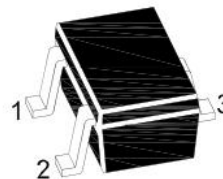


## NPN Silicon Epitaxial Transistor

for switching and amplifier applications



1.Base 2.Emitter 3.Collector  
SOT-523 Plastic Package

### Absolute Maximum Ratings ( $T_a = 25\text{ }^\circ\text{C}$ )

Parameter	Symbol	Value	Unit
Collector Base Voltage	$V_{CBO}$	BC846T 80	V
		BC847T, BC850T 50	
		BC848T, BC849T 30	
Collector Emitter Voltage	$V_{CEO}$	BC846T 65	V
		BC847T, BC850T 45	
		BC848T, BC849T 30	
Emitter Base Voltage	$V_{EBO}$	BC846T, BC847T 6	V
		BC848T, BC849T, BC850T 5	
Collector Current	$I_C$	100	mA
Peak Collector Current	$I_{CM}$	200	mA
Power Dissipation	$P_{tot}$	150	mW
Junction Temperature	$T_j$	150	$^\circ\text{C}$
Storage Temperature Range	$T_{stg}$	- 65 to + 150	$^\circ\text{C}$

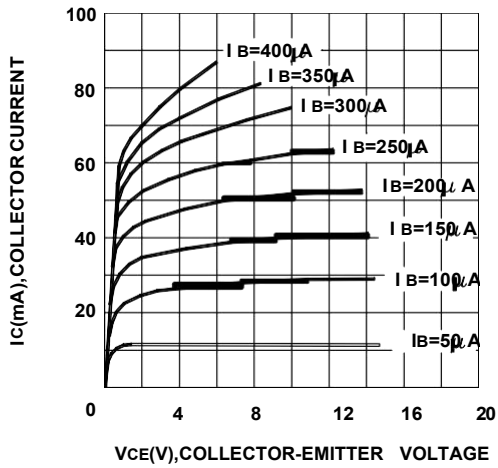
### Characteristics at $T_a = 25\text{ }^\circ\text{C}$

Parameter	Symbol	Min.	Typ.	Max.	Unit
DC Current Gain at $V_{CE} = 5\text{ V}$ , $I_C = 2\text{ mA}$	Current Gain Group A $h_{FE}$	110	-	220	-
	B $h_{FE}$	200	-	450	-
	C $h_{FE}$	420	-	800	-
Collector Base Cutoff Current at $V_{CB} = 30\text{ V}$	$I_{CBO}$	-	-	15	nA
Collector Emitter Saturation Voltage at $I_C = 10\text{ mA}$ , $I_B = 0.5\text{ mA}$ at $I_C = 100\text{ mA}$ , $I_B = 5\text{ mA}$	$V_{CE(sat)}$	-	-	250	mV
	$V_{CE(sat)}$	-	-	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

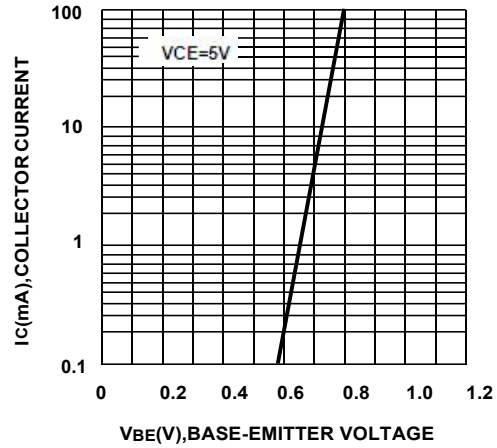
### MARKING CODE

TYPE	846AT	846BT	846CT	847AT	847BT	847CT	848AT	848BT	848CT
MARKING	1A	1B	1C	1E	1F	1G	1J	1K	1L
TYPE	849AT	849BT	849CT	850AT	850BT	850CT			
MARKING	2A	2B	2C	2E	2F	2G			

