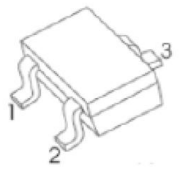
JIANGSU CHANGJING ELECTRONICS TECHNOLOGY CO., LTD.

AD-BC817W* series Plastic-Encapsulated Transistor

AD-BC817W* series Transistor (NPN)

SOT-323



1. BASE
2. EMITTER
3. COLLECTOR

FEATURES

- For general AF applications
- High collector current
- High current gain
- Low collector-emitter saturation voltage
- AEC-Q101 qualified

MAXIMUM RATINGS (T_j = 25°C unless otherwise specified)

Parameter	Symbol	Value	Unit
Collector-base voltage	V_{CBO}	50	V
Collector-emitter voltage	V_{CEO}	45	V
Emitter-base voltage	V_{EBO}	5	V
Collector continuous current	I_C	500	mA
Collector power dissipation	P_C	200	mW
Thermal resistance from junction to ambient	$R_{\theta JA}$	625	°C/W
Operating junction and storage temperature range	T_j, T_{stg}	-55 ~ +150	°C

ELECTRICAL CHARACTERISTICS (T_j = 25°C unless otherwise specified)

Parameter	Symbol	Test condition	Min	Typ	Max	Unit
Collector-base breakdown voltage	V_{CBO}	I_C = 10μA, I_E = 0A	50	-	-	V
Collector-emitter breakdown voltage	V_{CEO}	I_C = 10mA, I_B = 0A	45	-	-	V
Emitter-base breakdown voltage	V_{EBO}	I_E = 1μA, I_C = 0A	5	-	-	V
Collector cutoff current	I_{CBO}	V_{CB} = 20V, I_E = 0A	-	-	0.1	μA
Emitter cut-off current	I_{EBO}	V_{EB} = 5V, I_C = 0A	-	-	0.1	μA
DC current gain	$h_{FE(1)}$	V_{CE} = 1V, I_C = 100mA	100	-	600	-
	$h_{FE(2)}$	V_{CE} = 1V, I_C = 500mA	40	-	-	-
Collector-emitter saturation voltage	$V_{CE(sat)}$	I_C = 500mA, I_B = 50mA	-	-	0.7	V
Base-emitter saturation voltage	$V_{BE(sat)}$	I_C = 500mA, I_B = 50mA	-	-	1.2	V
Base-emitter voltage	V_{BE}	V_{CE} = 1V, I_C = 500mA	-	-	1.2	V

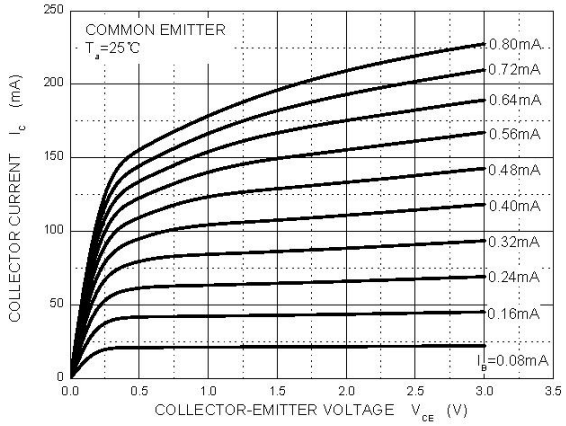
Collecter capacitance	C_{ob}	V_{CB} = 10V, f = 1MHz	-	-	5	pF
Transition frequency	f_T	V_{CE} = 5V, I_C = 10mA, f = 100MHz	100	-	-	MHz

CLASSIFICATION OF $h_{FE(1)}$

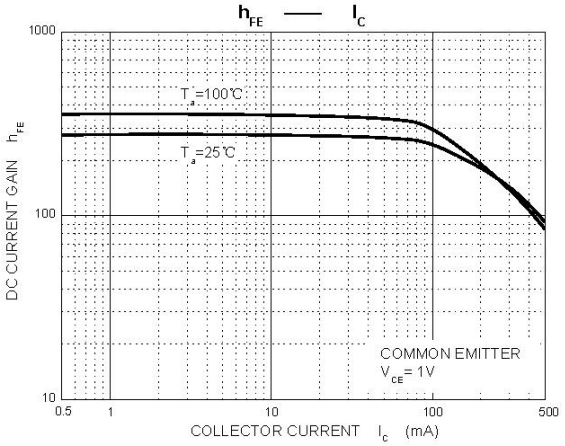
Rank	AD-BC817W-16	AD-BC817W-25	AD-BC817W-40
Range	100-250	160-400	250-600
Marking	$\bar{6}$A	$\bar{6}$B	$\bar{6}$C

