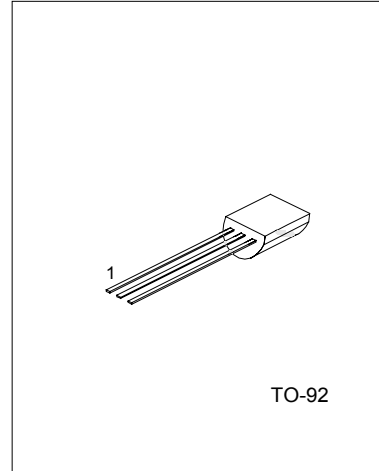


# UTC BC546/547/548 NPN EPITAXIAL SILICON TRANSISTOR

## SWITCHING AND AMPLIFIER APPLICATIONS

### FEATURES

\* High Voltage: BC546,  $V_{CE0}=65V$



1: COLLECTOR 2: BASE 3: EMITTER

### ABSOLUTE MAXIMUM RATINGS ( $T_a=25^{\circ}C$ , unless otherwise specified)

PARAMETER	SYMBOL	RATING	UNIT
Collector-base voltage : BC546 : BC547 : BC548	$V_{CB0}$	80 50 30	V V V
Collector-emitter voltage : BC546 : BC547 : BC548	$V_{CE0}$	65 45 30	V V V
Emitter-base voltage : BC546 : BC547 : BC548	$V_{EB0}$	6 6 5	V V V
Collector current (DC)	$I_c$	100	mA
Collector dissipation	$P_c$	500	mW
Junction Temperature	$T_j$	150	$^{\circ}C$
Storage Temperature	$T_{STG}$	-65 ~ +150	$^{\circ}C$

### ELECTRICAL CHARACTERISTICS ( $T_a=25^{\circ}C$ , 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

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PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
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	$V_{CE}=5V, I_c=200\mu A, f=1KHz, R_G=2K\Omega$		2	10	dB

### CLASSIFICATION OF $h_{FE}$

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

TYPICAL CHARACTERISTICS

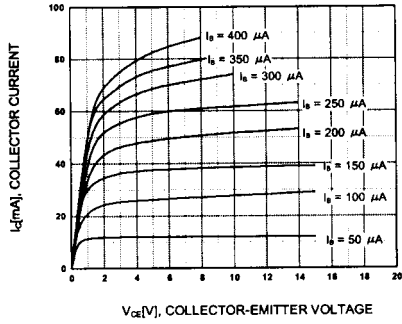


Figure 1. Static Characteristic

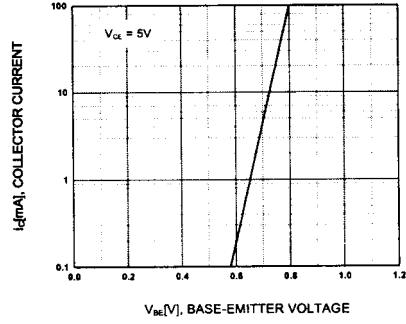


Figure 2. Transfer Characteristic

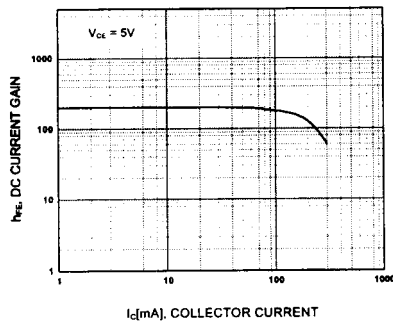


Figure 3. DC current Gain

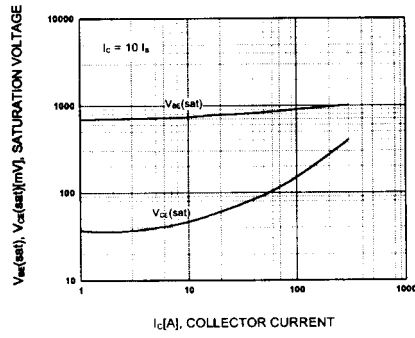


Figure 4. Base-Emitter Saturation Voltage  
Collector-Emitter Saturation Voltage

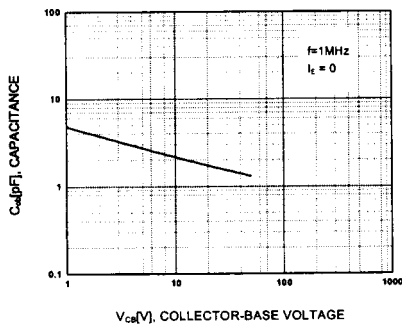


Figure 5. Output Capacitance

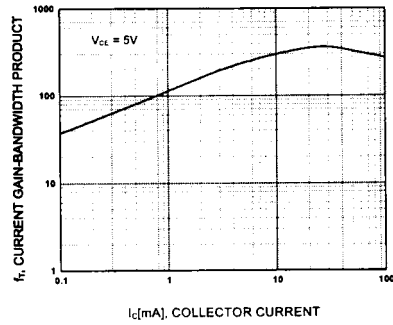


Figure 6. Current Gain Bandwidth Product

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