



2SC2688

NPN EPITAXIAL SILICON TRANSISTOR

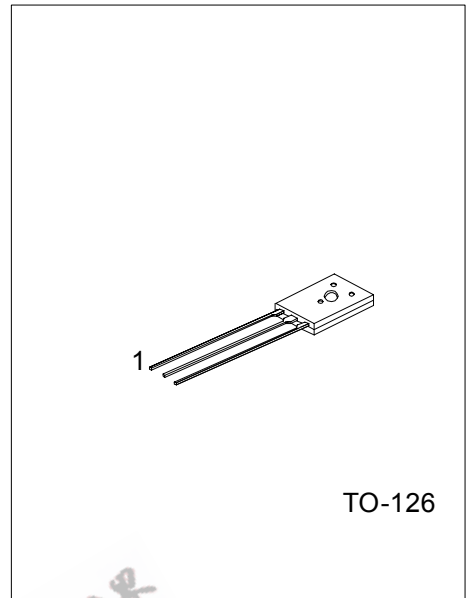
NPN SILICON TRANSISTOR

DESCRIPTION

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

FEATURES

- * High Electrostatic-Discharge-Resistance.
ESDR: 1000V TYP. (E-B reverse bias, C=2300pF)
- * Low C_{re} , High f_T
 $C_{re} \leq 3.0$ pF ($V_{CB}=30V$)
 $f_T \geq 50$ MHz ($V_{CE}=30V$, $I_E=-10mA$)



*Pb-free plating product number: 2SC2688L

ORDERING INFORMATION

| Order Number | | Package | Pin Assignment | | | Packing |
|-------------------|--------------------|---------|----------------|---|---|---------|
| Normal | Lead Free Plating | | 1 | 2 | 3 | |
| 2SC2688-x-T60-A-K | 2SC2688L-x-T60-A-K | TO-126 | E | C | B | Bulk |

| | |
|---|---|
| <p>2SC2688L-x-T60-A-K</p> <p>(1) Packing Type (2) Pin Assignment (3) Package Type (4) Rank (5) Lead Plating</p> | <p>(1) K: Bulk (2) refer to Pin Assignment (3) T60: TO-126 (4) x: refer to Classification of h_{FE} (5) L: Lead Free Plating, Blank: Pb/Sn</p> |
|---|---|

■ ABSOLUTE MAXIMUM RATING

| PARAMETER | SYMBOL | RATINGS | UNIT | |
|------------------------------|-----------|------------------------|------------------|---|
| Collector to Base Voltage | V_{CBO} | 300 | V | |
| Collector to Emitter Voltage | V_{CEO} | 300 | V | |
| Emitter to Base Voltage | V_{EBO} | 5.0 | V | |
| Collector Current | I_C | 200 | mA | |
| Total Power Dissipation | P_D | $T_a=25^\circ\text{C}$ | 1.25 | W |
| | | $T_C=25^\circ\text{C}$ | 10 | W |
| Junction Temperature | T_J | 150 | $^\circ\text{C}$ | |
| Storage Temperature | T_{STG} | -55 ~ +150 | $^\circ\text{C}$ | |

Note Absolute maximum ratings are those values beyond which the device could be permanently damaged.

Absolute maximum ratings are stress ratings only and functional device operation is not implied.

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

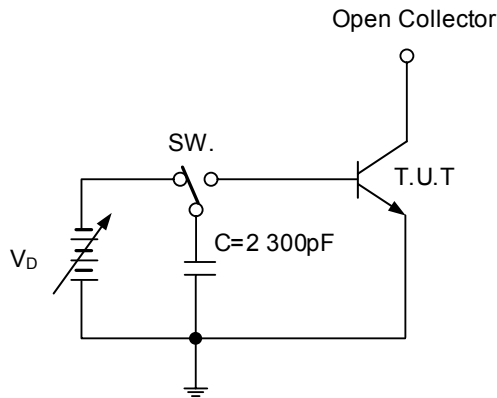
| PARAMETER | SYMBOL | TEST CONDITIONS | MIN | TYP | MAX | UNIT |
|------------------------------|---------------|---|-----|-----|-----|------|
| Collector Saturation Voltage | $V_{CE(SAT)}$ | $I_C=20\text{mA}, I_B=5.0\text{mA}$ | | | 1.5 | V |
| Collector Cutoff Current | I_{CBO} | $V_{CB}=200\text{V}, I_E=0$ | | | 100 | nA |
| Emitter Cutoff Current | I_{EBO} | $V_{EB}=5.0\text{V}, I_C=0$ | | | 100 | nA |
| DC Current Gain | h_{FE} | $V_{CE}=10\text{V}, I_C=10\text{mA}$ | 40 | 80 | 250 | |
| Gain Bandwidth Product | f_T | $V_{CE}=30\text{V}, I_E=-10\text{mA}$ | 50 | 80 | | MHz |
| Feedback Capacitance | C_{re} | $V_{CB}=30\text{V}, I_E=0, f=1.0\text{MHz}$ | | | 3 | pF |