TYPICAL CHARACTERISTICS

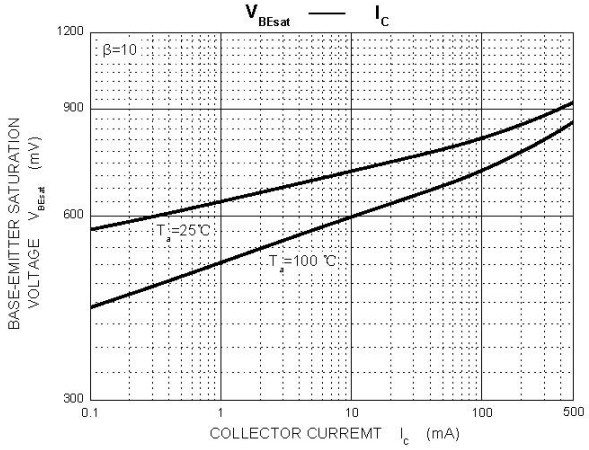
Static Characteristic



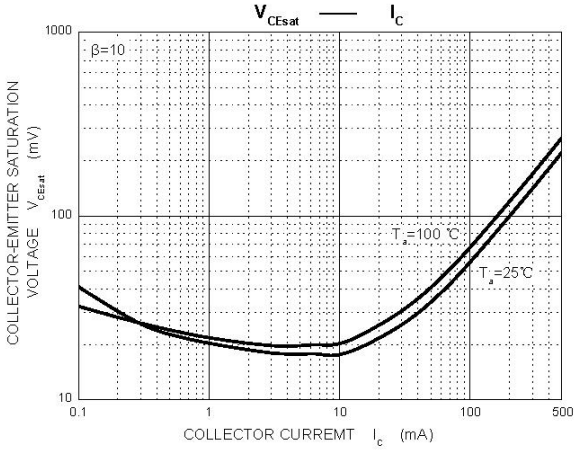
h_{FE} —— I_C



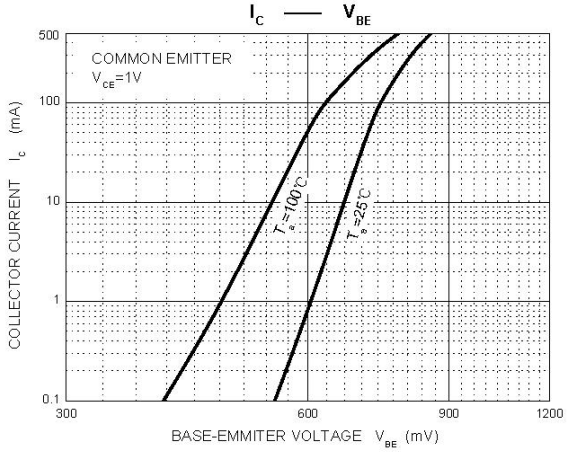
V_{BEsat} —— I_C



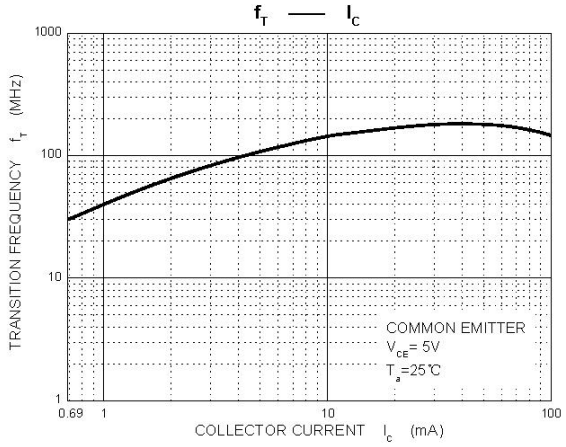
V_{CEsat} —— I_C



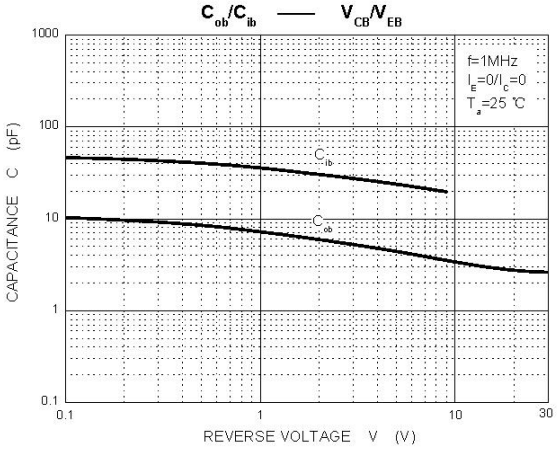
I_C —— V_{BE}



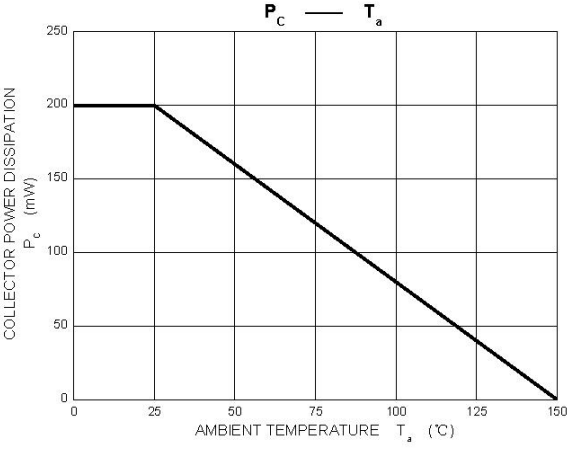
f_T —— I_C



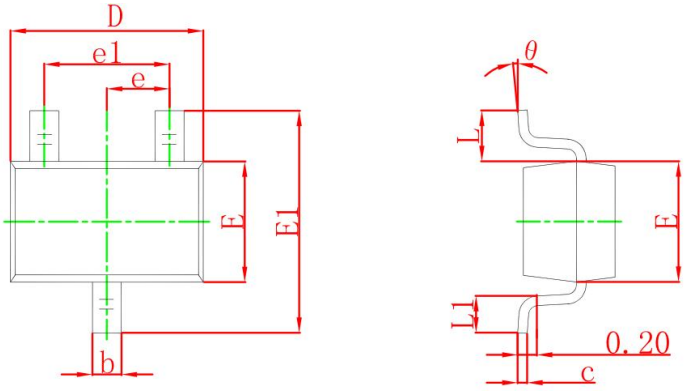
C_{ob}/C_{ib} —— V_{CB}/V_{EB}

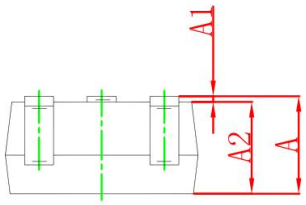


P_C —— T_a



