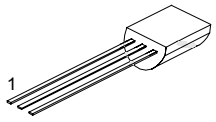
UTC BC546/547/548 NPN EPITAXIAL SILICON TRANSISTOR

SWITCHING AND AMPLIFIER APPLICATIONS

FEATURES

* High Voltage: BC546, V_{CEO}=65V



TO-92

1: COLLECTOR 2: BASE 3: EMITTER

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

PARAMETER	SYMBOL	RATING	UNIT
Collector-base voltage	V_{CBO}		
: BC546		80	V
: BC547		50	V
: BC548		30	V
Collector-emitter voltage	V_{CEO}		
: BC546		65	V
: BC547		45	V
: BC548		30	V
Emitter-base voltage	V_{EBO}		
: BC546		6	V
: BC547		6	V
: BC548		5	V
Collector current (DC)	Ic	100	mA
Collector dissipation	Pc	500	mW
Junction Temperature	T_j	150	°C
Storage Temperature	T_{STG}	-65 ~ +150	°C

ELECTRICAL CHARACTERISTICS (Ta=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, Ic=2mA	110		800	
Collector-emitter saturation voltage	V_{CE}(sat)	Ic=10mA, I_B=0.5mA		90	250	mV
		Ic=100mA, I_B=5mA		200	600	mV
Base-emitter saturation voltage	V_{BE}(sat)	Ic=10mA, I_B=0.5mA		700		mV
		Ic=100mA, I_B=5mA		900		
Base-emitter on voltage	V_{BE}(on)	V_{CE}=5V, Ic=2mA	580	660	700	mV
		V_{CE}=5V, Ic=10mA			720	mV

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Current gain bandwidth product	f_T	V_{CE}=5V, Ic=10mA, f=100MHz		300		MHz
Output Capacitance	Cob	V_{CB}=10V, I_E=0, f=1MHz		3.5	6	pF
Input Capacitance	Cib	V_{EB}=0.5V, Ic=0, f=1MHz		9		pF
Noise Figure	NF	V_{CE}=5V, Ic=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

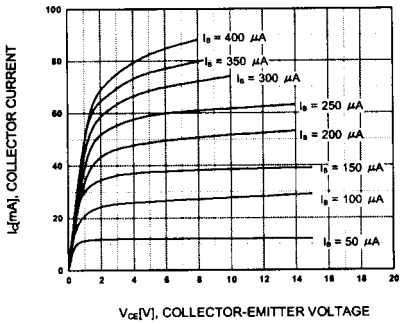


Figure 1. Static Characteristic

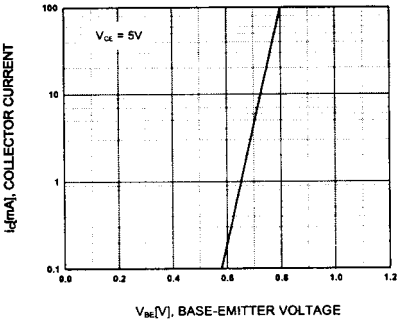


Figure 2. Transfer Characteristic

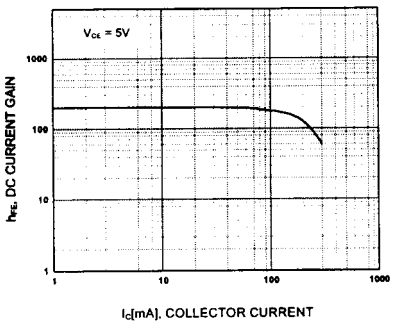


Figure 3. DC current Gain

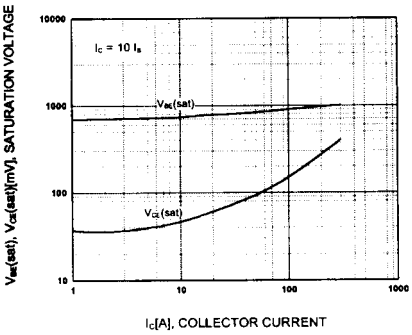


Figure 4. Base-Emitter Saturation Voltage Collector-Emitter Saturation Voltage

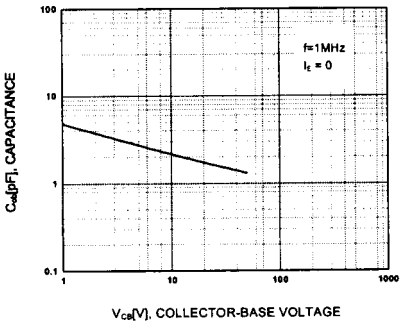


Figure 5. Output Capacitance

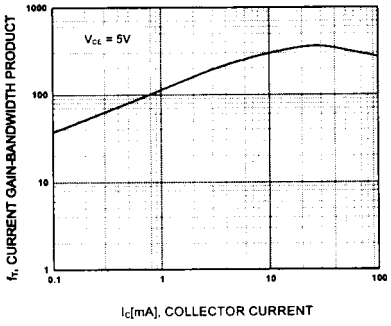


Figure 6. Current Gain Bandwidth Product