



# 2SA684

## PNP SILICON TRANSISTOR

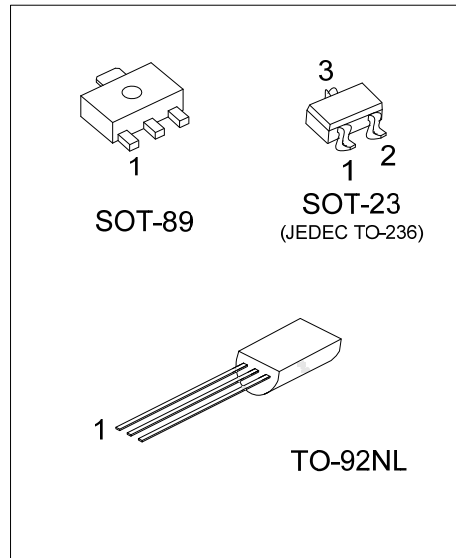
### PNP SILICON TRANSISTOR

■ DESCRIPTION

The **UTC 2SA684** is power amplifier and driver.

■ FEATURES

- \* Automatic insertion by radial taping possible
- \* Complementary pair with 2SC1384



■ ORDERING INFORMATION

Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
2SA684L-x-AB3-R	2SA684G-x-AB3-R	SOT-89	B	C	E	Tape Reel
2SA684L-x-AE3-R	2SA684G-x-AE3-R	SOT-23	B	E	C	Tape Reel
2SA684L-x-T9N-B	2SA684G-x-T9N-B	TO-92NL	E	C	B	Tape Box
2SA684L-x-T9N-K	2SA684G-x-T9N-K	TO-92NL	E	C	B	Bulk

Note: Pin Assignment: B: Base C: Collector E: Emitter

<p>2SA684G-x-AB3-R</p> <p>(1)Packing Type (2)Package Type (3)Rank (4)Green Package</p>	<p>(1) R: Tape Reel, B: Tape Box, K: Bulk, (2) AB3: SOT-89, T9N: TO-92NL (3) x: refer to Classification of <math>h_{FE}</math> (4) G: Halogen Free and Lead Free, L: Lead Free</p>
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■ MARKING

SOT-23	SOT-89	TO-92NL
<p>L: Lead Free G: Halogen Free</p>	<p>Date Code L: Lead Free G: Halogen Free</p>	<p>UTC 2SA684 Date Code</p> <p>L: Lead Free G: Halogen Free</p>



■ ABSOLUTE MAXIMUM RATINGS ( $T_A=25^\circ\text{C}$ , unless otherwise noted)

PARAMETER		SYMBOL	RATINGS	UNIT
Collector-Base Voltage		$V_{CBO}$	-60	V
Collector-Emitter Voltage		$V_{CEO}$	-50	V
Emitter-Base Voltage		$V_{EBO}$	-5	V
Peak Collector Current		$I_{CP}$	-1.5	A
Collector Current (DC)		$I_C$	-1	A
Collector Dissipation	SOT-89	$P_C$	500	mW
	SOT-23		350	mW
	TO-92NL		1000	mW
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.