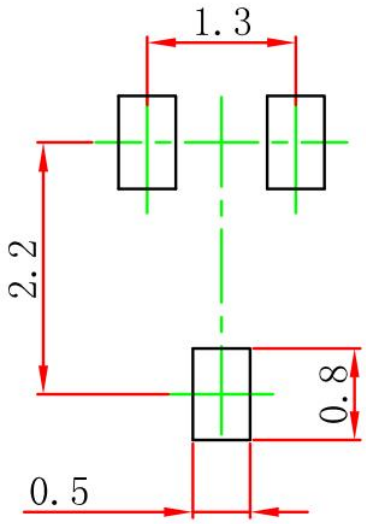
SOT-323 PACKAGE OUTLINE DIMENSIONS





Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	0.900	1.100	0.035	0.043
A1	0.000	0.100	0.000	0.004
A2	0.900	1.000	0.035	0.039
b	0.200	0.400	0.008	0.016
c	0.080	0.150	0.003	0.006
D	2.000	2.200	0.079	0.087
E	1.150	1.350	0.045	0.053
E1	2.150	2.450	0.085	0.096
e	0.650 TYP		0.026 TYP	
e1	1.200	1.400	0.047	0.055
L	0.525 REF		0.021 REF	
L1	0.260	0.460	0.010	0.018
θ	0°	8°	0°	8°

SOT-323 SUGGESTED PAD LAYOUT

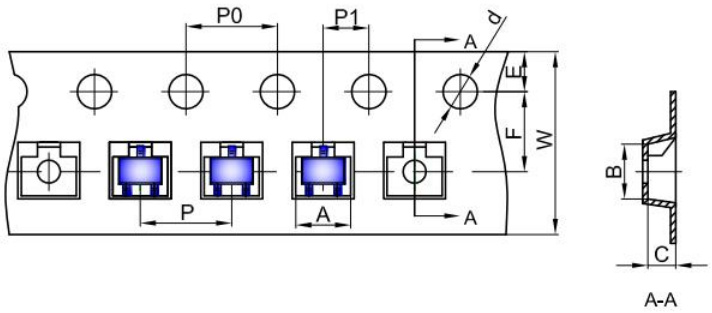


Note:

