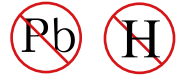




# General Purpose Transistors

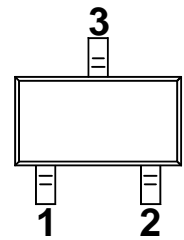
## NPN Silicon



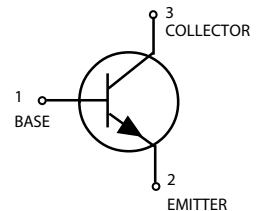
SOT-323

**MAXIMUM RATINGS**

Parameter	Symbol	Limits	Unit
Collector–Emitter Voltage	V <sub>CEO</sub>	45	V
Collector–Base Voltage	V <sub>CB0</sub>	50	V
Emitter–Base Voltage	V <sub>EB0</sub>	5	V
Collector Current(Continuous)	I <sub>C</sub>	500	mA

**THERMAL CHARACTERISTICS**

Parameter	Symbol	Limits	Unit
Total Device Dissipation FR-5 Board (Note 1) TA = 25°C	PD	150	mW
Derate above 25°C		1.2	mW/°C
Thermal Resistance, Junction to Ambient	R <sub>θJA</sub>	833	°C/W
Total Device Dissipation Alumina Substrate (Note 2) TA = 25°C	PD	200	mW
Derate above 25°C		1.6	mW/°C
Thermal Resistance, Junction to Ambient	R <sub>θJA</sub>	625	°C/W
Junction and Storage Temperature	T <sub>J</sub> ,T <sub>stg</sub>	-55~+150	°C



1. FR-5 = 1.0 × 0.75 × 0.062 in.

2. Alumina = 0.4 × 0.3 × 0.024 in. 99.5% alumina.

**DEVICE MARKING AND ORDERING INFORMATION**

Device	Marking	Shipping
BC817W-16	6A	3000/Tape&Reel
BC817W-25	6B	
BC817W-40	6C / YM	

