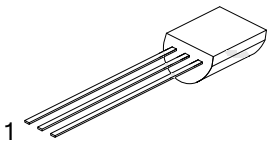
BC546/547/548

NPN EPITAXIAL SILICON TRANSISTOR

SWITCHING AND AMPLIFIER APPLICATIONS



TO-92

■ FEATURES

* High Voltage: **UTC BC546**, V_{CEO}=65V
UTC BC547, V_{CEO}=45V
UTC BC548, V_{CEO}=30V

■ ORDERING INFORMATION

Order Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
BC546L-x-T92-B	BC546G-x-T92-B	TO-92	C	B	E	Tape Box
BC546L-x-T92-K	BC546G-x-T92-K	TO-92	C	B	E	Bulk
BC547L-x-T92-B	BC547G-x-T92-B	TO-92	C	B	E	Tape Box
BC547L-x-T92-K	BC547G-x-T92-K	TO-92	C	B	E	Bulk
BC548L-x-T92-B	BC548G-x-T92-B	TO-92	C	B	E	Tape Box
BC548L-x-T92-K	BC548G-x-T92-K	TO-92	C	B	E	Bulk

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

BC546L-x-T92-B (1)Packing Type (2)Package Type (3)Rank (4)Halogen Free	(1) B: Tape Box, K: Bulk (2) T92: TO-92 (3) x: refer to CLASSIFICATION OF h_{FE} (4) L: Lead Free, G: Halogen Free

■ MARKING

BC546	BC547	BC548
UTC BC546□ □□□ 1 L: Lead Free G: Halogen Free Data Code	UTC BC547□ □□□ 1 L: Lead Free G: Halogen Free Data Code	UTC BC548□ □□□ 1 L: Lead Free G: Halogen Free Data Code

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

PARAMETER		SYMBOL	RATINGS	UNIT
Collector-base voltage	BC546	V_{CBO}	80	V
	BC547		50	V
	BC548		30	V
Collector-emitter voltage	BC546	V_{CEO}	65	V
	BC547		45	V
	BC548		30	V
Emitter-base voltage	BC546	V_{EBO}	6	V
	BC547		6	V
	BC548		5	V
Collector current (DC)		I_C	100	mA
Collector dissipation		P_C	500	mW
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 Cut-off Current	I_{CBO}	V_{CB}=30V, I_E=0			15	nA
DC current gain	h_{FE}	V_{CE}=5V, I_C=2mA	110		800	
Collector-emitter saturation voltage	$V_{CE(SAT)}$	I_C=10mA, I_B=0.5mA		90	250	mV
		I_C=100mA, I_B=5mA		200	600	mV
Base-emitter saturation voltage	$V_{BE(SAT)}$	I_C=10mA, I_B=0.5mA		700		mV
		I_C=100mA, I_B=5mA		900		mV
Base-emitter on voltage	$V_{BE(ON)}$	V_{CE}=5V, I_C=2mA	580	660	700	mV
		V_{CE}=5V, I_C=10mA			720	mV
Current gain bandwidth product	f_T	V_{CE}=5V, I_C=10mA, f=100MHz		300		MHz
Output Capacitance	C_{ob}	V_{CB}=10V, I_E=0, f=1MHz		3.5	6	pF
Input Capacitance	C_{ib}	V_{EB}=0.5V, I_C=0, f=1MHz		9		pF
Noise Figure	NF	V_{CE}=5V, I_C=200μA, f=1KHz, R_G=2KΩ		2	10	dB

■ CLASSIFICATION OF h_{FE}

RANK	A	B	C
h_{FE}	110 - 220	200 – 450	420 - 800

■ TYPICAL CHARACTERISTICS

Figure 1. Static Characteristic

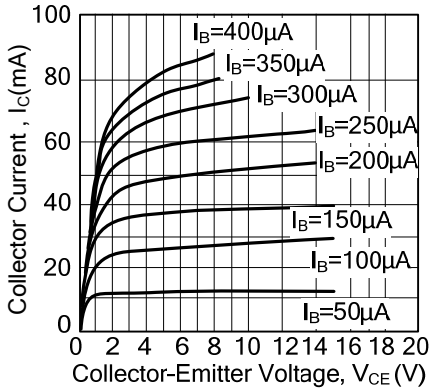


Figure 2. Transfer Characteristic

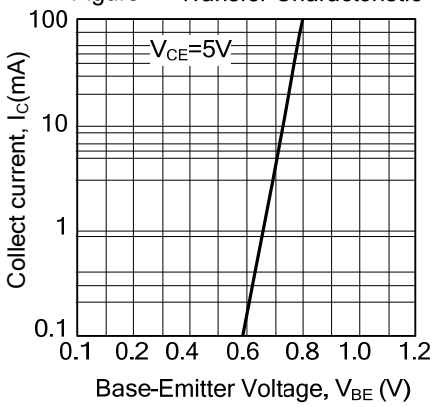


Figure 3. DC Current Gain

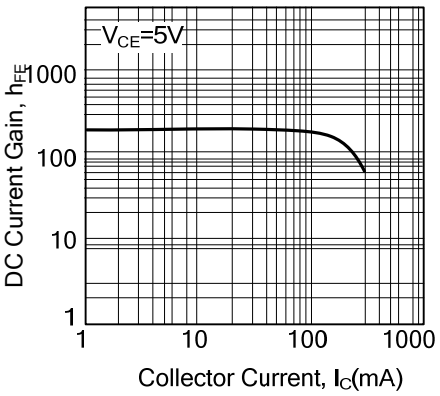


Figure 4. Base-Emitter Saturation Voltage Collector-Emitter Saturation Voltage

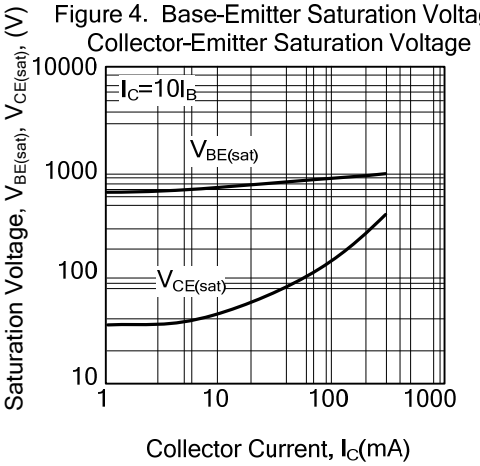


Figure 5. Output Capacitance

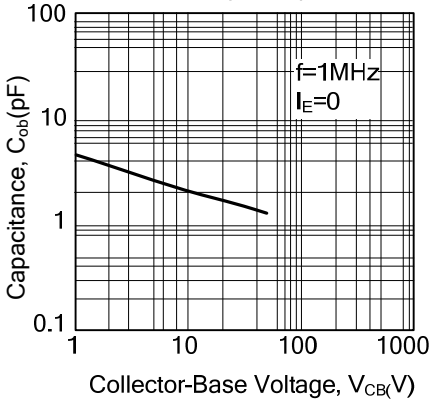


Figure 6. Current Gain Bandwidth Product