

**DESCRIPTION** The 2SC2688 is designed for use in Color TV chroma output circuits.

## FEATURES

- High Electrostatic-Discharge-Resistance. (E-B reverse bias,  $C = 2300 \text{ pF}$ ) ESDR : TYP. 1 000 V
- Low  $C_{re}$ , High  $f_T$   
 $C_{re} \leq 3.0 \text{ pF}$  ( $V_{CB} = 30 \text{ V}$ )  
 $f_T \geq 50 \text{ MHz}$  ( $V_{CE} = 30 \text{ V}$ ,  $I_E = -10 \text{ mA}$ )

## ABSOLUTE MAXIMUM RATINGS

### Maximum Temperatures

Storage Temperature . . . . .  $-55$  to  $+150^\circ\text{C}$

Junction Temperature . . . . .  $150^\circ\text{C}$  Maximum

### Maximum Power Dissipation

Total Power Dissipation ( $T_a = 25^\circ\text{C}$ ) . . . . . 1.25 W

Total Power Dissipation ( $T_c = 25^\circ\text{C}$ ) . . . . . 10 W

### Maximum Voltages and Current ( $T_a = 25^\circ\text{C}$ )

$V_{CBO}$  Collector to Base Voltage . . . . . 300 V

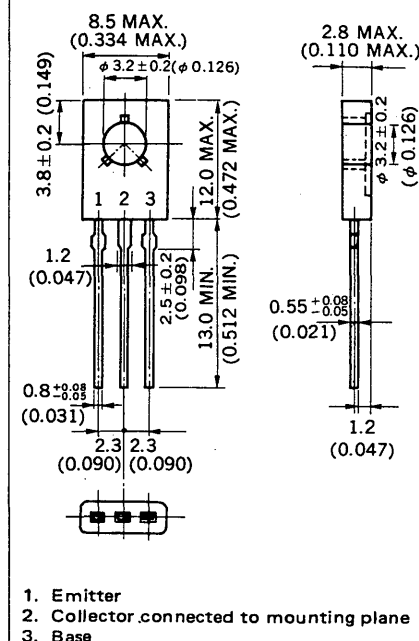
$V_{CEO}$  Collector to Emitter Voltage . . . . . 300 V

$V_{EBO}$  Emitter to Base Voltage . . . . . 5.0 V

$I_C$  Collector Current . . . . . 200 mA

## PACKAGE DIMENSIONS

in millimeters (inches)



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

| SYMBOL        | CHARACTERISTIC               | MIN. | TYP. | MAX. | UNIT | TEST CONDITIONS                                             |
|---------------|------------------------------|------|------|------|------|-------------------------------------------------------------|
| $h_{FE}$      | DC Current Gain              | 40   | 80   | 250  |      | $V_{CE} = 10 \text{ V}$ , $I_C = 10 \text{ mA}^*$           |
| $f_T$         | Gain Bandwidth Product       | 50   | 80   |      | MHz  | $V_{CE} = 30 \text{ V}$ , $I_E = -10 \text{ mA}$            |
| $C_{re}$      | Feedback Capacitance         |      |      | 3.0  | pF   | $V_{CB} = 30 \text{ V}$ , $I_E = 0$ , $f = 1.0 \text{ MHz}$ |
| $I_{CBO}$     | Collector Cutoff Current     |      |      | 100  | nA   | $V_{CB} = 200 \text{ V}$ , $I_E = 0$                        |
| $I_{EBO}$     | Emitter Cutoff Current       |      |      | 100  | nA   | $V_{EB} = 5.0 \text{ V}$ , $I_C = 0$                        |
| $V_{CE(sat)}$ | Collector Saturation Voltage |      |      | 1.5  | V    | $I_C = 50 \text{ mA}$ , $I_B = 5.0 \text{ mA}$              |