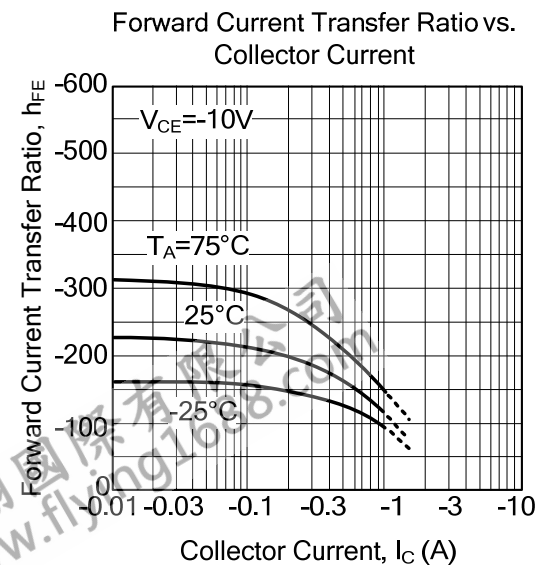
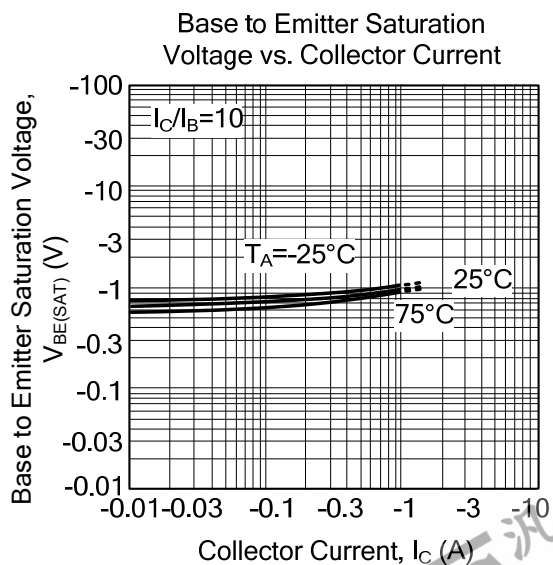
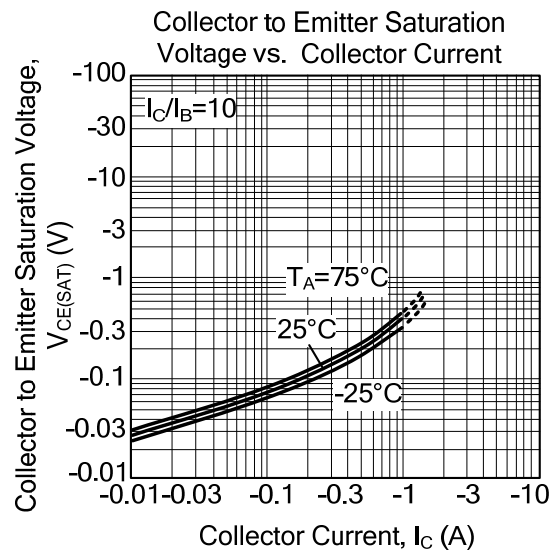
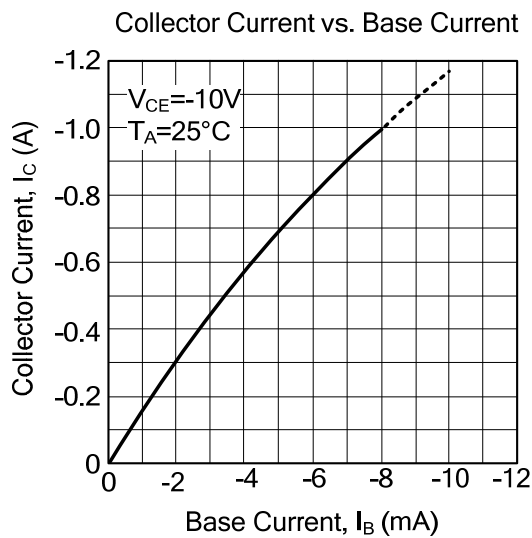
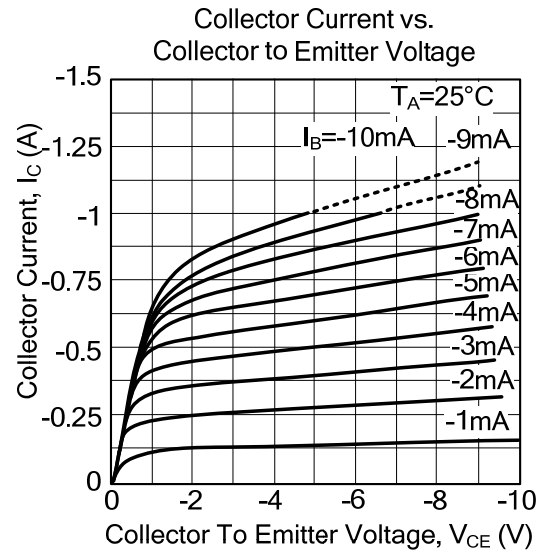
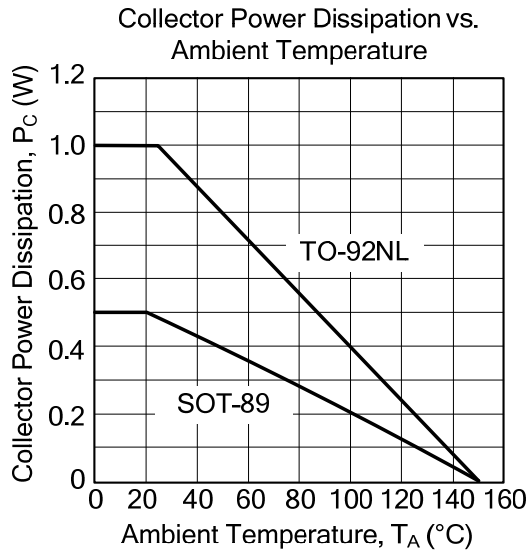
■ ELECTRICAL CHARACTERISTICS ( $T_A=25^\circ\text{C}$ , unless otherwise noted)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Collector-Base Breakdown Voltage	$BV_{CBO}$	$I_C=-10\mu\text{A}$ , $I_E=0$	-60			V
Collector-Emitter Breakdown Voltage	$BV_{CEO}$	$I_C=-2\text{mA}$ , $I_B=0$	-50			V
Emitter-Base Breakdown Voltage	$BV_{EBO}$	$I_E=-10\mu\text{A}$ , $I_C=0$	-5			V
Collector Cut-Off Current	$I_{CBO}$	$V_{CB}=-20\text{V}$ , $I_E=0$			-0.1	$\mu\text{A}$
DC Current Gain	$h_{FE1}$	$V_{CE}=-10\text{V}$ , $I_C=-500\text{mA}$	85		340	
	$h_{FE2}$	$V_{CE}=-5\text{V}$ , $I_C=-1\text{A}$	50			
Collector-Emitter Saturation Voltage	$V_{CE(SAT)}$	$I_C=-0.5\text{A}$ , $I_B=-50\text{mA}$		-0.2	-0.4	V
Base-Emitter Saturation Voltage	$V_{BE(SAT)}$	$I_C=-0.5\text{A}$ , $I_B=-50\text{mA}$		-0.85	-1.2	V
Current Gain Bandwidth Product	$f_T$	$V_{CE}=-10\text{V}$ , $I_B=50\text{mA}$ , $f=200\text{MHz}$		200		MHz
Output Capacitance	$C_{ob}$	$V_{CB}=-10\text{V}$ , $I_E=0$ , $f=1\text{MHz}$		20	30	pF

