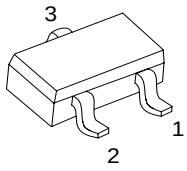
BC817

NPN EPITAXIAL SILICON TRANSISTOR

NPN GENERAL PURPOSE AMPLIFIER



SOT-23

*Pb-free plating product number:BC817L

■ Description

The UTC **BC817** is designed for general purpose medium power amplifiers and switches requiring collector currents to 1.2A.

■ PIN CONFIGURATION

PIN NO.	PIN NAME
1	EMITTER
2	BASE
3	COLLECTOR

■ ORDERING INFORMATION

Order Number		Package	Packing
Normal	Lead Free Plating		
BC817-16-AE3-R	BC817L-16-AE3-R	SOT-23	Tape & Reel
BC817-25-AE3-R	BC817L-25-AE3-R	SOT-23	Tape & Reel
BC817-40-AE3-R	BC817L-40-AE3-R	SOT-23	Tape & Reel

■ MARKING

BC817-16	BC817-25	BC817-40
6A	6B	6C

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

PARAMETER	SYMBOL	RATINGS	UNIT
Collector-Emitter Voltage	V_{CEO}	45	V
Collector-Base Voltage	V_{CES}	50	V
Emitter-Base Voltage	V_{EBO}	5.0	V
Collector Current -Continuous	I_C	1.5	A
Power Dissipation Derate above 25°C	P_D	350 2.8	mW mW/°C
Junction Temperature	T_J	150	℃
Storage Temperature	T_{STG}	-40 ~ +150	℃

Note 1. 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.

2. The device is guaranteed to meet performance specification within 0℃~+70℃ operating temperature range and assured by design from –20℃~+85℃.

■ THERMAL CHARACTERISTICS (Ta=25°C, unless otherwise specified)

CHARACTERISTIC	SYMBOL	RATING (Note)	UNIT
Thermal Resistance, Junction to Ambient	θ_{JA}	350	°C/W

Note: Device mounted on FR-4 PCB 40mm×40mm×1.5mm.

■ ELECTRICAL CHARACTERISTICS (Ta=25°C, unless otherwise specified)

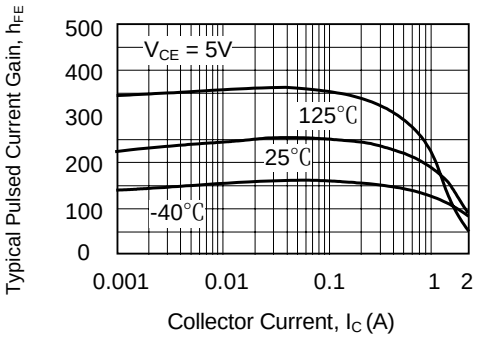
PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
OFF CHARACTERISTICS						
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	I_C=10mA, I_B=0	45			V
Collector-Base Breakdown Voltage	$V_{(BR)CES}$	I_C=100μA,I_E=0	50			V
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	I_E=10μA, Ic=0	5			V
Collector-Cutoff Current	I_{CBO}	V_{CB}=20V V_{CB}=20V,T_a=150°C			100 5	nA μA
ON CHARACTERISTICS						
DC Current Gain	h_{FE1}*	Ic=100mA,V_{CE}=1.0V	See Classification			
	h_{FE2}	Ic=500mA, V_{CE}=1.0V	40			
Collector-Emitter Saturation Voltage	$V_{CE(SAT)}$	Ic=500mA,I_B=50Ma			0.7	V
Base-Emitter On Voltage	$V_{BE(ON)}$	Ic=500mA, V_{CE}=1.0V			1.2	V

■ CLASSIFICATION OF hFE1*

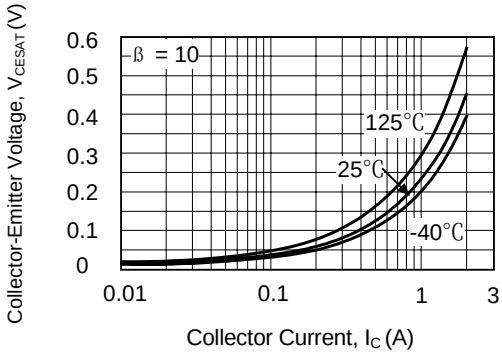
RANK	BC817-16	BC817-25	BC817-40
RANGE	100-250	160-400	250-600