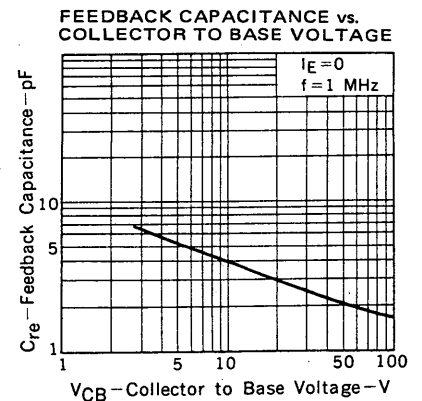
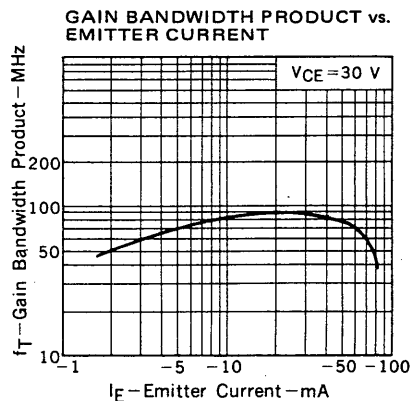
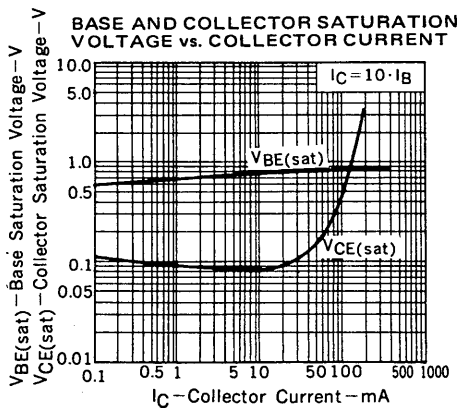
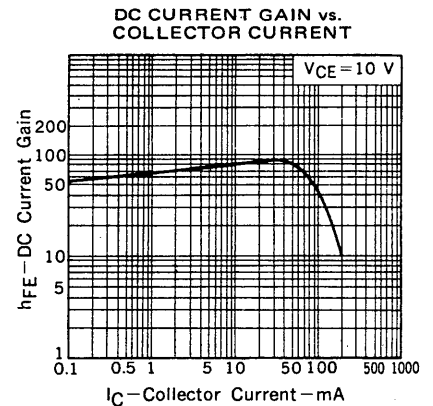
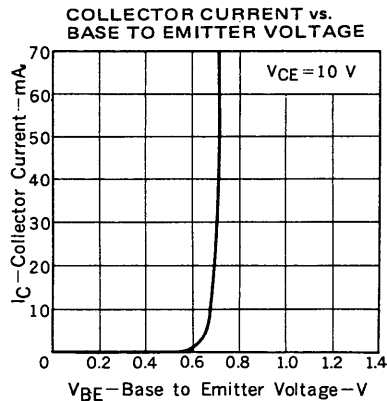
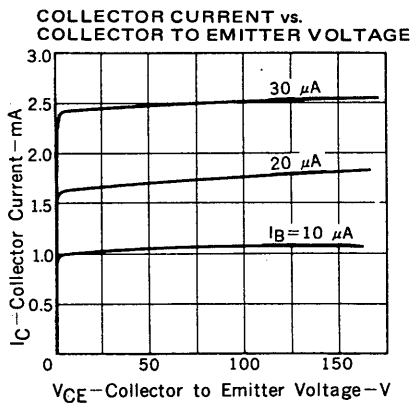
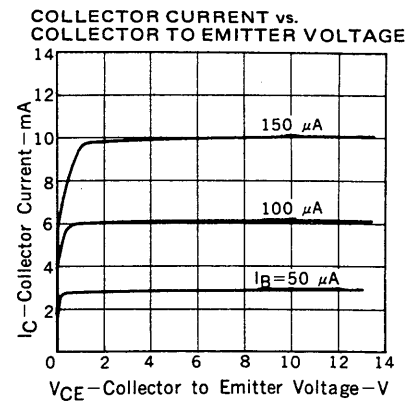
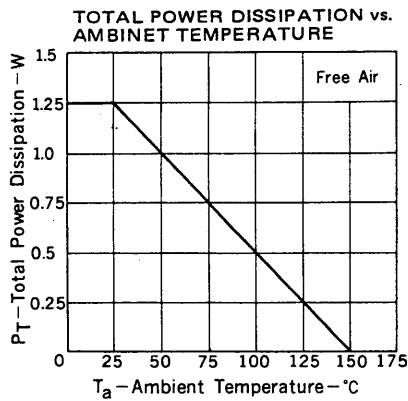
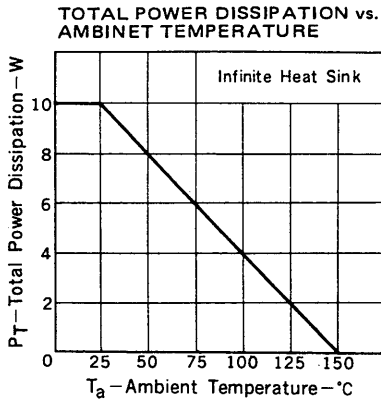
\*Pulsed  $PW \leq 350 \mu\text{s}$ , Duty Cycle  $\leq 2\%$

## Classification of $h_{FE}$

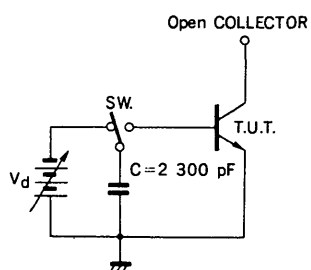
| Rank  | N        | M         | L          | K          |
|-------|----------|-----------|------------|------------|
| Range | 40 to 80 | 60 to 120 | 100 to 200 | 160 to 250 |

Test Conditions :  $V_{CE} = 10 \text{ V}$ ,  $I_C = 10 \text{ mA}$

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



## BURNOUT TEST CIRCUIT BY DISCHARGE OF CAPACITOR



## TEST CONDITION

- 1) E-B reverse bias
- 2)  $C = 2300 \text{ pF}$
- 3) Apply one shot pulse to T.U.T. (Transistor Under the Test) by SW.

## JUDGEMENT

REJECT;  $BV_{EBO}$  waveform defect

As a result if T.U.T. is not rejected, apply higher voltage to capacitor and test again.