# ELECTRICAL CHARACTERISTICS

BC817W-16 -25 -40

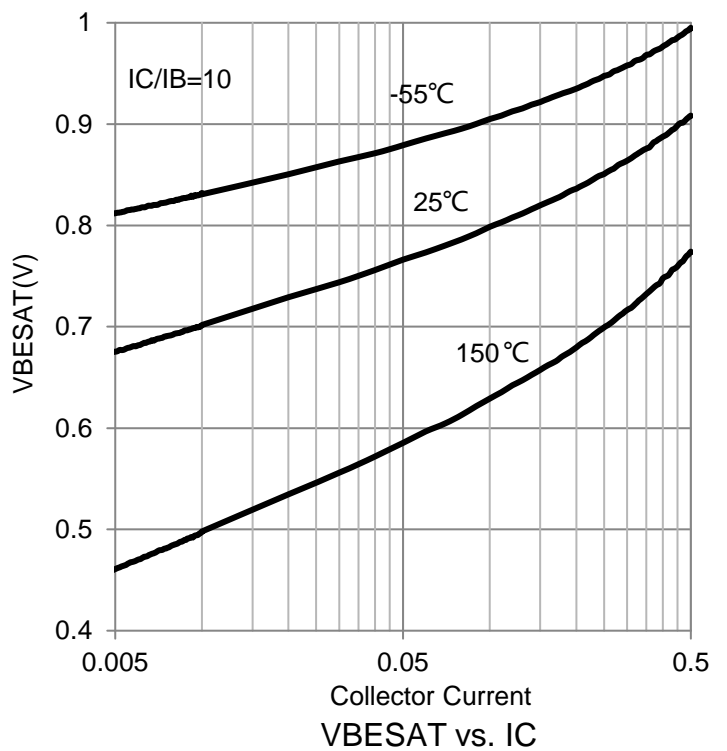
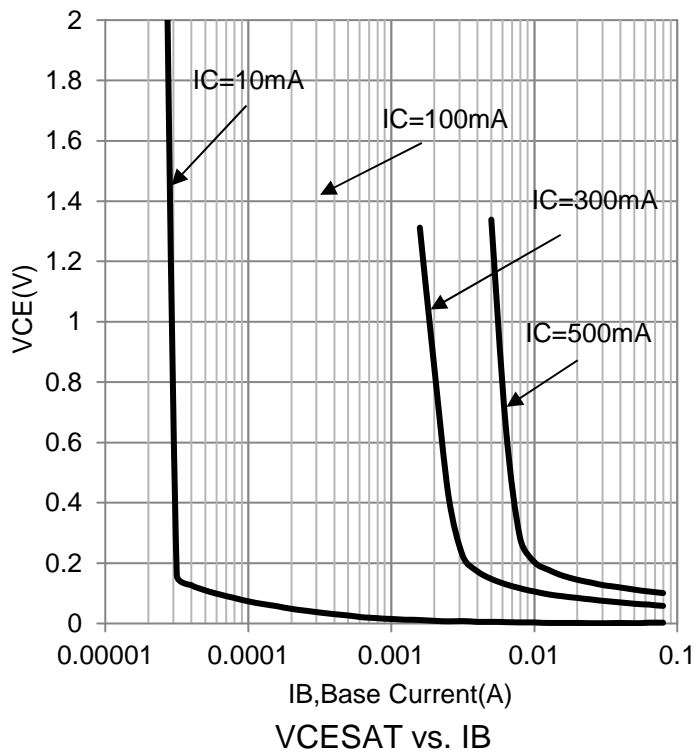
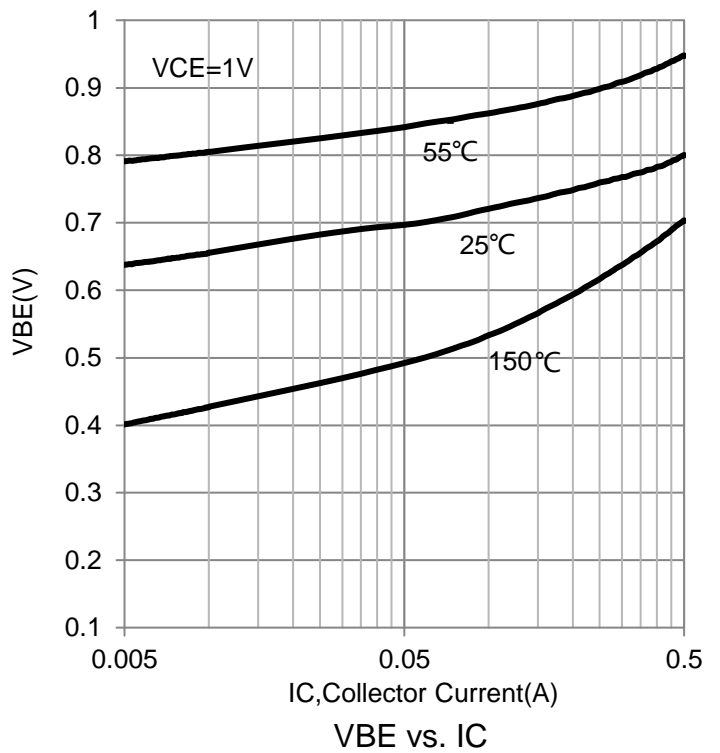
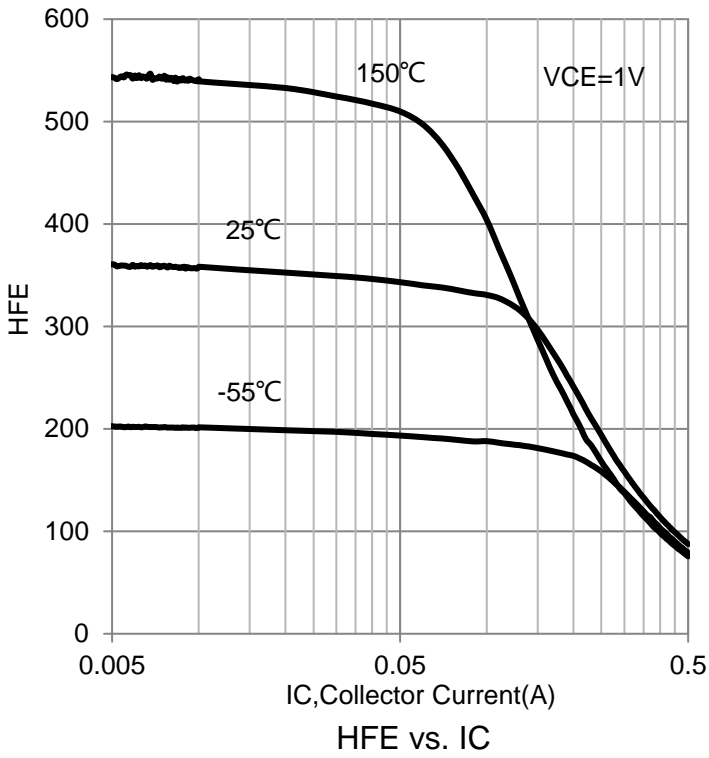
## ELECTRICAL CHARACTERISTICS (Ta= 25°C)

