

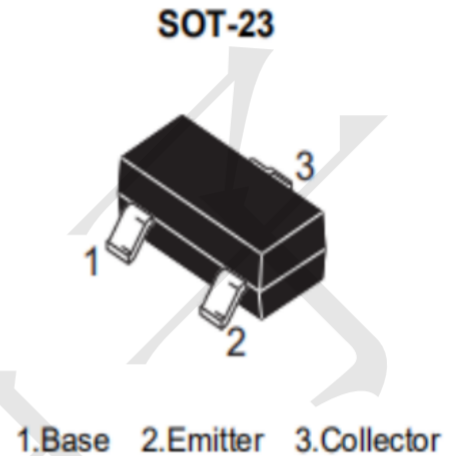
TPBC846B

NPN Silicon Epitaxial Planar Transistor

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Features

For switching and AF amplifier applications



Absolute Maximum Ratings (Ta=25°C)

Parameter	Symbol	Value	Unit
Collector Base Voltage	V_{CBO}	80	V
Collector Emitter Voltage	V_{CEO}	65	V
Emitter Base Voltage	V_{EBO}	6	V
Collector Current	I_C	100	mA
Peak Collector Current	I_{CM}	200	mA
Power Dissipation	P_{tot}	300	mW
Junction Temperature	T_J	150	°C
Storage Temperature Range	T_{STG}	- 65 to + 150	°C

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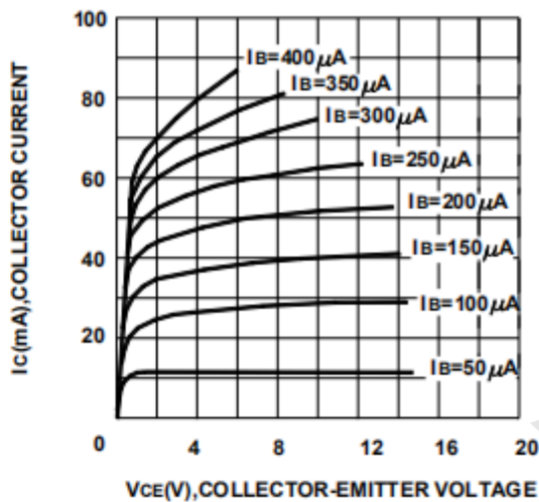
Characteristics (Ta=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit
DC Current Gain at $V_{CE} = 5\text{ V}$, $I_C = 2\text{ mA}$ Current Gain Group	A				
	B				
	C				
	h_{FE}	110	-	220	-
	h_{FE}	200	-	450	-
	h_{FE}	420	-	800	-
Collector Base Cutoff Current at $V_{CB} = 30\text{ V}$	I_{CBO}	-	-	15	nA
Collector Base Breakdown Voltage at $I_C = 100\text{ }\mu\text{A}$	$V_{(BR)CBO}$	80	-	-	V
Collector Emitter Breakdown Voltage at $I_C = 2\text{ mA}$	$V_{(BR)CEO}$	65	-	-	V
Collector Emitter Breakdown Voltage at $I_C = 100\text{ }\mu\text{A}$	$V_{(BR)EBO}$	6	-	-	V
Collector Emitter Saturation Voltage at $I_C = 10\text{ mA}$, $I_B = 0.5\text{ mA}$ at $I_C = 100\text{ mA}$, $I_B = 5\text{ mA}$	V_{CEsat}	-	-	250	mV
	V_{CEsat}	-	-	600	mV
Base Emitter On Voltage at $V_{CE} = 5\text{ V}$, $I_C = 2\text{ mA}$ at $V_{CE} = 5\text{ V}$, $I_C = 10\text{ mA}$	$V_{BE(on)}$	580	-	700	mV
	$V_{BE(on)}$	-	-	720	mV
Transition Frequency at $V_{CE} = 5\text{ V}$, $I_C = 10\text{ mA}$, $f = 100\text{ MHz}$	f_T	-	300	-	MHz
Output Capacitance at $V_{CB} = 10\text{ V}$, $f = 1\text{ MHz}$	C_{ob}	-	-	6	pF
Input Capacitance at $V_{EB} = 0.5\text{ V}$, $f = 1\text{ MHz}$	C_{ib}	-	9	-	pF

