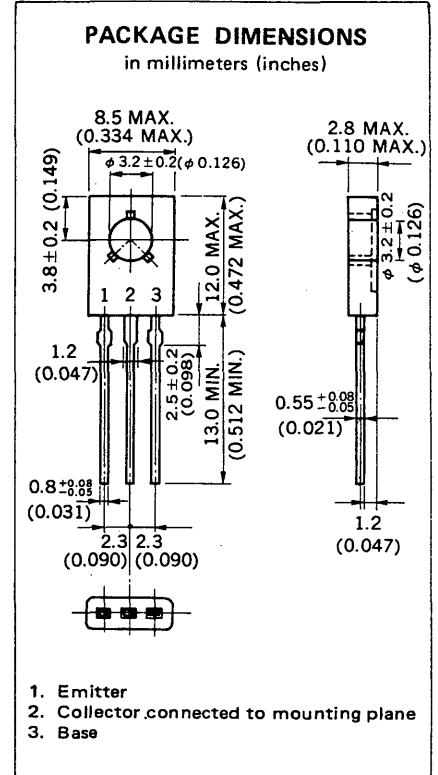


**DESCRIPTION** The 2SC2688 is designed for use in Color TV chroma output circuits.

- 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  $+150 \text{ }^\circ\text{C}$   
 Junction Temperature . . . . .  $150 \text{ }^\circ\text{C}$  Maximum
- Maximum Power Dissipations  
 Total Power Dissipation ( $T_a = 25 \text{ }^\circ\text{C}$ ) . . . . .  $1.25 \text{ W}$   
 Total Power Dissipation ( $T_c = 25 \text{ }^\circ\text{C}$ ) . . . . .  $10 \text{ W}$
- Maximum Voltages and Current ( $T_a = 25 \text{ }^\circ\text{C}$ )  
 $V_{CBO}$  Collector to Base Voltage . . . . .  $300 \text{ V}$   
 $V_{CEO}$  Collector to Emitter Voltage . . . . .  $300 \text{ V}$   
 $V_{EBO}$  Emitter to Base Voltage . . . . .  $5.0 \text{ V}$   
 $I_C$  Collector Current . . . . .  $200 \text{ mA}$



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

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  $\leq 2 \%$

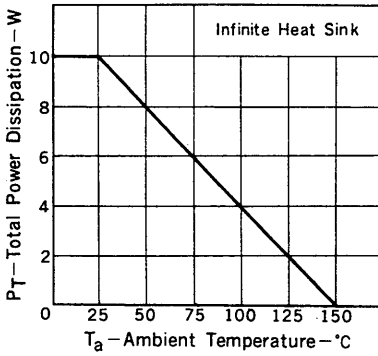
**Classification of  $h_{FE}$**

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

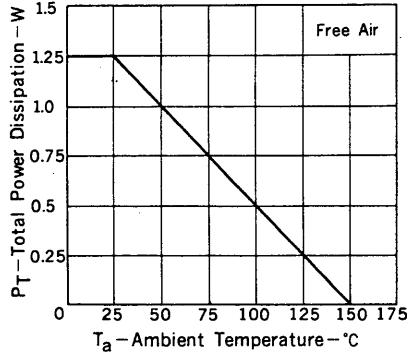
Test Conditions :  $V_{CE} = 10 \text{ V}$ ,  $I_C = 10 \text{ mA}$

