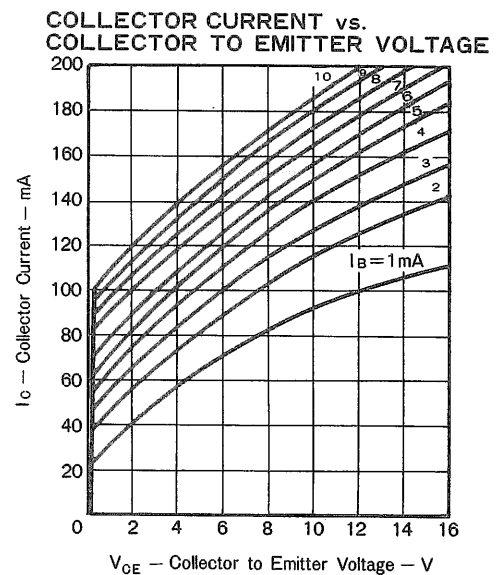
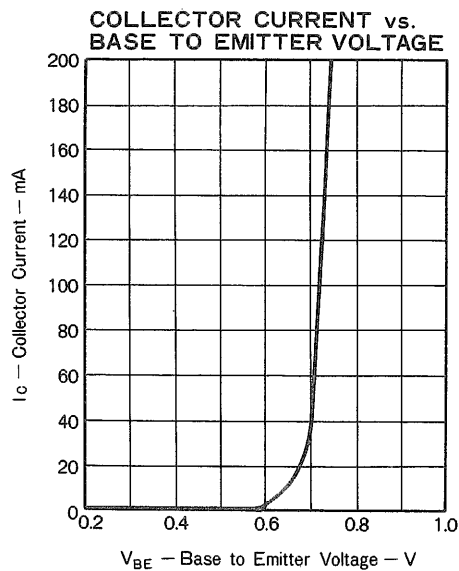
1. Base EIAJ :—
2. Collector(Fin) JEDEC:—
3. Emitter IEC :—
4. Fin

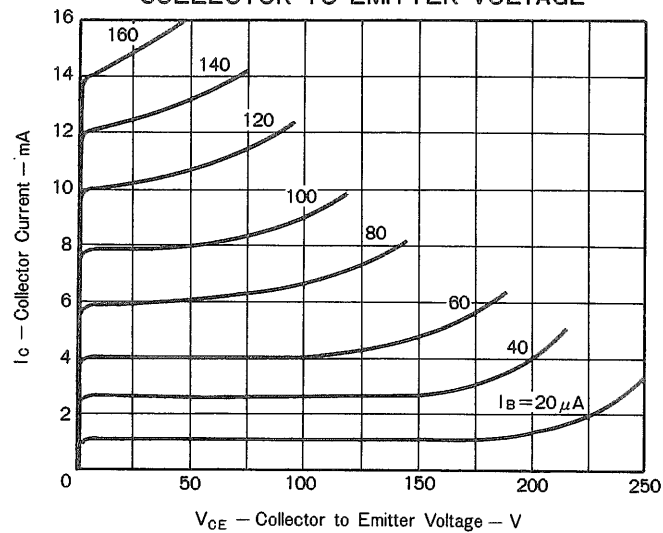
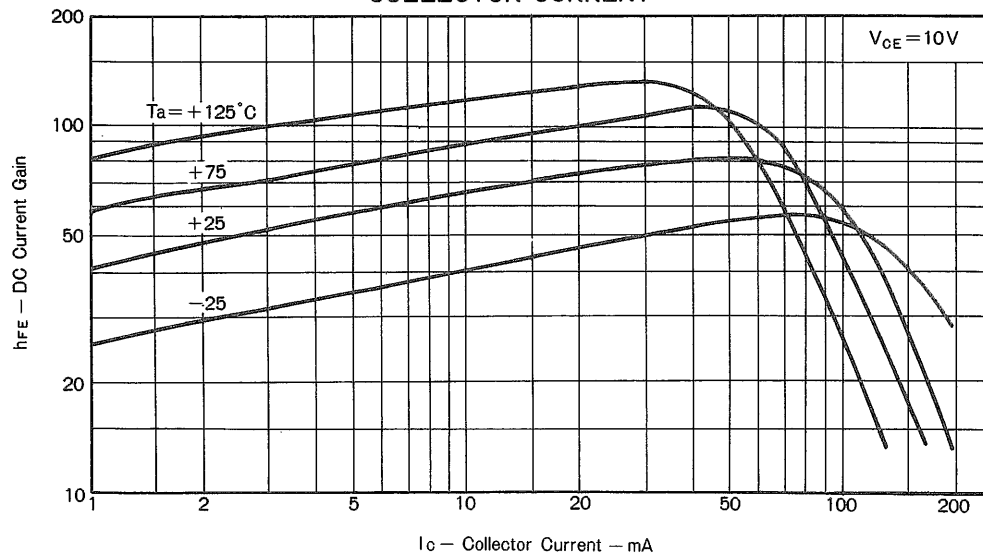
Convenient in case of free-air use.

