

TOSHIBA TRANSISTOR SILICON NPN EPITAXIAL TYPE (PCT PROCESS)

2SC4678

HIGH CHROMA OUTPUT APPLICATIONS

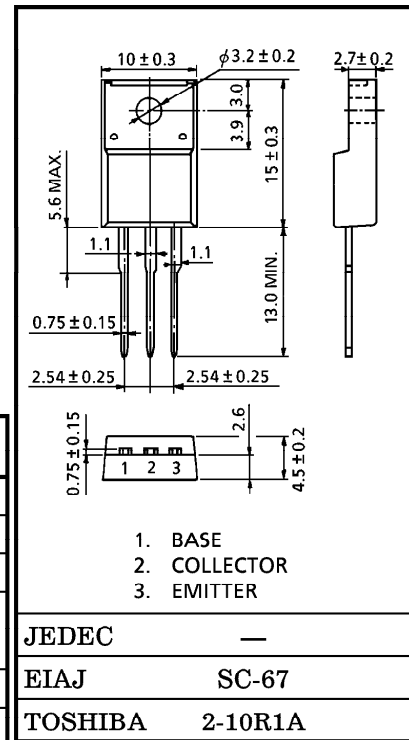
VIDEO OUTPUT STAGE IN HIGH RESOLUTION DISPLAY

- High Transition Frequency : $f_T = 240\text{MHz}$ (Typ.)
- Low Collector Output Capacitance : $C_{ob} = 2.4\text{pF}$ (Typ.)
($V_{CB} = 30\text{V}$)
- High Voltage : $V_{CEO} = 300\text{V}$
- Collector Metal (Fin) is Fully Covered with Mold Resin.

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

| CHARACTERISTIC | | SYMBOL | RATING | UNIT |
|-----------------------------|--------------------------|-----------|---------|------------------|
| Collector-Base Voltage | | V_{CBO} | 300 | V |
| Collector-Emitter Voltage | | V_{CEO} | 300 | V |
| Emitter-Base Voltage | | V_{EBO} | 5 | V |
| Collector Current | DC | I_C | 50 | mA |
| | Pulse | I_{CP} | 100 | |
| Base Current | | I_B | 50 | mA |
| Collector Power Dissipation | $T_c = 25^\circ\text{C}$ | P_C | 10 | W |
| | $T_a = 25^\circ\text{C}$ | | 2 | |
| Junction Temperature | | T_j | 150 | $^\circ\text{C}$ |
| Storage Temperature Range | | T_{stg} | -55~150 | $^\circ\text{C}$ |

Unit in mm



| | |
|---------|---------|
| JEDEC | — |
| EIAJ | SC-67 |
| TOSHIBA | 2-10R1A |

Weight : 1.7g

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

| CHARACTERISTIC | SYMBOL | TEST CONDITION | MIN. | TYP. | MAX. | UNIT |
|--------------------------------------|---------------|---|------|------|------|---------------|
| Collector Cut-off Current | I_{CBO} | $V_{CB} = 300\text{V}, I_E = 0$ | — | — | 100 | μA |
| Emitter Cut-off Current | I_{EBO} | $V_{EB} = 5\text{V}, I_C = 0$ | — | — | 10 | μA |
| DC Current Gain | $h_{FE}(1)$ | $V_{CE} = 10\text{V}, I_C = 10\text{mA}$ | 80 | — | 200 | |
| | $h_{FE}(2)$ | $V_{CE} = 10\text{V}, I_C = 20\text{mA}$ | 80 | — | — | |
| Collector-Emitter Saturation Voltage | $V_{CE(sat)}$ | $I_C = 20\text{mA}, I_B = 2\text{mA}$ | — | — | 0.5 | V |
| Base-Emitter Saturation Voltage | $V_{BE(sat)}$ | $I_C = 20\text{mA}, I_B = 2\text{mA}$ | — | — | 1.0 | V |
| Transition Frequency | f_T | $V_{CE} = 10\text{V}, I_C = 20\text{mA}$ | — | 240 | — | MHz |
| Collector Output Capacitance | C_{ob} | $V_{CB} = 30\text{V}, f = 1\text{MHz}, I_E = 0$ | — | 2.4 | 3.0 | pF |

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