



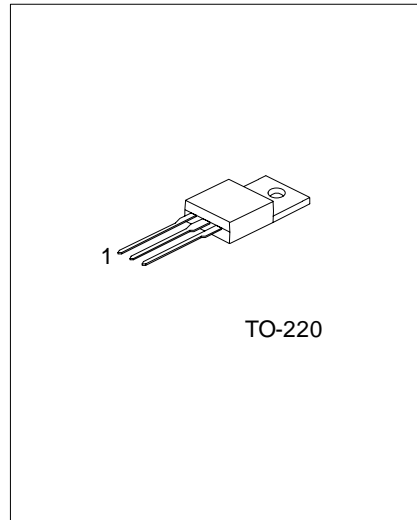
# 2SD313

## NPN SILICON TRANSISTOR

### NPN EPITAXIAL PLANAR TRANSISTOR

#### DESCRIPTION

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



\*Pb-free plating product number:2SD313L

#### ORDERING INFORMATION

Order Number		Package	Pin Assignment			Packing
Normal	Lead Free Plating		1	2	3	
2SD313-x-TA3-T	2SD313L-x-TA3-T	TO-220	B	C	E	Tube

<p>2SD313L-x-TA3-T</p>	<p>(1) T: Tube  (2) TA3: TO-220  (3) x: refer to Classification of <math>h_{FE}</math>  (4) L: Lead Free Plating, Blank: Pb/Sn</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.

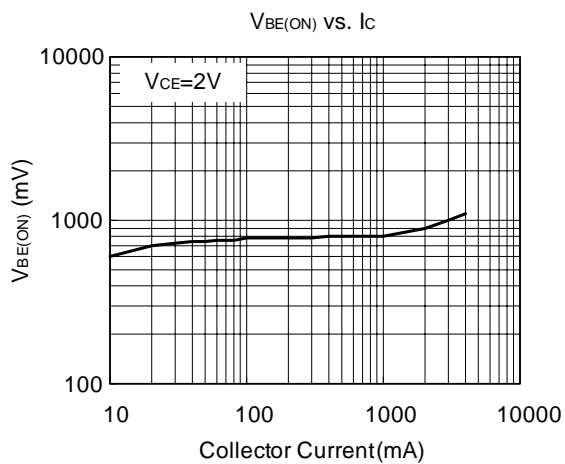
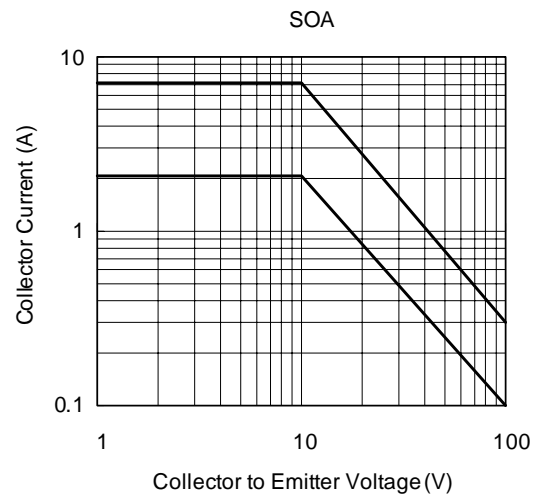
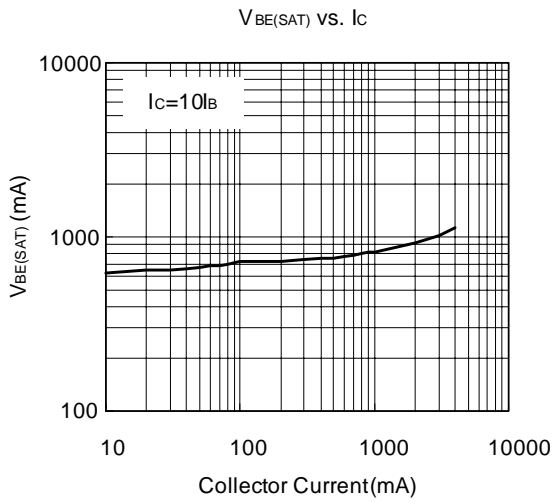
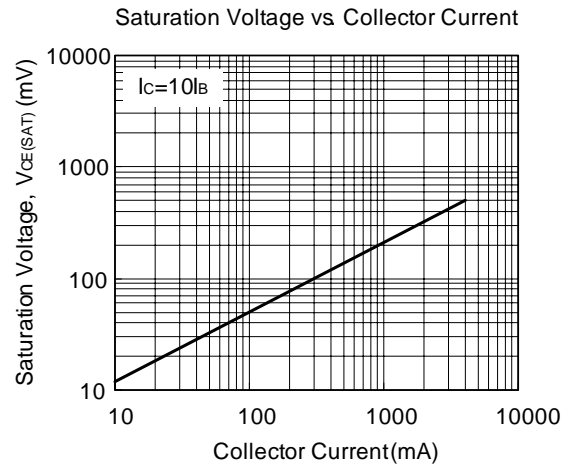
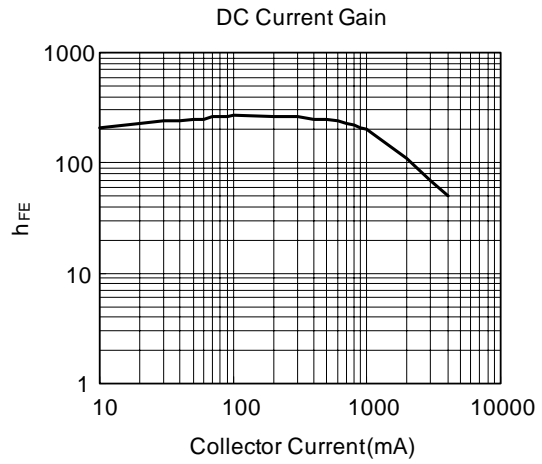
■ ELECTRICAL CHARACTERISTICS( $T_a=25^\circ\text{C}$ )

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	$h_{FE}$	$I_C=1\text{A}, V_{CE}=2\text{V}$ $I_C=0.1\text{A}, V_{CE}=2\text{V}$	40 40		320	

■ CLASSIFICATION ON  $h_{FE}$

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

### TYPICAL CHARACTERISTICS



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