Note 1. * Pulsed PW $\leq 350\mu\text{s}$, Duty Cycle $\leq 2\%$

■ CLASSIFICATION OF h_{FE}

| Rank | N | M | L | K |
|-------|---------|----------|-----------|----------|
| Range | 40 ~ 80 | 60 ~ 120 | 100 ~ 200 | 16 ~ 250 |

■ BURNOUT TEST CIRCUIT BY DISCHARGE OF CAPACITOR



TEST CONDITION

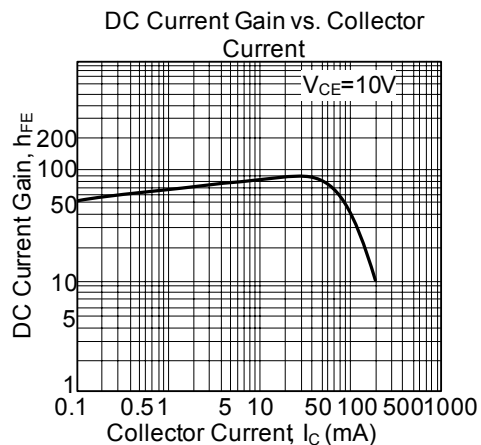
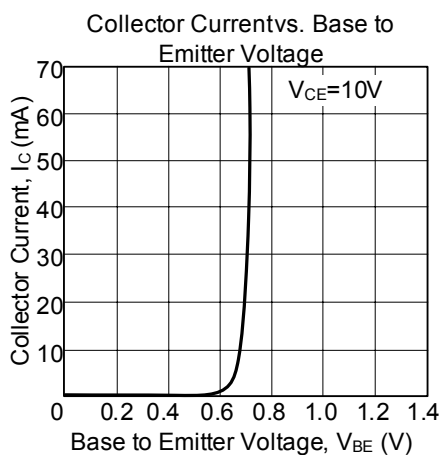
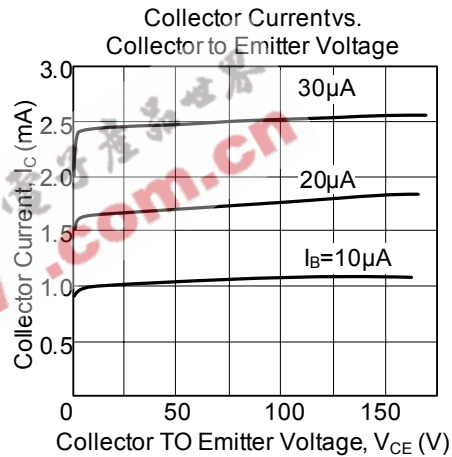
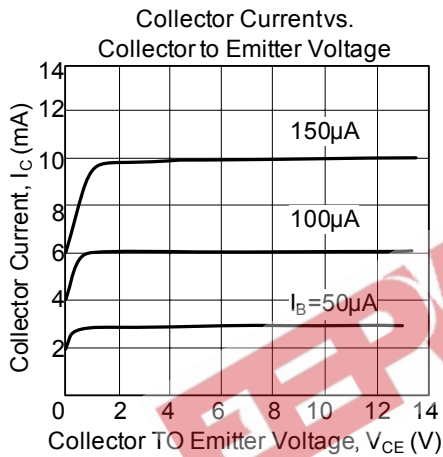
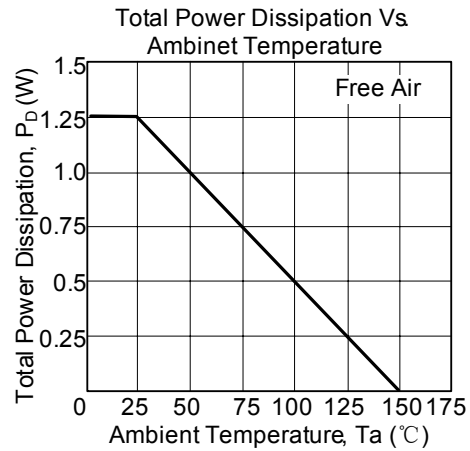
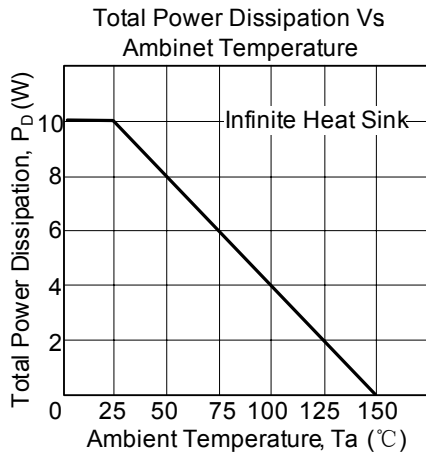
1. E-B reverse bias
2. $C=2300\text{pF}$
3. Apply on shot pulse to T.U.T. (Transistor Under the Test) by SW.

