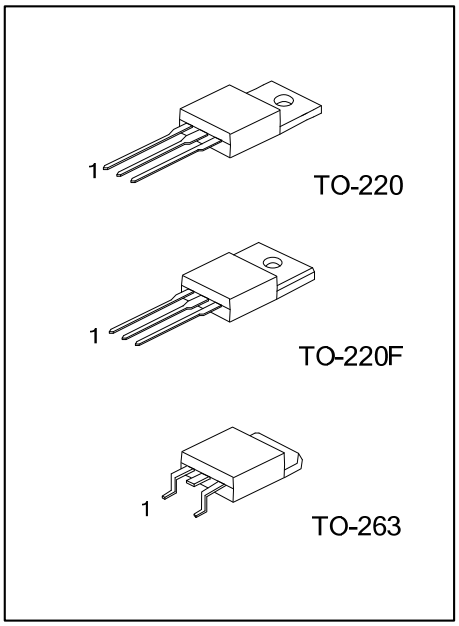
2SD313

NPN SILICON TRANSISTOR

NPN EPITAXIAL PLANAR TRANSISTOR



■ DESCRIPTION

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

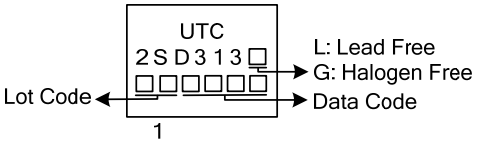
■ ORDERING INFORMATION

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
2SD313L-x-TQ2-T	2SD313G-x-TQ2-T	TO-263	B	C	E	Tube
2SD313L-x-TQ2-R	2SD313G-x-TQ2-R	TO-263	B	C	E	Tape Reel

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

2SD313L-x-TA3-T (1)Packing Type (2)Package Type (3)Rank (4)Lead Free	(1) T: Tube, R: Tape Reel (2) TA3: TO-220, TF3: TO-220F, TQ2: TO-263 (3) x: refer to Classification of h_{FE} (4) L: Lead Free, G: Halogen Free

■ MARKING



■ ABSOLUTE MAXIMUM RATINGS (T_A=25°C, unless otherwise specified)

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
Collector Dissipation	TO-220	P_C	1.75	W
	TO-220F		1.6	
	TO-263		1.73	
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°C, unless otherwise specified)

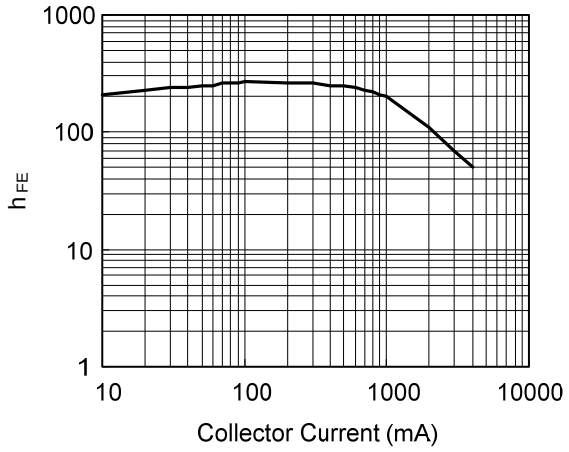
PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Collector-Base Breakdown Voltage	BV_{CBO}	I_C=1mA	60			V
Collector-Emitter Breakdown Voltage	BV_{CEO}	I_C=10mA	60			V
Emitter-Base Breakdown Voltage	BV_{EBO}	I_E=100uA	5			V
Collector Cut-Off Current	I_{CBO}	V_{CB}=20V, I_E=0			0.1	mA
Emitter Cut-Off Current	I_{EBO}	V_{EB}=4V, I_C=0			1.0	mA
DC Current Gain	h_{FE}	I_C=1A, V_{CE}=2V	40		320	
		I_C=0.1A,V_{CE}=2V	40			
Collector-Emitter Saturation Voltage	$V_{CE(SAT)}$	I_C=2A, I_B=0.2A			1.0	V
Base-Emitter On voltage	$V_{BE(ON)}$	V_{CE}=2V, I_C=1A			1.5	V
Gain Band width Product	f_T	V_{CE}= 5V, I_C= 0.5A		8		MHz

■ CLASSIFICATION ON h_{FE}

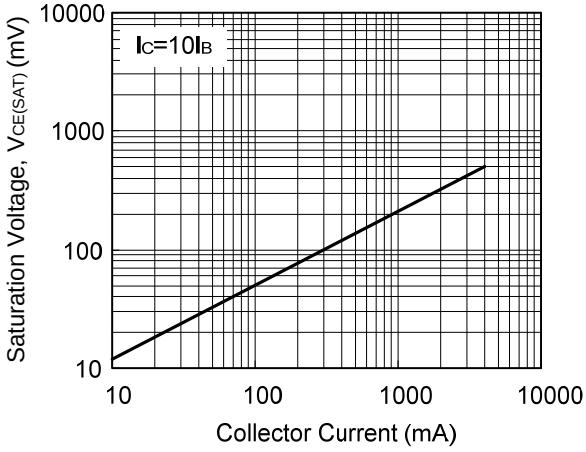
RANK	C	D	E	F
RANGE	40-80	60-120	100-200	160-320

■ TYPICAL CHARACTERISTICS

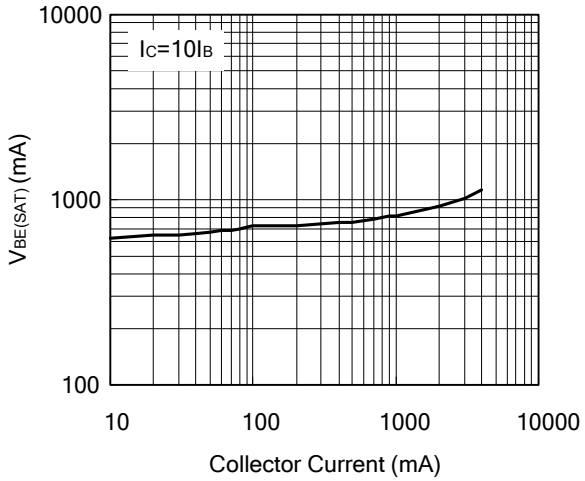
DC Current Gain



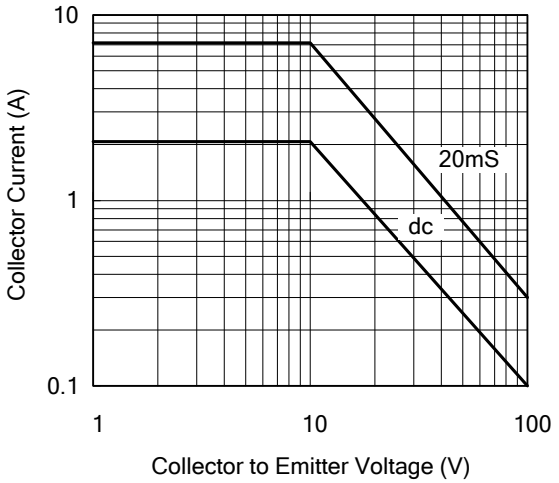
Saturation Voltage vs. Collector Current



$V_{BE(SAT)}$ vs. I_C



SOA



$V_{BE(ON)}$ vs. I_C