Characteristic	Symbol	Min.	Typ.	Max.	Unit
<b>OFF CHARACTERISTICS</b>					
Collector–Emitter Breakdown Voltage (IC = 10 mA)	V(BR)CEO	45	-	-	V
Collector–Emitter Breakdown Voltage (IC = 10 μA, VEB = 0)	V(BR)CES	50	-	-	V
Emitter–Base Breakdown Voltage (IE = 1.0 μA)	V(BR)EBO	5	-	-	V
Collector Cutoff Current (VCB = 20 V) (VCB = 20 V, TA = 150°C)	ICBO	- -	- -	100 5	nA μA
<b>ON CHARACTERISTICS</b>					
DC Current Gain (IC = 100 mA, VCE = 1.0 V) (IC = 500 mA, VCE = 1.0 V)	hFE	100 40	- -	600 -	
Collector–Emitter Saturation Voltage (IC = 500 mA, IB = 50 mA)	VCE(sat)	-	-	0.7	V
Base–Emitter Voltage (IC = 500 mA, VCE = 1.0 V)	VBE(on)	-	-	1.2	V
<b>SMALL–SIGNAL CHARACTERISTICS</b>					
Current–Gain — Bandwidth Product (IC = 10 mA, VCE = 5.0 V, f = 100 MHz)	fT	100	-	-	MHz
Output Capacitance (VCB = 10 V, f = 1.0 MHz)	Cobo	-	10	-	pF