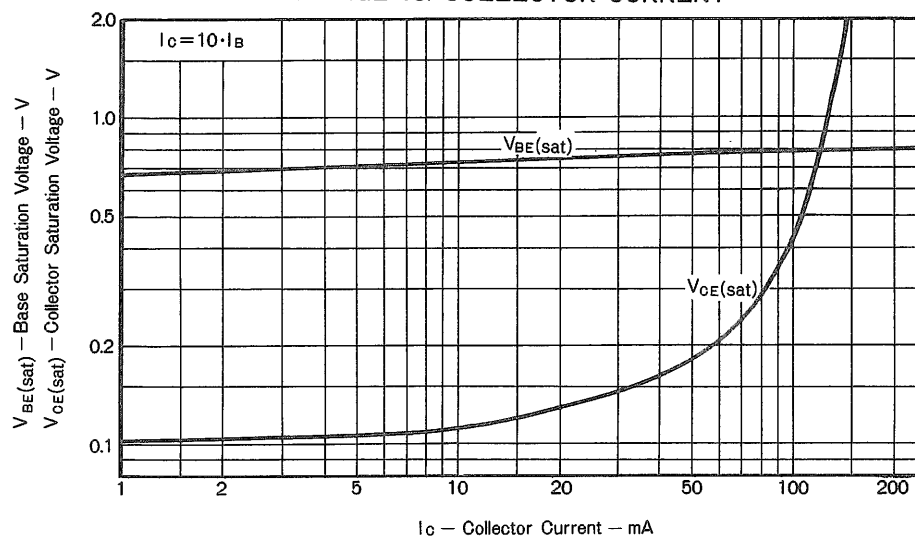
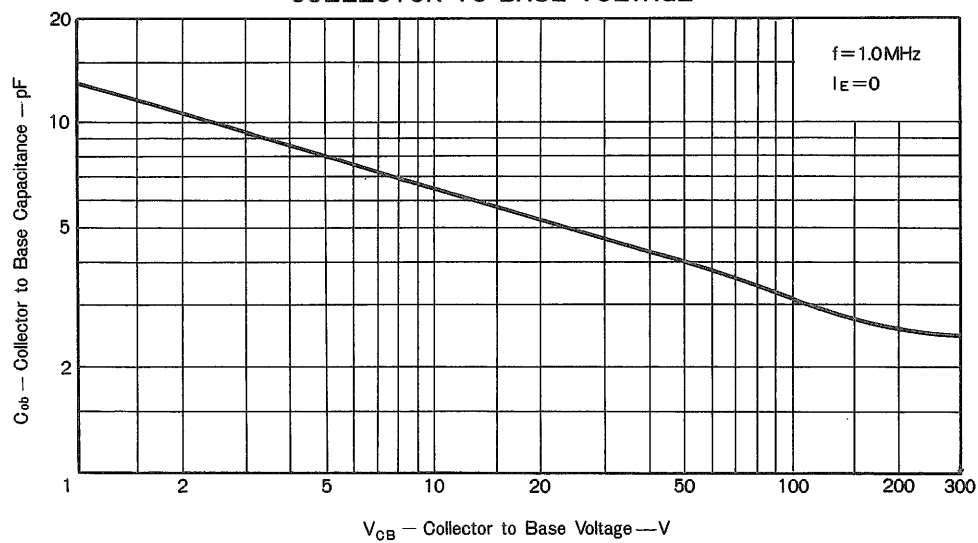
## SUGGESTED MOUNTING METHODS

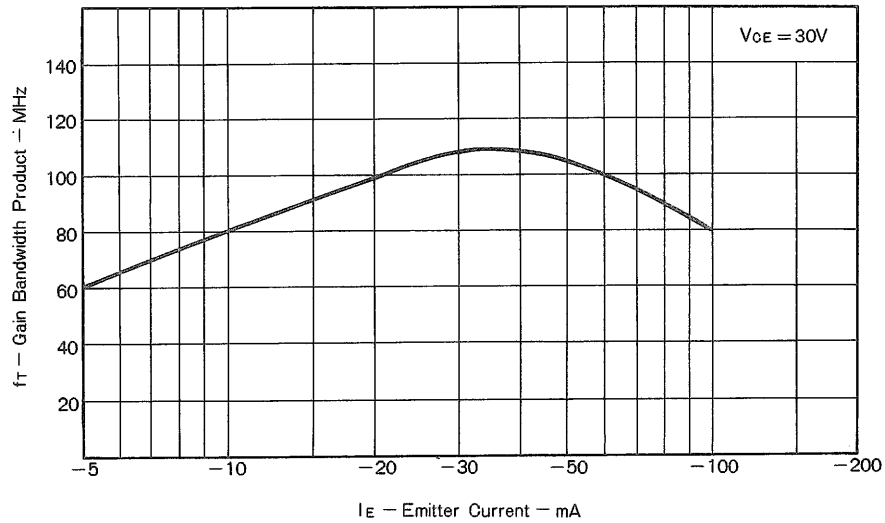


## POWER-TEMPERATURE DERATING CURVES

TYPICAL CHARACTERISTICS ( $T_a=25^{\circ}\text{C}$ )

COLLECTOR CURRENT vs.  
COLLECTOR TO EMITTER VOLTAGEDC CURRENT GAIN vs.  
COLLECTOR CURRENT

BASE AND COLLECTOR SATURATION  
VOLTAGE vs. COLLECTOR CURRENTOUTPUT CAPACITANCE vs.  
COLLECTOR TO BASE VOLTAGE

GAIN BANDWIDTH PRODUCT vs.  
EMITTER CURRENT**Nippon Electric Co., Ltd.**

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