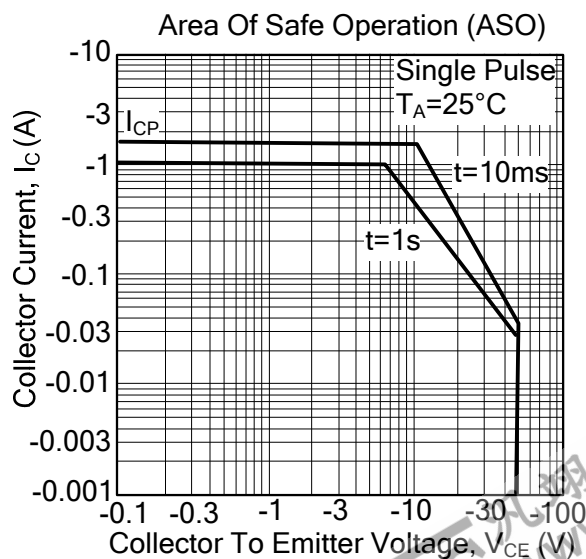
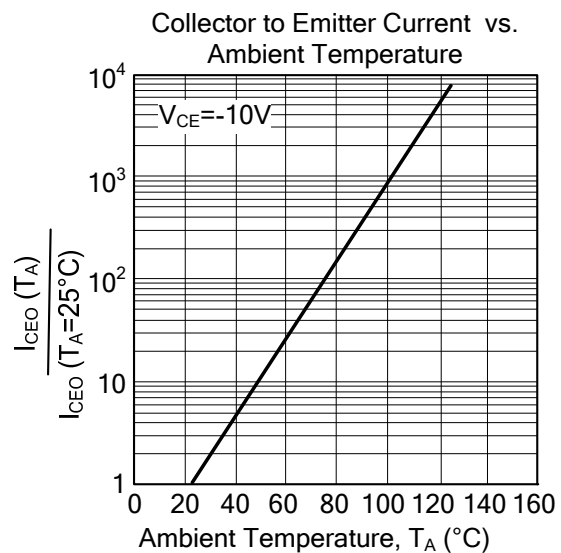
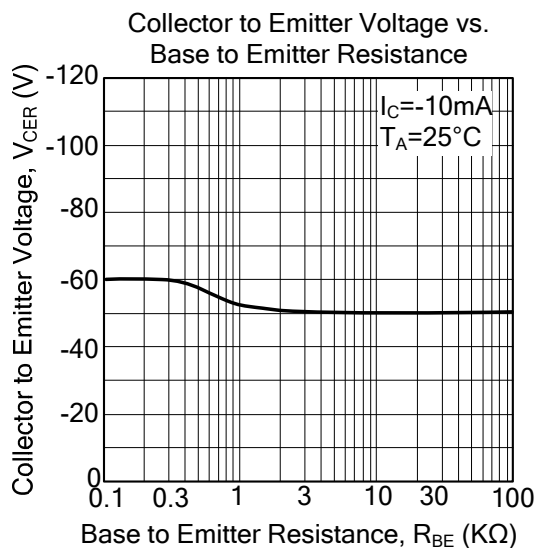
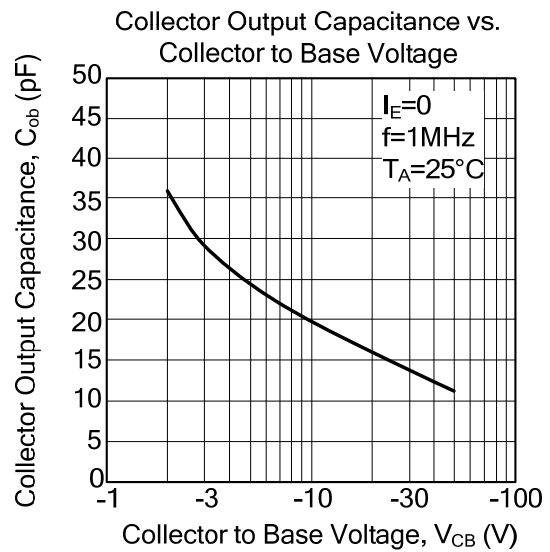
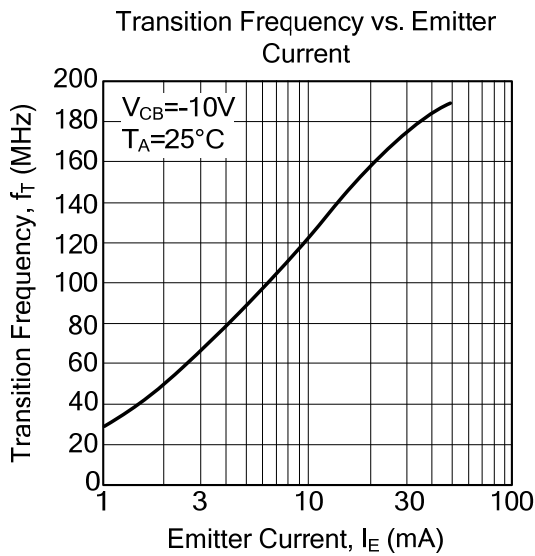
■ CLASSIFICATION OF  $h_{FE}$

RANK	Q	R	S
RANGE	85-170	120-240	170-340

## TYPICAL CHARACTERISTICS



■ TYPICAL CHARACTERISTICS(Cont.)



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