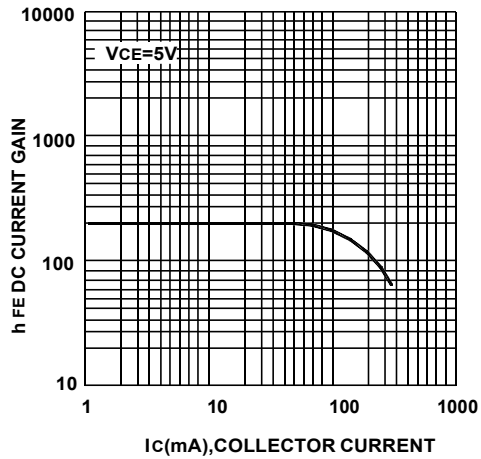
STATIC CHARACTERISTIC



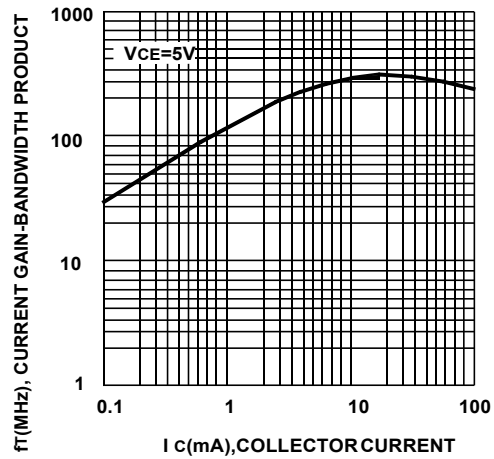
BASE-EMITTER ON VOLTAGE



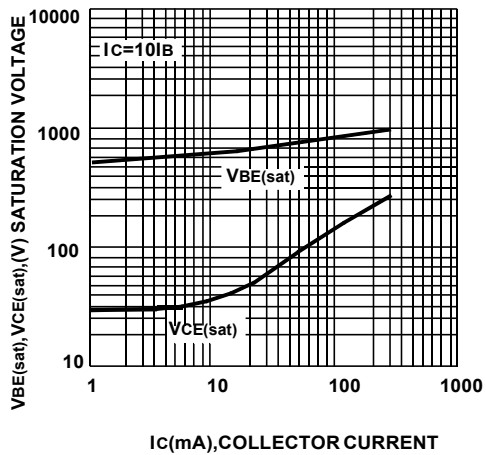
DC CURRENT GAIN



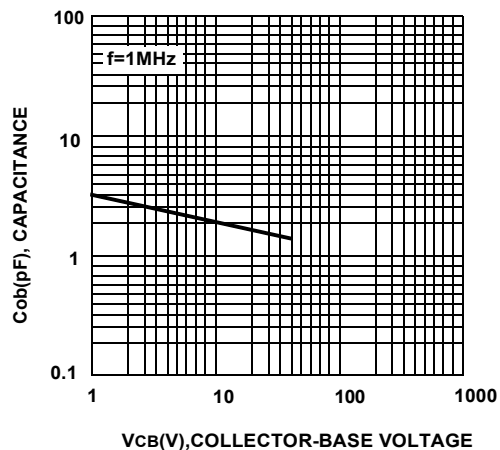
CURRENT GAIN BANDWIDTH PRODUCT



BASE-EMITTER SATURATION VOLTAGE  
COLLECTOR-EMITTER SATURATION VOLTAGE



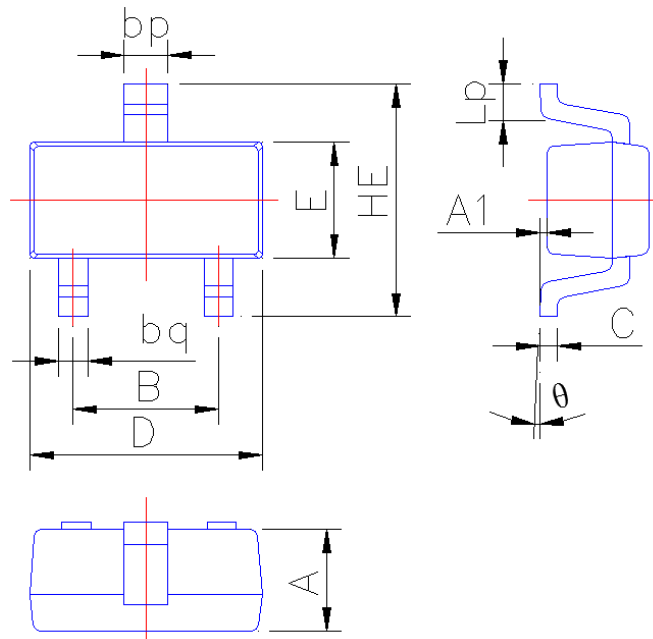
COLLECTOR OUTPUT CAPACITANCE



## PACKAGE OUTLINE

Plastic surface mounted package; 3 leads

SOT-523



Symbol	Dimension in Millimeters	
	Min	Max
A	0.60	0.80
A1	0.010	0.100
B	0.95	1.05
bp	0.26	0.40
bq	0.16	0.30
C	0.09	0.15
D	1.50	1.70
E	0.70	0.85
HE	1.45	1.75
Lp	0.16	0.36
θ	0°	5°