



## 2SA1013

## PNP EPITAXIAL SILICON TRANSISTOR

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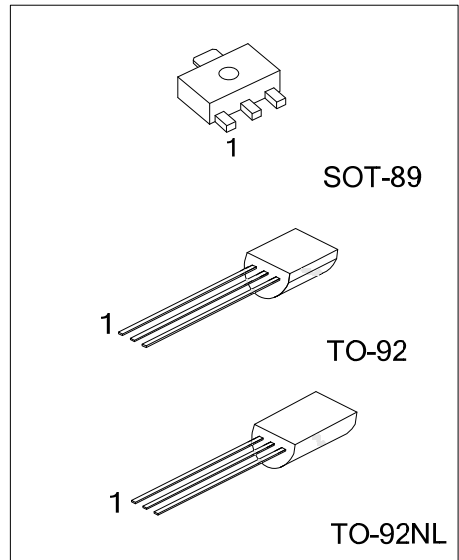
#### DESCRIPTION

The UTC **2SA1013** is a PNP epitaxial silicon transistor, it uses UTC's advanced technology to provide the customers with high  $BV_{CEO}$  and high DC current gain, etc.

The UTC **2SA1013** is suitable for power switching and color TV vertical deflection output, etc.

#### FEATURES

- \* High  $BV_{CEO}$
- \* High DC current gain
- \* Large continuous collector current capability



#### ORDERING INFORMATION

Ordering Number		Package	Pin assignment			Packing
Lead Free	Halogen Free		1	2	3	
2SA1013L-x-AB3-R	2SA1013G-x-AB3-R	SOT-89	B	C	E	Tape Reel
2SA1013L-x-T92-B	2SA1013G-x-T92-B	TO-92	B	C	E	Tape Box
2SA1013L-x-T92-K	2SA1013G-x-T92-K	TO-92	B	C	E	Bulk
2SA1013L-x-T9N-B	2SA1013G-x-T9N-B	TO-92NL	B	C	E	Tape Box
2SA1013L-x-T9N-K	2SA1013G-x-T9N-K	TO-92NL	B	C	E	Bulk

<p>2SA1013L-x-AB3-R</p>	<p>(1) Packing Type (2) Package Type (3) Rank (4) Lead Free</p>	<p>(1) R: Tape Reel, B: Tape Box (2) AB3: SOT-89, T92: TO-92, T9N: TO-92NL (3) refer to Classification of <math>h_{FE}</math> (4) L: Lead Free, G: Halogen Free</p>
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### ■ ABSOLUTE MAXIMUM RATINGS (T<sub>A</sub>=25°C)

PARAMETER		SYMBOL	RATINGS	UNIT
Collector-Base Voltage		V <sub>CBO</sub>	-160	V
Collector-Emitter Voltage		V <sub>CEO</sub>	-160	V
Emitter-Base Voltage		V <sub>EBO</sub>	-6	V
Collector Current		I <sub>C</sub>	-1	A
Base Current		I <sub>B</sub>	-0.5	A
Collector Power Dissipation	SOT-89	P <sub>C</sub>	500	W
	TO-92/TO-92NL		900	W
Junction Temperature		T <sub>J</sub>	150	°C
Storage Temperature		T <sub>STG</sub>	-55 ~ 150	°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.

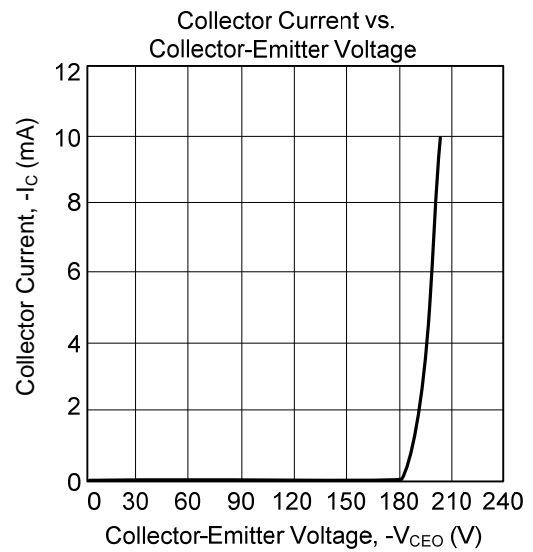
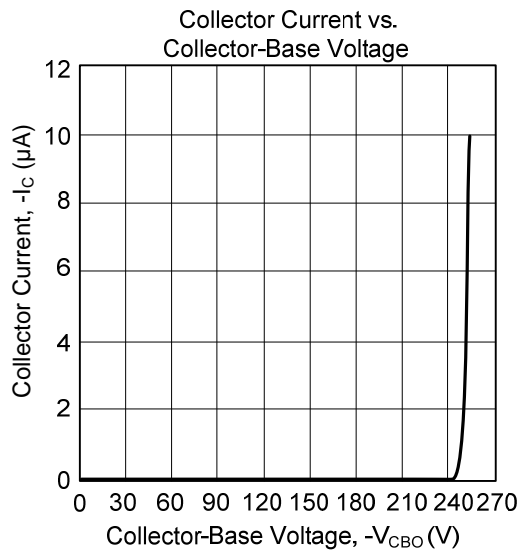
### ■ ELECTRICAL CHARACTERISTICS (T<sub>A</sub>=25°C)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Collector Cut-Off Current	I <sub>CBO</sub>	V <sub>CB</sub> =-150V, I <sub>E</sub> =0			-1.0	μA
Emitter Cut-Off Current	I <sub>EBO</sub>	V <sub>EB</sub> =-6V, I <sub>C</sub> =0			-1.0	μA
Collector-Emitter Breakdown Voltage	V <sub>(BR)CEO</sub>	I <sub>C</sub> =-10mA, I <sub>B</sub> =0	-160			V
DC Current Gain	h <sub>FE</sub>	V <sub>CE</sub> =-5V, I <sub>C</sub> =-200mA	60		320	
Collector-Emitter Saturation Voltage	V <sub>CE(sat)</sub>	I <sub>C</sub> =-500mA, I <sub>B</sub> =-50mA			-1.5	V
Base-Emitter Voltage	V <sub>BE</sub>	V <sub>CE</sub> =-5V, I <sub>C</sub> =-5mA	-0.45		-0.75	V
Transition Frequency	f <sub>T</sub>	V <sub>CE</sub> =-5V, I <sub>C</sub> =-200mA	15	50		MHz
Collector Output Capacitance	C <sub>ob</sub>	V <sub>CB</sub> =-10V, f=1MHz, I <sub>E</sub> =0			35	pF

### ■ CLASSIFICATION OF h<sub>FE</sub>

RANK	R	O	P
RANGE	60~120	100~200	160~320

### ■ TYPICAL CHARACTERISTICS



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