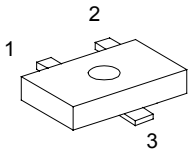
UTC BC817 NPN EPITAXIAL SILICON TRANSISTOR

NPN GENERAL PURPOSE AMPLIFIER

DESCRIPTION

The UTC BC817 is designed for general purpose medium power amplifiers and switches requiring collector currents to 1.2A. Sourced from Process 38.



SOT-23

1: EMITTER 2: BASE 3: COLLECTOR

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

PARAMETER	SYMBOL	VALUE	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	Ic	1.5	A
Operating and Storage Junction Temperature Range	$T_{j,Tstg}$	-55 to +150	°C

Note 1: These ratings are limiting values above which the serviceability of any semiconductor device may be impaired.
Note 2: These ratings are based on a maximum junction temperature of 150°C.
Note 3: These are steady state limits. The factory should be consulted on applications involving pulsed or low duty cycle operations.

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

CHARACTERISTIC	SYMBOL	MAX (note)	UNIT
Total Device Dissipation Derate above 25°C	P_D	350 2.8	mW mW/°C
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	357	°C/W

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

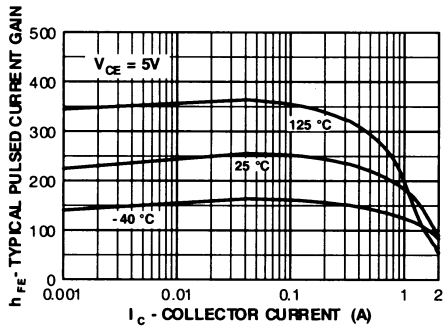
ELECTRICAL CHARACTERISTICS (Ta=25°C, unless otherwise noted)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	MAX	UNIT
OFF CHARACTERISTICS					
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	Ic=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	5.0		V
Collector-Cutoff Current	I_{CBO}	V_{CB}=20V V_{CB}=20V,T_A=150°C		100 5.0	nA μA

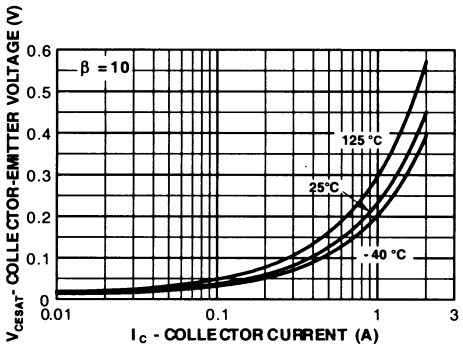
PARAMETER	SYMBOL	TEST CONDITIONS	MIN	MAX	UNIT
ON CHARACTERISTICS					
DC Current Gain	h_{FE}	Ic=100mA, V_{CE}=1.0V,			
		BC817-25	160	400	
		BC817-40	250	600	
		Ic=500mA, V_{CE}=1.0V	40		
Collector-Emitter Saturation Voltage	V_{CE}(sat)	Ic=500mA,I_B=50mA		0.7	V
Base-Emitter On Voltage	V_{BE}(on)	Ic=500mA, V_{CE}=1.0V		1.2	V

TYPICAL CHARACTERISTICS

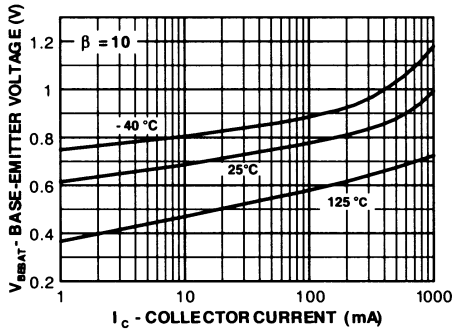
Typical Pulsed Current Gain vs Collector Current



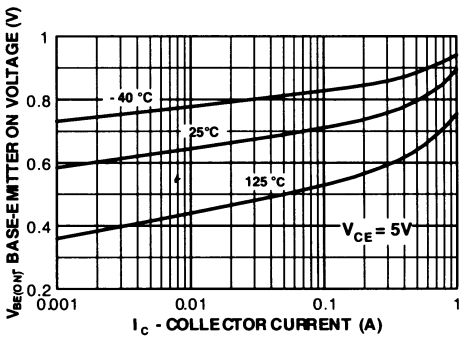
Collector-Emitter Saturation Voltage vs Collector Current



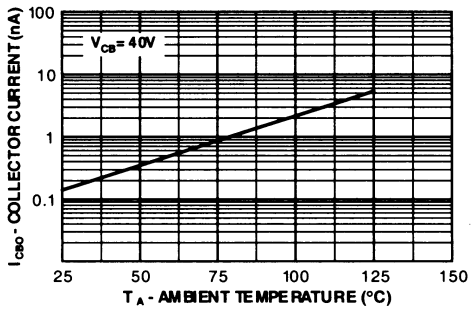
Base-Emitter Saturation Voltage vs Collector Current



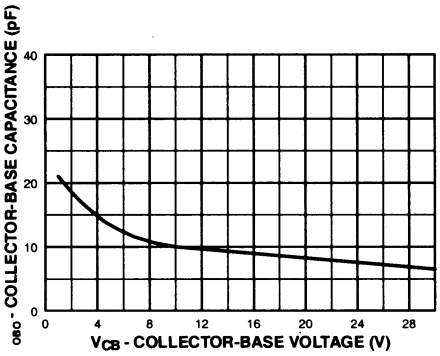
Base-Emitter ON Voltage vs Collector Current



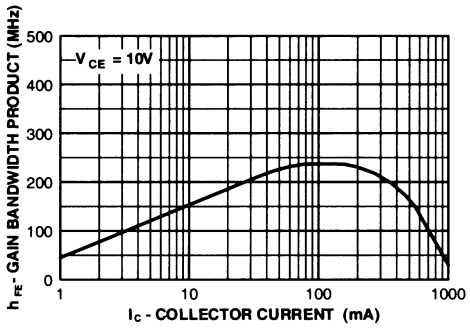
Collector-Cutoff Current vs Ambient Temperature



Collector-Base Capacitance vs Collector-Base Voltage



Gain Bandwidth Product vs Collector Current



Power Dissipation vs Ambient Temperature