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

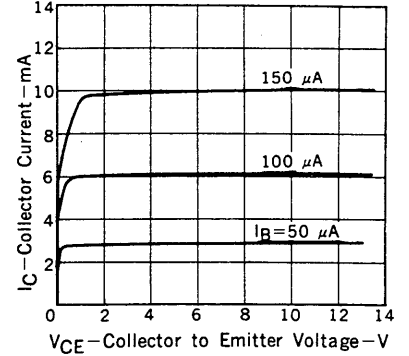
TOTAL POWER DISSIPATION vs. AMBIENT TEMPERATURE



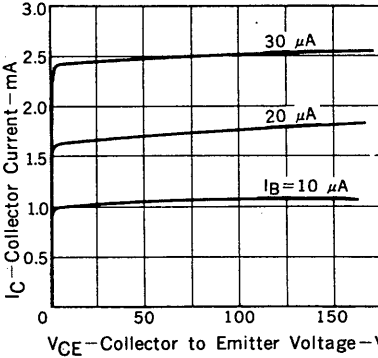
TOTAL POWER DISSIPATION vs. AMBIENT TEMPERATURE



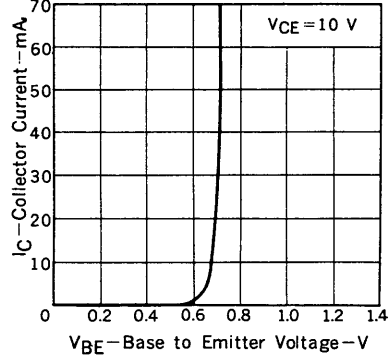
COLLECTOR CURRENT vs. COLLECTOR TO EMITTER VOLTAGE



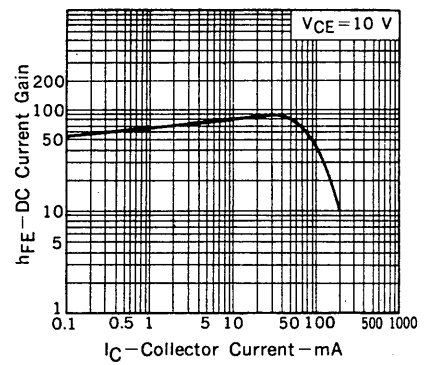
COLLECTOR CURRENT vs. COLLECTOR TO EMITTER VOLTAGE



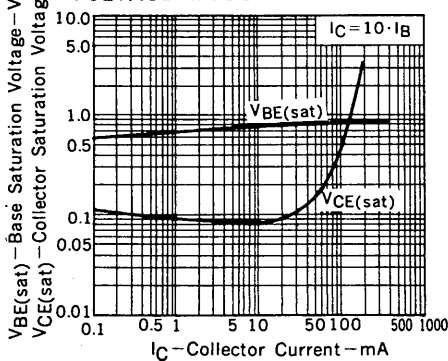
COLLECTOR CURRENT vs. BASE TO EMITTER VOLTAGE



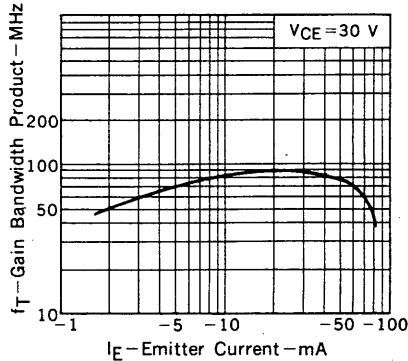
DC CURRENT GAIN vs. COLLECTOR CURRENT



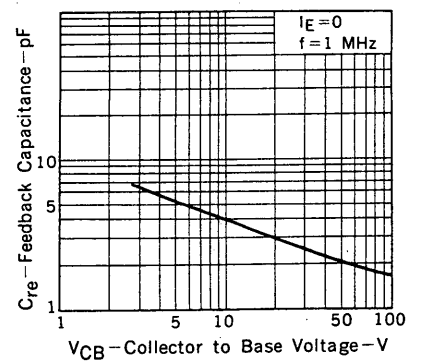
BASE AND COLLECTOR SATURATION VOLTAGE vs. COLLECTOR CURRENT



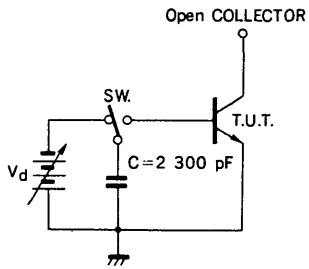
GAIN BANDWIDTH PRODUCT vs. EMITTER CURRENT



FEEDBACK CAPACITANCE vs. COLLECTOR TO BASE VOLTAGE



## BURNOUT TEST CIRCUIT BY DISCHARGE OF CAPACITOR



## TEST CONDITION

- 1) E-B reverse bias
- 2)  $C = 2\ 300\ \text{pF}$
- 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.