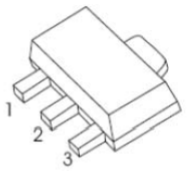
JIANGSU CHANGJING ELECTRONICS TECHNOLOGY CO., LTD.

AD-BCX51/52/53 Series Plastic-Encapsulated Transistor

AD-BCX51/52/53 series Transistor (PNP)

SOT-89-3L

1. BASE
2. COLLECTOR
3. EMITTER



FEATURES

- High collector current
- Low collector-emitter saturation voltage
- Complementary types: AD-BCX54/55/56 series (NPN)
- AEC-Q101 qualified

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

Parameter	Symbol	AD-BCX51*	AD-BCX52*	AD-BCX53*	Unit
Collector-base voltage	V_{CBO}	-45	-60	-100	V
Collector-emitter voltage	V_{CEO}	-45	-60	-80	V
Emitter-base voltage	V_{EBO}	-5			V
Collector continuous current	I_C	-1			A
Collector power dissipation	P_C	500			mW
Thermal resistance from junction to ambient	$R_{\theta JA}$	250			°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	AD-BCX51*	$V_{(BR)CBO}$	I_C = -0.1mA, I_E = 0A	-45	-	-	V
	AD-BCX52*			-60	-	-	
	AD-BCX53*			-100	-	-	
Collector-emitter breakdown voltage	AD-BCX51*	$V_{(BR)CEO}$ [1]	I_C = -10mA, I_B = 0A	-45	-	-	V
	AD-BCX52*			-60	-	-	
	AD-BCX53*			-80	-	-	
Base-emitter breakdown voltage		$V_{(BR)EBO}$	I_E = -100μA, I_C = 0A	-5	-	-	V
Collector-base cut-off current		I_{CBO}	V_{CB} = -30V, I_E = 0A	-	-	-0.1	μA
Emitter-base cut-off current		I_{EBO}	V_{EB} = -5V, I_C = 0A	-	-	-0.1	μA
DC current gain		$h_{FE(1)}$ [1]	V_{CE} = -2V, I_C = -5mA	63	-	-	-
		$h_{FE(2)}$ [1]	V_{CE} = -2V, I_C = -150mA	63	-	250	
		$h_{FE(3)}$ [1]	V_{CE} = -2V, I_C = -500mA	40	-	-	
Collector-emitter saturation voltage		$V_{CE(sat)}$ [1]	I_C = -500mA, I_B = -50mA	-	-	-0.5	V
Base-emitter voltage		V_{BE} [1]	I_C = -500mA, V_{CE} = -2V	-	-	-1	V
Transition frequency		f_T	V_{CE} = -5V, I_C = -10mA, f = 100MHz	-	50	-	MHz

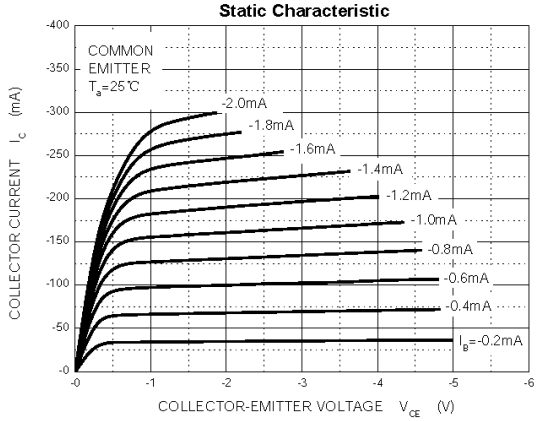
CLASSIFICATION OF $h_{FE(2)}$

RANK	AD-BCX51-10, AD-BCX52-10, AD-BCX53-10	AD-BCX51-16, AD-BCX52-16, AD-BCX53-16
RANGE	63 ~ 160	100 ~ 250
MARKING	$\bar{A}$C, $\bar{A}$G, $\bar{A}$K	$\bar{A}$D, $\bar{A}$M, $\bar{A}$L

