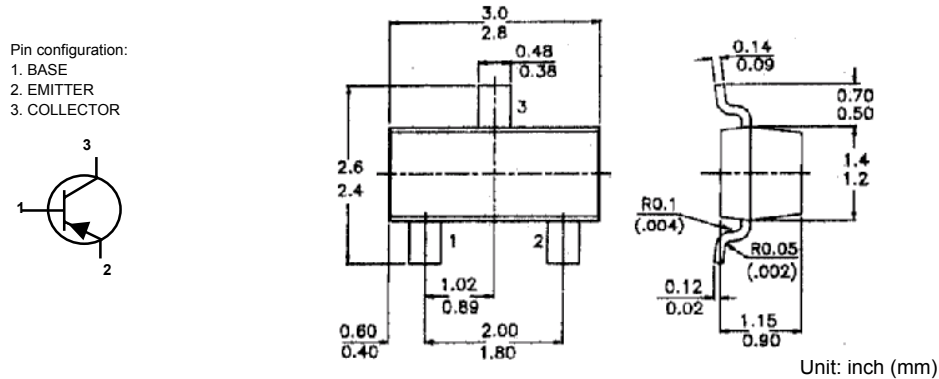


## PNP Silicon Planar Epitaxial Transistors



### Absolute Maximum Ratings (Ta = 25 °C unless specified otherwise)

DESCRIPTION	SYMBOL	BC856	BC857	BC858	UNITS
Collector Base Voltage	$V_{CBO}$	80	50	30	V
Collector Emmitter Voltage (+V <sub>BE</sub> = 1V)	$V_{CEX}$	80	50	30	V
Collector Emitter Voltage	$V_{CEO}$	65	45	30	V
Emitter Base Voltage	$V_{EBO}$		5		V
Collector Current (DC)	$I_C$		100		mA
Collector Current - Peak	$I_{CM}$		200		mA
Emitter Current - Peak	$I_{EM}$		200		mA
Base Current - Peak	$I_{BM}$		200		mA
Total power dissipation up to T <sub>amb</sub> = 60 °C	$P_{tot}^{**}$		250		mW
Storage Temperature	T <sub>stg</sub>		-55 to +150		°C
Junction Temperature	T <sub>j</sub>		150		°C

### Thermal Resistance

From junction to tab	$R_{th(j-t)}$	60	K/W
From tab to soldering points	$R_{th(t-s)}$	280	
From soldering points to ambient	$R_{th(s-a)}^{**}$	90	

\*\*Mounted on a ceramic substrate of 8mm x 10mm x 0.7mm

**Electrical Characteristics** (at Ta=25 °C unless otherwise specified)

DESCRIPTION	SYMBOL	TEST CONDITION	MIN	TYP	MAX	UNITS
Collector Cut Off Current	$I_{CBO}$	$V_{CB} = 30V, I_E = 0$			15	nA
		$V_{CB} = 30V, I_E = 0, T_J = 150^{\circ}C$			4	uA
Base Emitter On Voltage	$V_{BE(on)}$ *	$I_C = 2mA, V_{CE} = 5V$	0.6		0.75	V
		$I_C = 10mA, V_{CE} = 5V$			0.82	
Collector Emitter Saturation Voltage	$V_{CE(Sat)}$	$I_C = 10mA, I_B = 0.5mA$			0.30	V
		$I_C = 100mA, I_B = 5mA$			0.65	
Base Emitter Saturation Voltage	$V_{BE(Sat)}$ ***	$I_C = 10mA, I_B = 0.5mA$		0.7		V
		$I_C = 100mA, I_B = 5mA$		0.85		
Knee Voltage	$V_{CEK}$	$I_C = 10mA, -I_B =$ Value for which $I_C = 11mA$ at $-V_{CE} = 1V$			0.60	V
DC Current Gain	$h_{FE}$	$I_C = 2mA, V_{CE} = 5V$				
		<b>BC856</b>	125		475	
		<b>BC857/BC858</b>	125		800	
		<b>BC856A/BC857A/BC858A</b>	125		250	
		<b>BC856B/BC857B/BC858B</b>	220		475	
<b>BC857C/BC858C</b>	420		800			
Collector Capacitance	$C_C$	$I_E = I_C = 0, V_{CB} = 10V, f = 1MHz$		4.5		pF
Transition Frequency	$f_T$	$I_C = 10mA, V_{CB} = 5V, f = 100MHz$	100			MHz
Small Signal Current Gain	$ h_{fe} $	$I_C = 2mA, V_{CE} = 5V, f = 1kHz$				
		<b>BC856</b>	125		500	
<b>BC857/BC858</b>	125		800			
Noise Figure	NF	$I_C = 0.2mA, V_{CE} = 5V$ $R_S = 2k\ \Omega, f = 1kHz, B = 200Hz$			10	dB

\* $V_{BE(on)}$  decreases by about 2mV/K with increase temperature.

\*\*\* $V_{BE(Sat)}$  decreases by about 1.7mV/K with increase temperature.