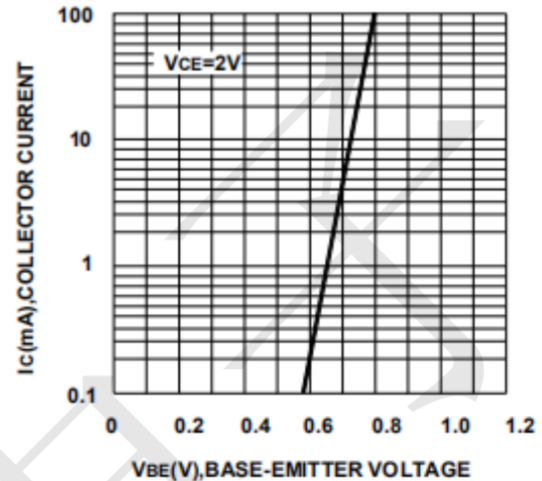
Rating And Characteristics Curves

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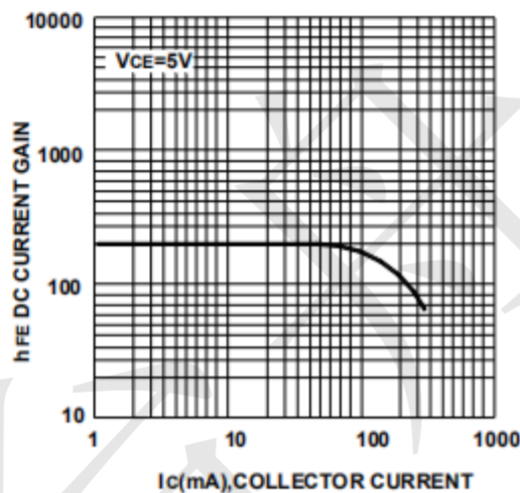
STATIC CHARACTERISTIC