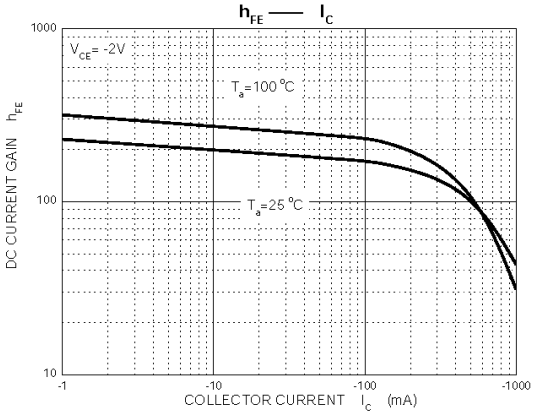
1) Maximum allowed temperature T_j = 25°C.
2) Measured with the device mounted on 1 inch^2 FR-4 board with 1oz. copper, in a still air environment with T_a = 25℃.
3) Pulse test.

TYPICAL CHARACTERISTICS

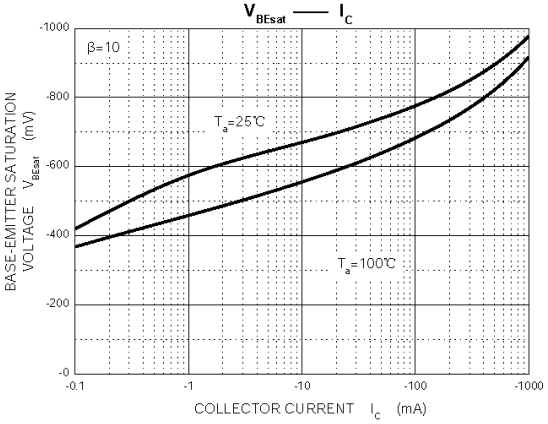
Static Characteristic



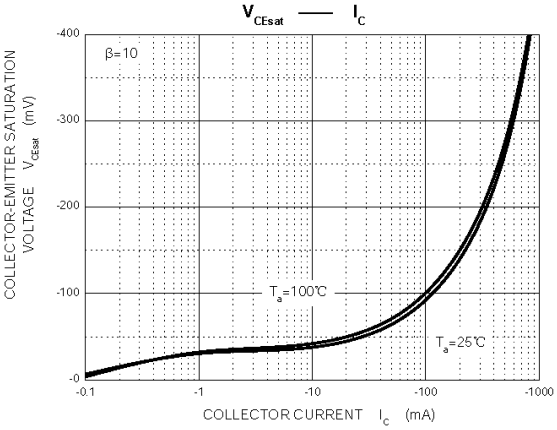
h_{FE} —— I_C



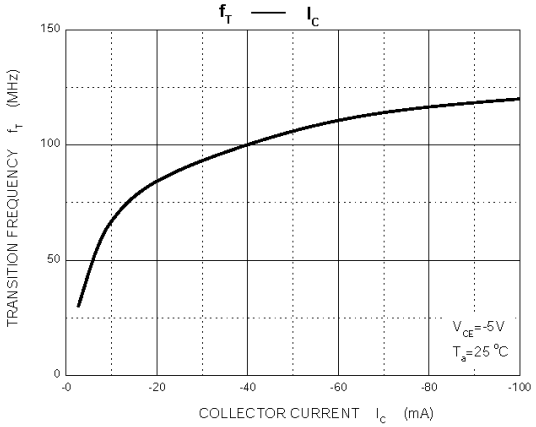
V_{BEsat} —— I_C



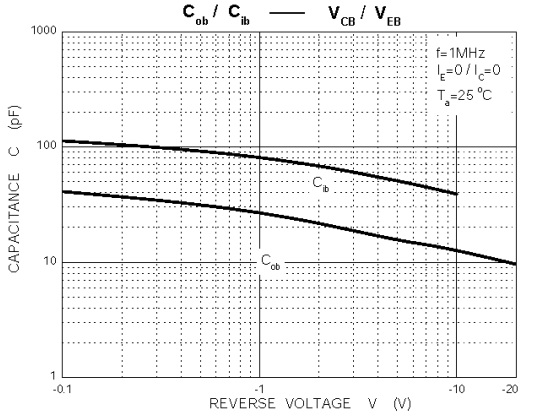
V_{CEsat} —— I_C



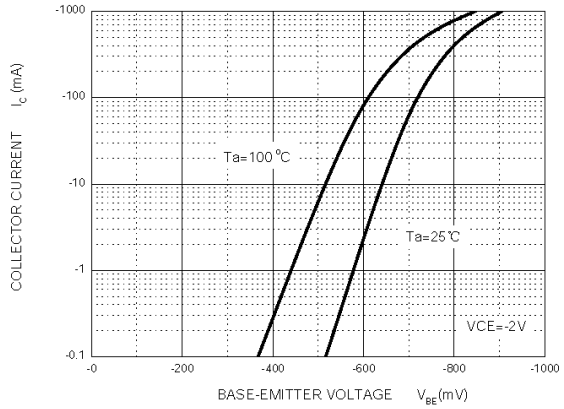
f_T —— I_C