■ TYPICAL CHARACTERISTICS

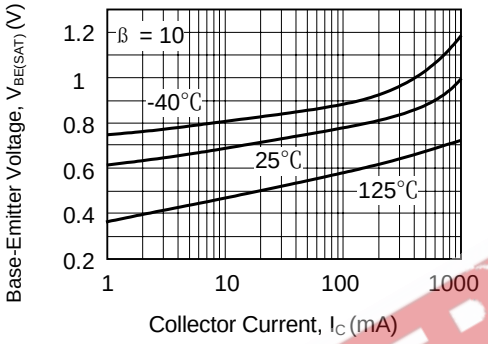
Typical Pulsed Current Gain vs Collector Current



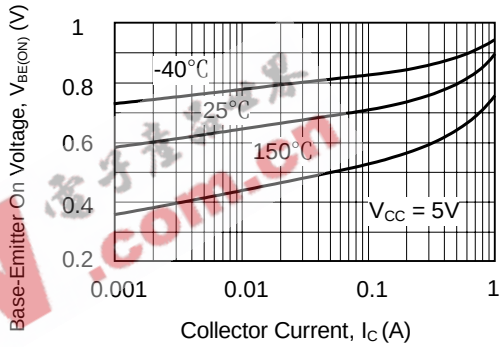
Collector-Emitter Saturation Voltage vs Collector Current



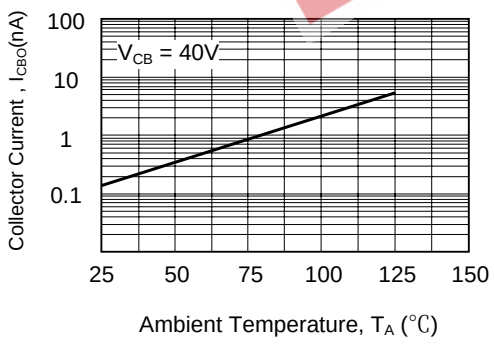
Base-Emitter Saturation Voltage vs Collector Current



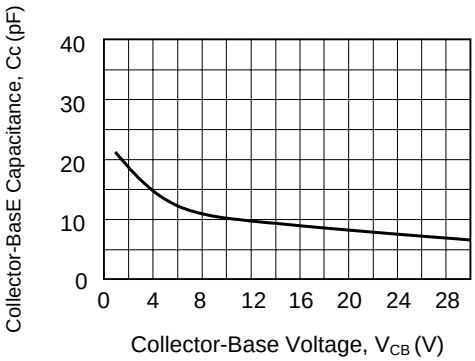
Base-Emitter On Voltage vs Collector Current



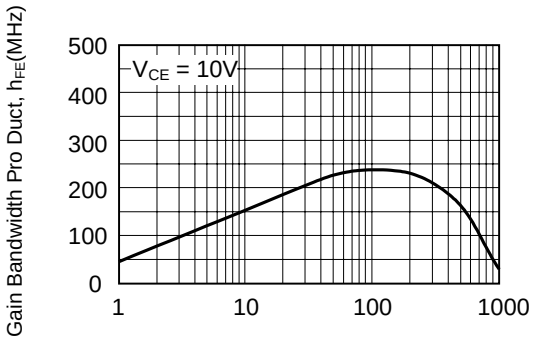
Collector-Cutoff Current vs Ambient Temperature



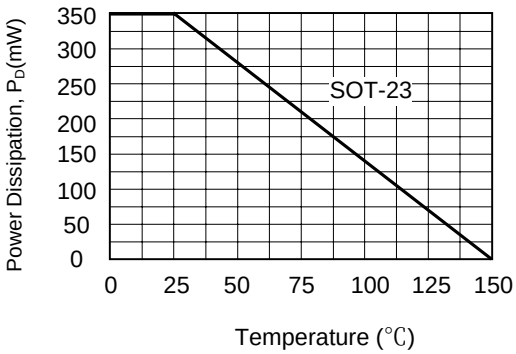
Collector-Base Capacitance vs Collector-Base Voltage



■ TYPICAL CHARACTERISTICS(cont.)



Gain Bandwidth Product vs Collector Current



Power Dissipation vs Ambient Temperature