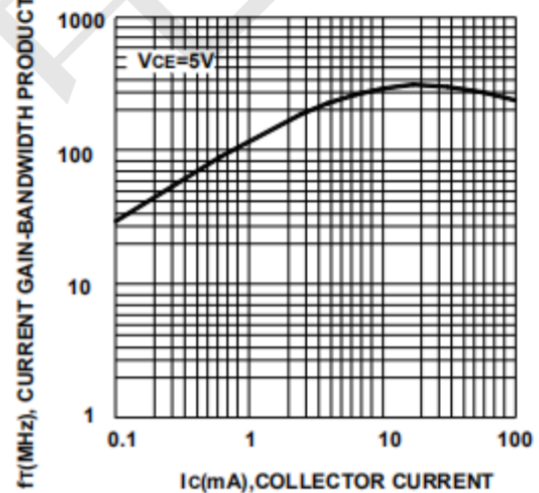
BASE-EMITTER ON VOLTAGE



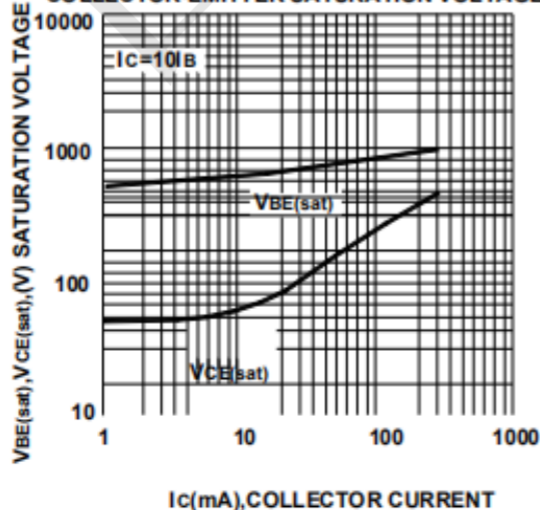
DC CURRENT GAIN



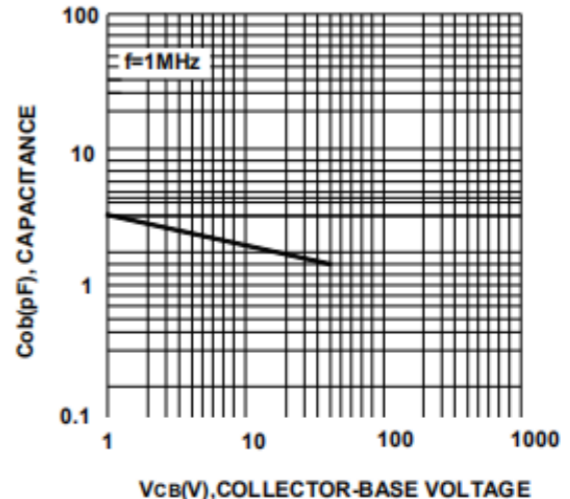
CURRENT GAIN BANDWIDTH PRODUCT



BASE-EMITTER SATURATION VOLTAGE
COLLECTOR-EMITTER SATURATION VOLTAGE

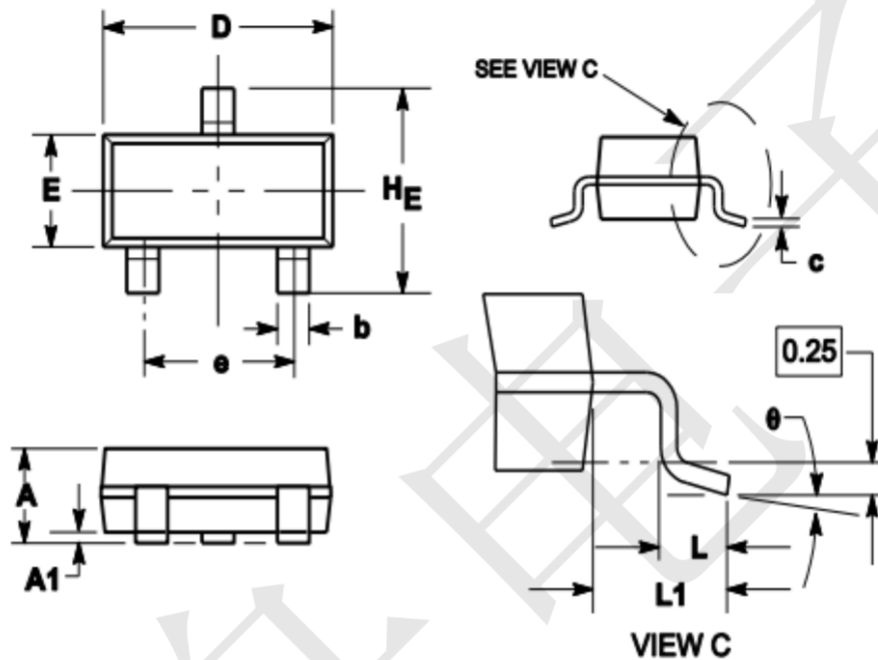


COLLECTOR OUTPUT CAPACITANCE

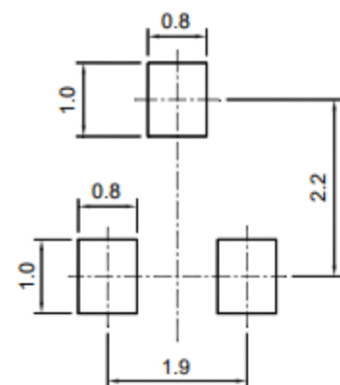


Package Outline

SOT-23



Symbol	Dimensions in millimeter		
	Min.	Typ.	Max.
A	0.900	1.025	1.150
A1	0.000	0.050	0.100
b	0.300	0.400	0.500
c	0.080	0.115	0.150
D	2.800	2.900	3.000
E	1.200	1.300	1.400
HE	2.250	2.400	2.550
e	1.800	1.900	2.000
L1	0.550REF		
L	0.300		0.500
θ	0°		8°



SOT-23

Recommended soldering pad