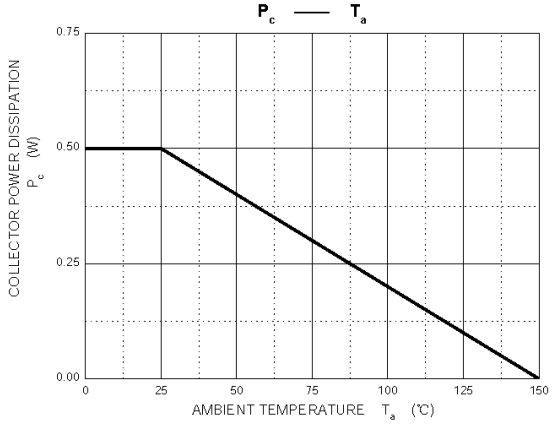
C_{ob} / C_{ib} —— V_{CB} / V_{EB}



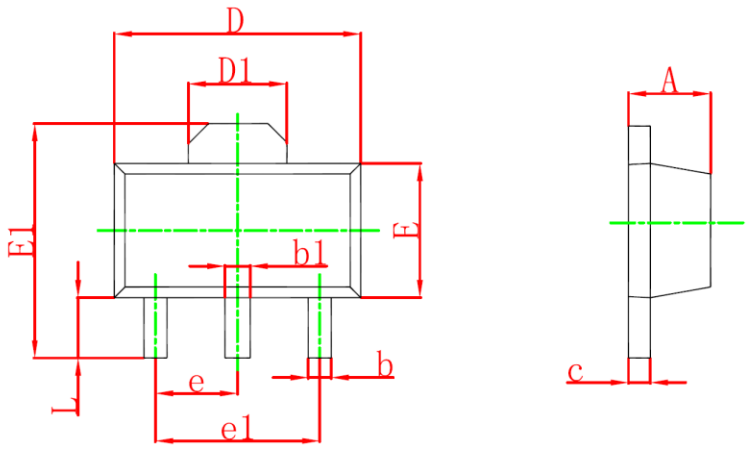
I_C —— V_{BE}



P_c —— T_a

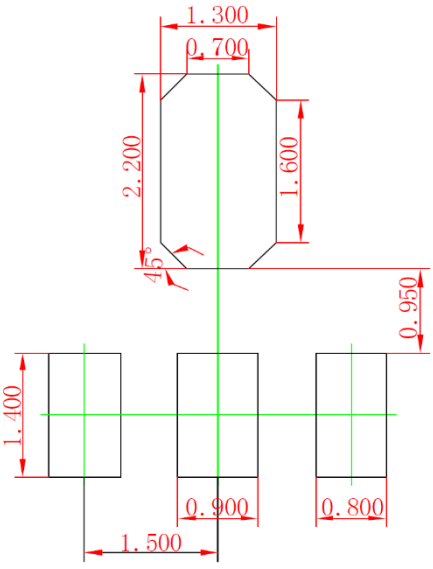


SOT-89-3L PACKAGE OUTLINE DIMENSIONS



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	1.400	1.600	0.055	0.063
b	0.320	0.520	0.013	0.020
b1	0.400	0.580	0.016	0.023
c	0.350	0.440	0.014	0.017
D	4.400	4.600	0.173	0.181
D1	1.550 REF.		0.061 REF.	
E	2.300	2.600	0.091	0.102
E1	3.940	4.250	0.155	0.167
e	1.500 TYP.		0.060 TYP.	
e1	3.000 TYP.		0.118 TYP.	
L	0.900	1.200	0.035	0.047

