



## 2SC2688

## NPN EPITAXIAL SILICON TRANSISTOR

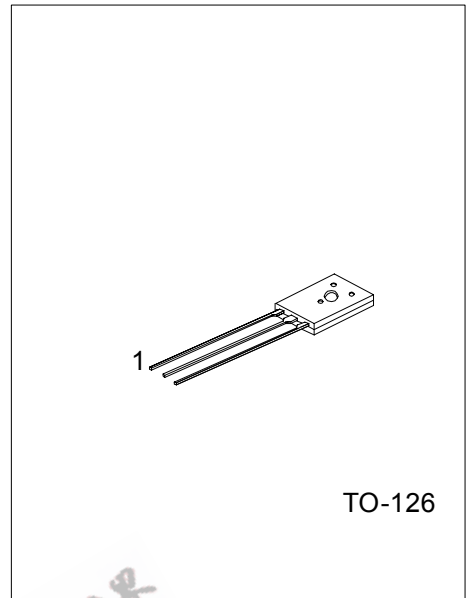
### NPN SILICON TRANSISTOR

#### 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 <math>h_{FE}</math> (5) L: Lead Free Plating, Blank: Pb/Sn</p>
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### ■ 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 ( $T_a=25^\circ\text{C}$ )

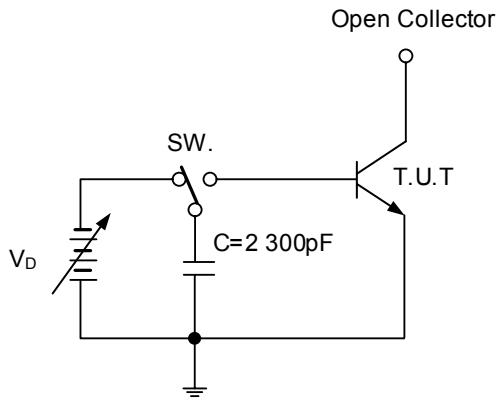
PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Collector Saturation Voltage	$V_{CE(SAT)}$	$I_C=20\text{mA}, I_B=5.0\text{mA}$			1.5	V
Collector Cutoff Current	$I_{CBO}$	$V_{CB}=200\text{V}, I_E=0$			100	nA
Emitter Cutoff Current	$I_{EBO}$	$V_{EB}=5.0\text{V}, I_C=0$			100	nA
DC Current Gain	$h_{FE}$	$V_{CE}=10\text{V}, I_C=10\text{mA}$	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

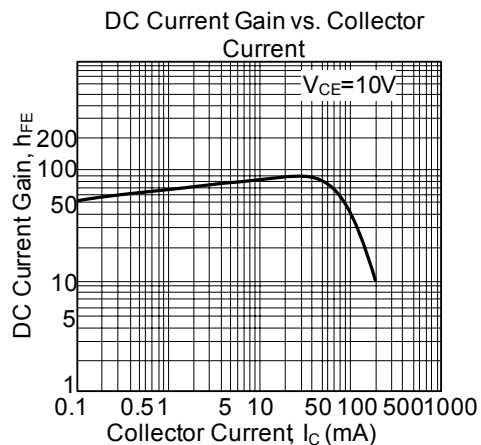
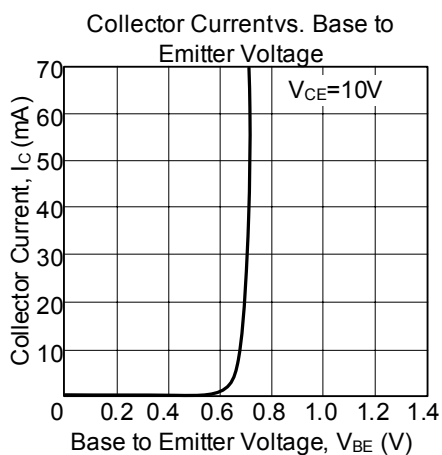
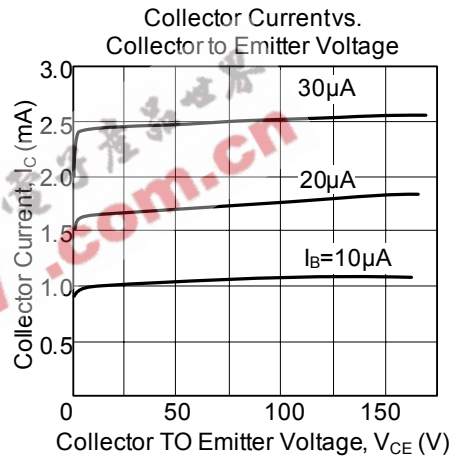
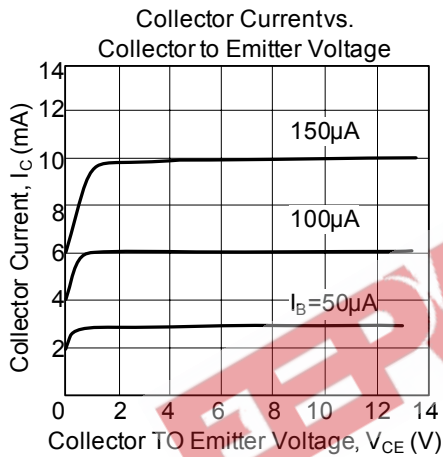
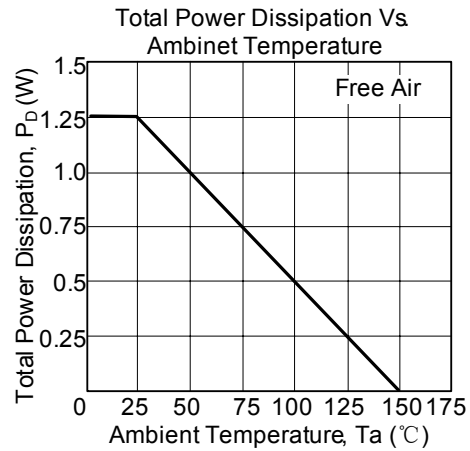
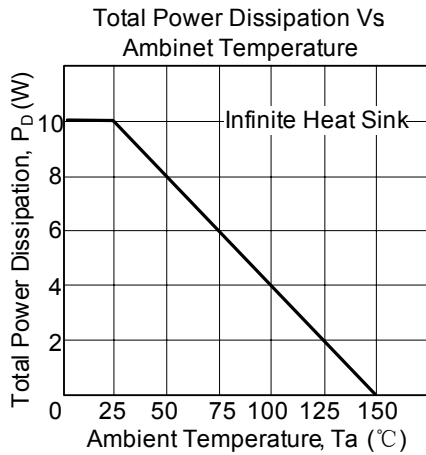
1. E-B reverse bias
2.  $C=2300\text{pF}$
3. Apply on shot pulse to T.U.T. (Transistor Under the Test) by SW.