JUDGEMENT

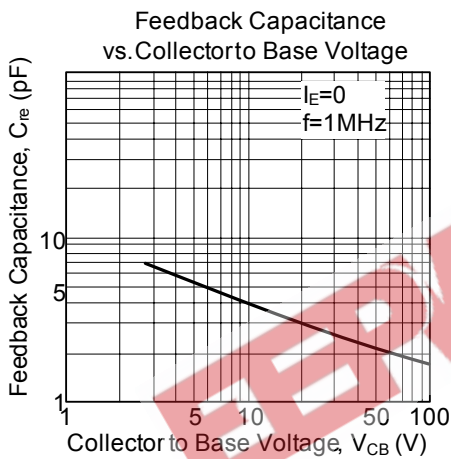
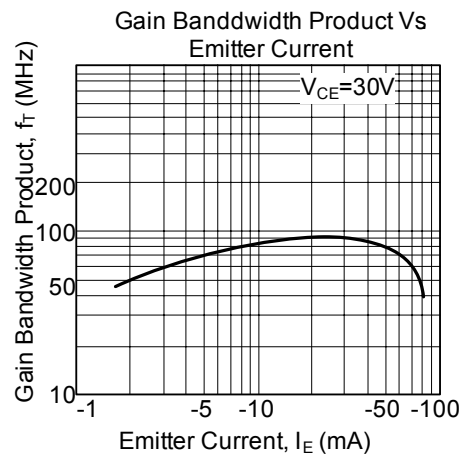
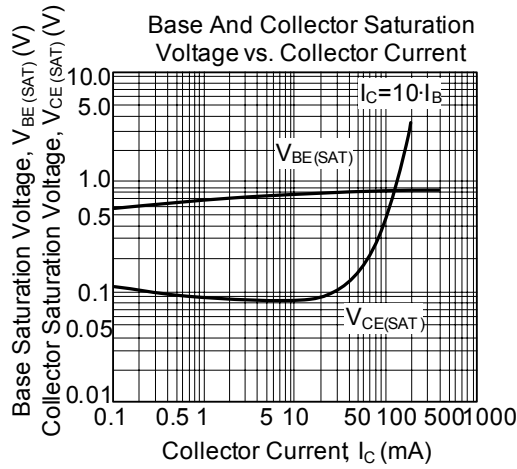
Reject, BV_{EBO} waveform defect
As a result if T.U.T. is not rejected,
apply higher voltage to capacitor and
test again.

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■ TYPICAL CHARACTERISTICS (Ta=25°C)



■ TYPICAL CHARACTERISTICS



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