SOT-89-3L SUGGESTED PAD LAYOUT

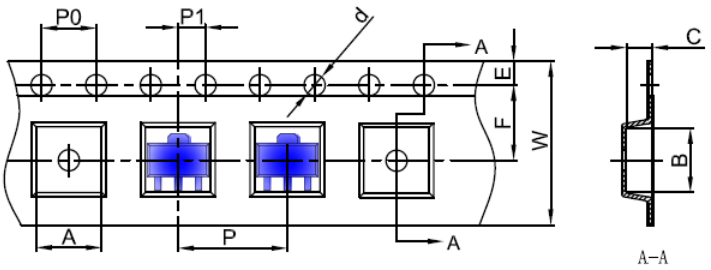


Note:

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

SOT-89-3L TAPE AND REEL

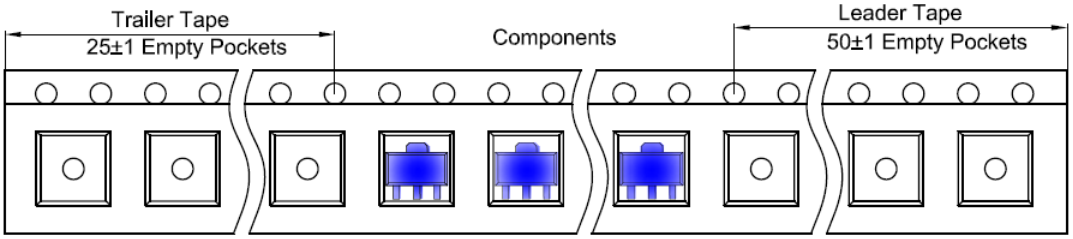
SOT-89-3L Embossed Carrier Tape



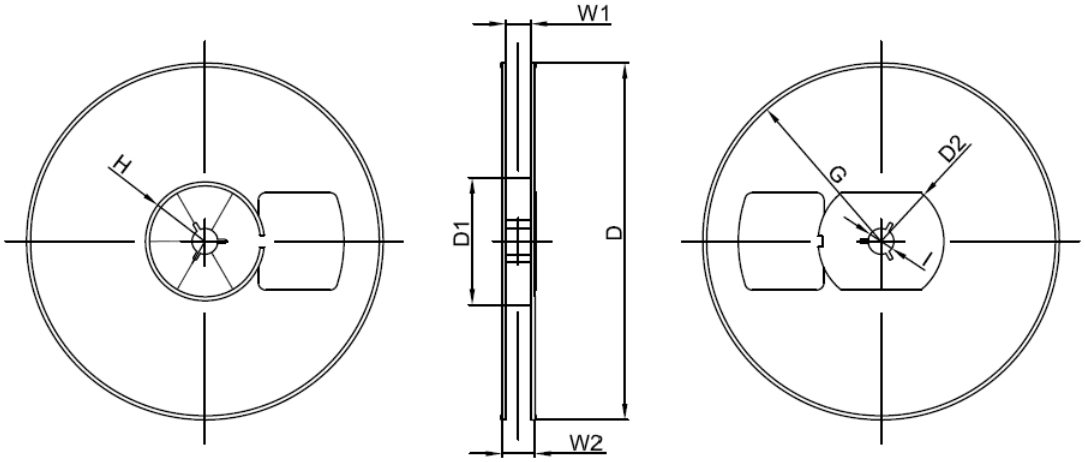
Packaging Description:
SOT-89-3L parts are shipped in tape. The carrier tape is made from a dissipative (carbon filled) polycarbonate resin. The cover tape is a multilayer film (Heat Activated Adhesive in nature) primarily composed of polyester film, adhesive layer, sealant, and anti-static sprayed agent. These reeled parts in standard option are shipped with 1,000 units per 7" or 18.0 cm 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-89-3L	4,85	4,45	1,85	Ø1,50	1,75	5,50	4,00	8,00	2,00	12,00

SOT-89-3L Tape Leader and Trailer



SOT-89-3L Reel



Dimensions are in millimeter								
Reel Option	D	D1	D2	G	H	I	W1	W2
7"Dia	Ø180.00	60.00	R32.00	R86.50	R30.00	Ø13.00	13.20	16.50

REEL	Reel Size	Box	Box Size(mm)	Carton	Carton Size(mm)	G.W.(kg)
1000 pcs	7 inch	10,000 pcs	203×203×195	40,000 pcs	438×438×220	

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