1. Controlling dimension in millimeters.
2. General tolerance: ±0.05mm.
3. The pad layout is for reference purpose only.

SOT-323 TAPE AND REEL

SOT-323 Embossed Carrier Tape

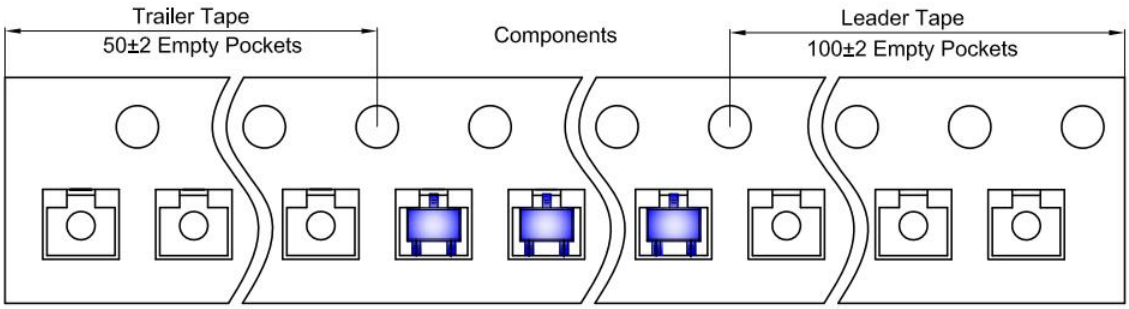


Packaging Description:

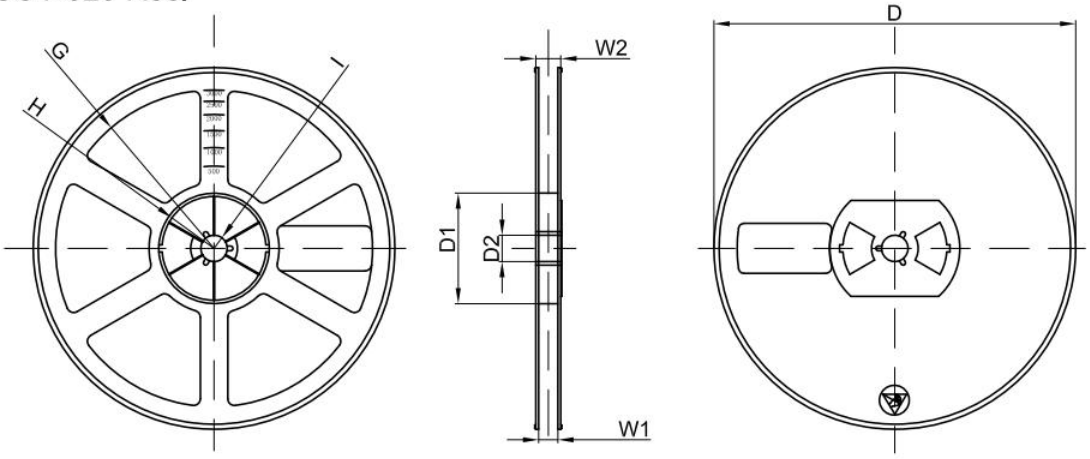
SOT-323 parts are shipped in tape. The carrier tape is made from a dissipative (carbon filled) polycarbonate resin. The cover tape is a multilayer film (Heat Activated Adhesive in nature) primarily composed of polyester film, adhesive layer, sealant, and anti-static sprayed agent. These reeled parts in standard option are shipped with 3,000 units per 7" or 17.8cm diameter reel. The reels are clear in color and is made of polystyrene plastic (anti-static coated).

Dimensions are in millimeter										
Pkg type	A	B	C	d	E	F	P0	P	P1	W
SOT-323	2.25	2.55	1.19	Ø1.55	1.75	3.50	4.00	4.00	2.00	8.00

SOT-323 Tape Leader and Trailer



SOT-323 Reel



Dimensions are in millimeter								
Reel Option	D	D1	D2	G	H	I	W1	W2
7"Dia	Ø178.00	54.40	13.00	R78.00	R25.60	R6.50	9.50	12.30

REEL	Reel Size	Box	Box Size(mm)	Carton	Carton Size(mm)	G.W.(kg)
3000 pcs	7 inch	45,000 pcs	203×203×195	180,000 pcs	438×438×220	

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