



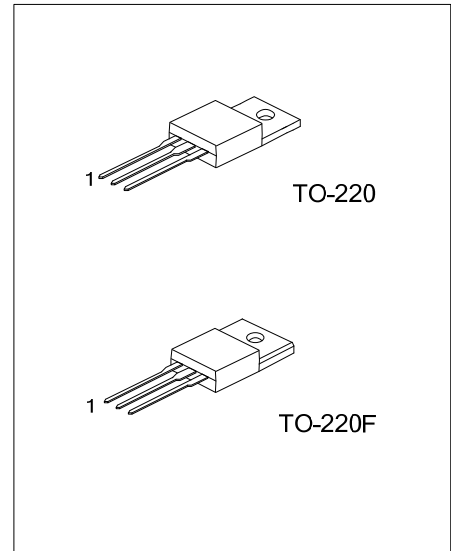
## 2SD313

## NPN SILICON TRANSISTOR

### NPN EPITAXIAL PLANAR TRANSISTOR

#### DESCRIPTION

The UTC 2SD313 is designed for use in general purpose amplifier and switching applications.



#### ORDERING INFORMATION

Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
2SD313L-x-TA3-T	2SD313G-x-TA3-T	TO-220	B	C	E	Tube
2SD313L-x-TF3-T	2SD313G-x-TF3-T	TO-220F	B	C	E	Tube

<p>2SD313L-x-TA3-T</p>	<p>(1) T: Tube  (2) TA3: TO-220, TF3: TO-220F  (3) x: refer to Classification of <math>h_{FE}</math>  (4) G: Halogen Free, L: Lead Free</p>
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■ ABSOLUTE MAXIMUM RATINGS

PARAMETER	SYMBOL	RATINGS	UNIT
Collector-Base Voltage	$V_{CBO}$	60	V
Collector-Emitter Voltage	$V_{CEO}$	60	V
Emitter-Base Voltage	$V_{EBO}$	5	V
Collector Current	$I_C$	3	A
Junction Temperature	$T_J$	+150	°C
Storage Temperature	$T_{STG}$	-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.