Device	hFE
BC817W-16	100 - 250
BC817W-25	160 - 400
BC817W-40	250 - 600

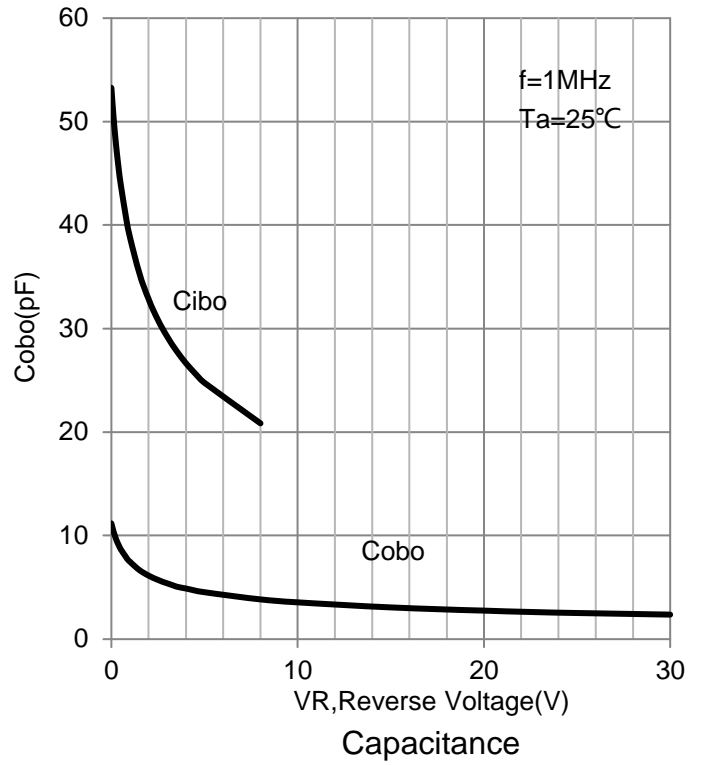
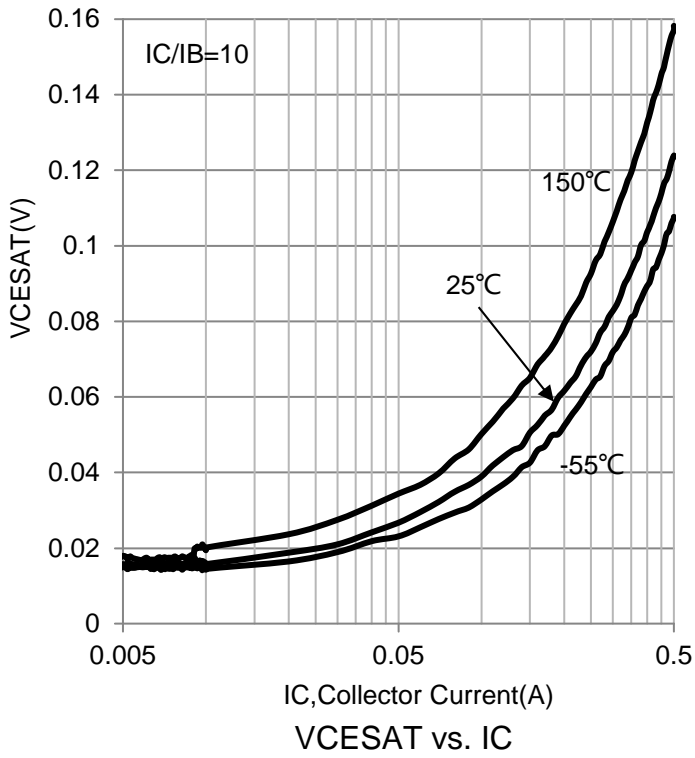
# ELECTRICAL CHARACTERISTICS

BC817W-16 -25 -40



# ELECTRICAL CHARACTERISTICS

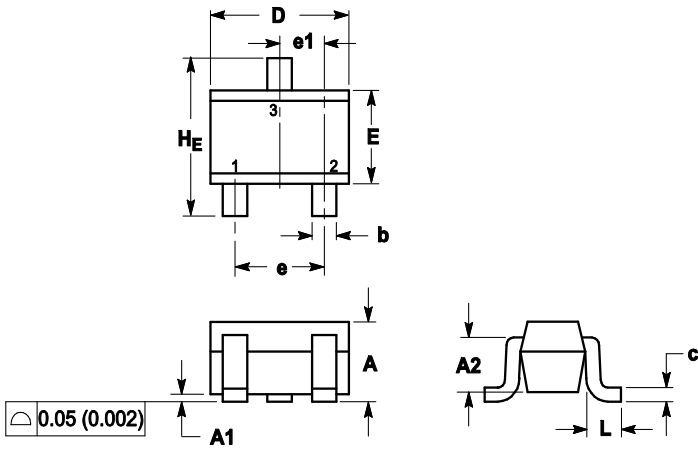
BC817W-16 -25 -40



# PACKAGE OUTLINE & DIMENSIONS

BC817W-16 -25 -40

## SOT-323 Package Outline Dimensions



DIM	MILLIMETERS			INCHES		
	MIN	NOM	MAX	MIN	NOM	MAX
A	0.80	0.90	1.00	0.032	0.035	0.039
A1	0.00	0.05	0.10	0.000	0.002	0.004
A2	0.70REF			0.028REF		
b	0.30	0.35	0.40	0.012	0.014	0.016
c	0.10	0.18	0.25	0.004	0.007	0.010
D	1.80	2.10	2.20	0.071	0.083	0.087
E	1.15	1.24	1.35	0.045	0.049	0.053
e	1.20	1.30	1.40	0.047	0.051	0.055
e1	0.65REF			0.026REF		
L	0.20	0.38	0.56	0.008	0.015	0.022
HE	2.00	2.10	2.40	0.079	0.083	0.095

## Soldering Footprint