### JUDGEMENT

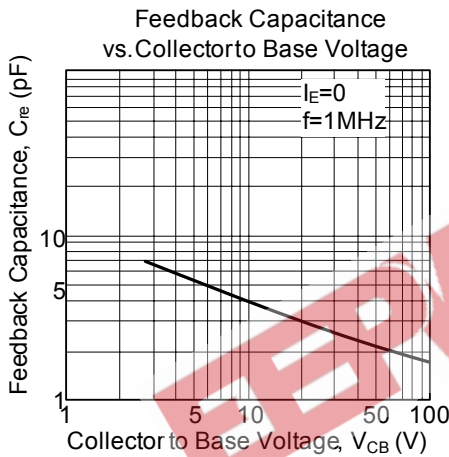
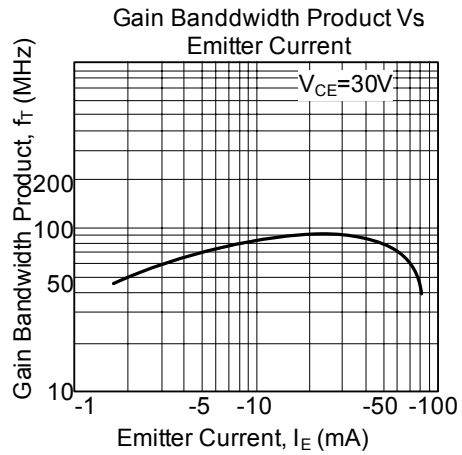
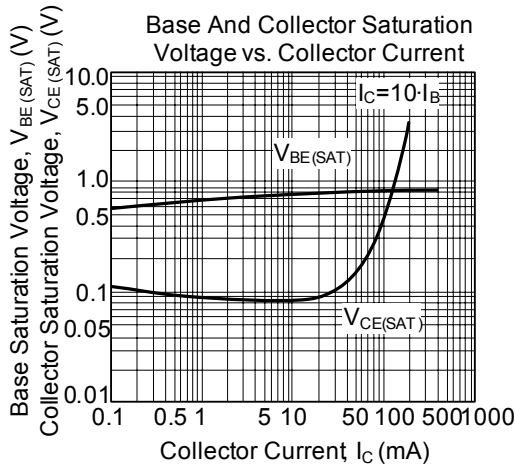
Reject,  $BV_{EBO}$  waveform defect  
As a result if T.U.T. is not rejected,  
apply higher voltage to capacitor and  
test again.

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## ■ TYPICAL CHARACTERISTICS (Ta=25°C)



■ TYPICAL CHARACTERISTICS



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