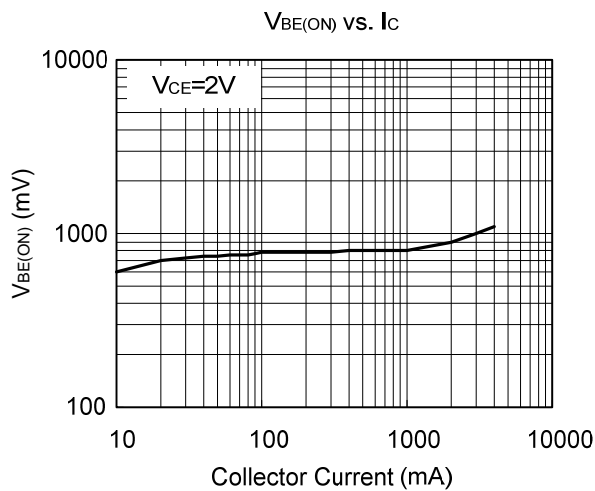
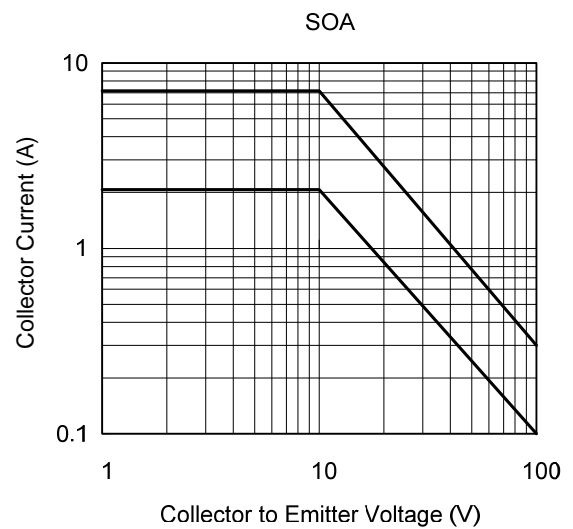
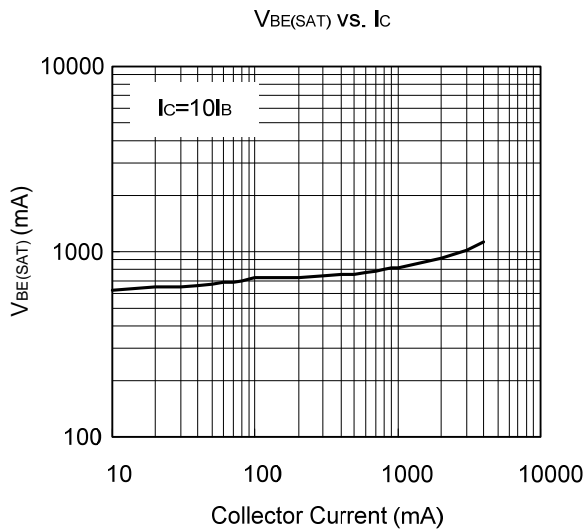
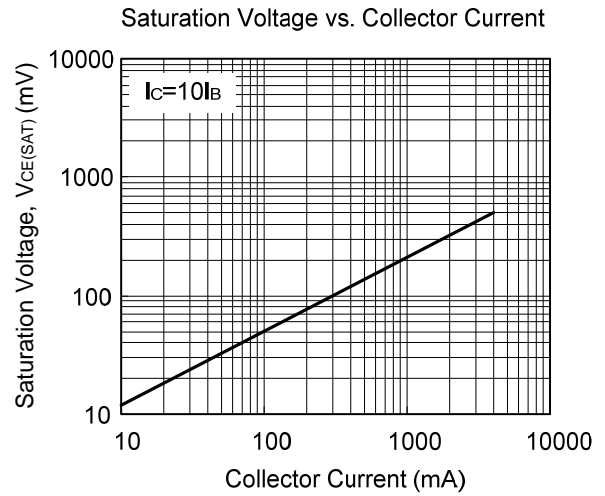
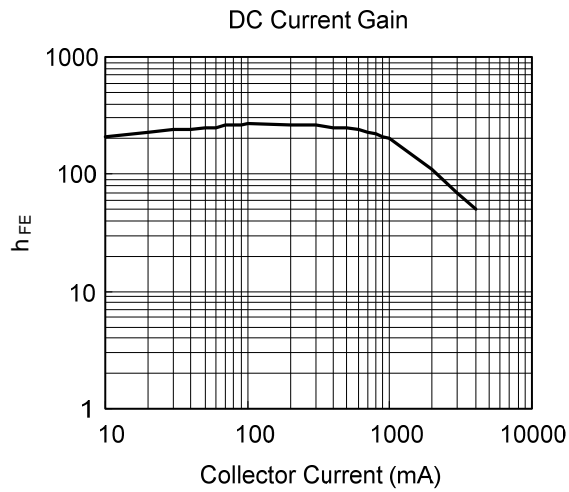
■ ELECTRICAL CHARACTERISTICS( $T_a=25^\circ\text{C}$ )

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Collector-Base Breakdown Voltage	$BV_{CBO}$	$I_C=1\text{mA}$	60			V
Collector-Emitter Breakdown Voltage	$BV_{CEO}$	$I_C=10\text{mA}$	60			V
Emitter-Base Breakdown Voltage	$BV_{EBO}$	$I_E=100\mu\text{A}$	5			V
Collector Cut-Off Current	$I_{CBO}$	$V_{CB}=20\text{V}, I_E=0$			0.1	mA
Emitter Cut-Off Current	$I_{EBO}$	$V_{EB}=4\text{V}, I_C=0$			1.0	mA
Collector-Emitter Saturation Voltage	$V_{CE(SAT)}$	$I_C=2\text{A}, I_B=0.2\text{A}$			1.0	V
Base-Emitter On voltage	$V_{BE(ON)}$	$V_{CE}=2\text{V}, I_C=1\text{A}$			1.5	V
DC Current Gain	$h_{FE}$	$I_C=1\text{A}, V_{CE}=2\text{V}$	40		320	
		$I_C=0.1\text{A}, V_{CE}=2\text{V}$	40			

■ CLASSIFICATION ON  $h_{FE}$

RANK	C	D	E	F
RANGE	40-80	60-120	100-200	160-320

## TYPICAL CHARACTERISTICS



UTC assumes no responsibility for equipment failures that result from using products at values that exceed, even momentarily, rated values (such as maximum ratings, operating condition ranges, or other parameters) listed in products specifications of any and all UTC products described or contained herein. UTC products are not designed for use in life support appliances, devices or systems where malfunction of these products can be reasonably expected to result in personal injury. Reproduction in whole or in part is prohibited without the prior written consent of the copyright owner. The information presented in this document does not form part of any quotation or contract, is believed to be accurate and reliable and may be changed without notice.