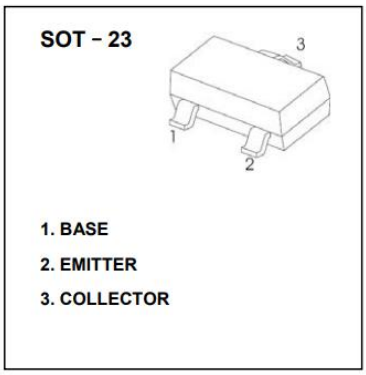
JIANGSU CHANGJING ELECTRONICS TECHNOLOGY CO., LTD.

AD-MMBT2907A Plastic-Encapsulated Transistor

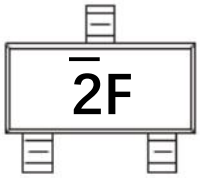
AD-MMBT2907A Transistor (PNP)



FEATURES

- Epitaxial planar die construction
- Complementary NPN type available (AD-MMBT2222A* series)
- AEC-Q101 qualified

MARKING



$\overline{2}$F = Device code

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

Parameter	Symbol	Value	Unit
Collector-base voltage	V_{CBO}	-60	V
Collector-emitter voltage	V_{CEO}	-60	V
Emitter-base voltage	V_{EBO}	-5	V
Collector continuous current	I_C	-600	mA
Collector power dissipation	P_C [1)]	250	mW
Thermal resistance from junction to ambient	$R_{\theta JA}$ [1)]	500	°C/W
Operating junction and storage temperature range	T_j, T_{stg}	-55 ~ 150	°C

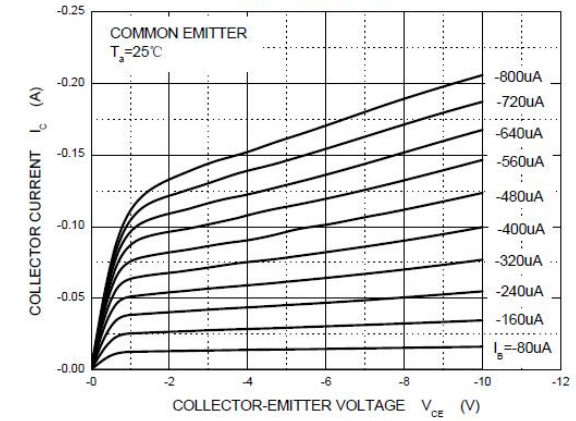
ELECTRICAL CHARACTERISTICS (T_j = 25°C unless otherwise specified)

Parameter	Symbol	Test condition	Min	Typ	Max	Unit
Collector-base breakdown voltage	$V_{(BR)CBO}$	I_C = -10μA, I_E = 0A	-60	-	-	V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	I_C = -10mA, I_B = 0A	-60	-	-	V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	I_E = -10μA, I_C = 0A	-5	-	-	V
Collector-emitter cut-off current	I_{CEX}	V_{CE} = -30V, $V_{BE\ (off)}$ = -0.5V	-	-	-50	nA
Collector-base cut-off current	I_{CBO}	V_{CB} = -50V, I_E = 0A	-	-	-20	
Base cut-off current	I_{EBO}	V_{EB} = -3V, IC = 0	-	-	-10	
DC current gain	$h_{FE(1)}$	V_{CE} = -10V, I_C = -150mA	100	-	300	-
	$h_{FE(2)}$	V_{CE} = -10V, I_C = -0.1mA	75	-	-	
	$h_{FE(3)}$	V_{CE} = -10V, I_C = -1mA	100	-	-	
	$h_{FE(4)}$	V_{CE} = -10V, I_C = -10mA	100	-	-	
	$h_{FE(5)}$	V_{CE} = -10V, I_C = -500mA	50	-	-	
Collector-emitter saturation voltage	$V_{CE(sat)}$	I_C = -150mA, I_B = -15mA	-	-	-0.4	V
		I_C = -500mA, I_B = -50mA	-	-	-1.6	
Base-emitter saturation voltage	$V_{BE(sat)}$	I_C = -150mA, I_B = -15mA	-	-	-1.3	
		I_C = -500mA, I_B = -50mA	-	-	-2.6	
Transition frequency	f_T	V_{CE} = -20V, I_C = -50mA, f = 100MHz	200	-	-	MHz
Delay time	t_d	V_{CE} = -30V,I_C = -150mA,	-	-	10	ns
Rise time	t_r	I_{B1} = -15mA	-	-	25	
Storage time	t_s	V_{CE} = -6V,I_C = -150mA,	-	-	225	
Fall time	t_f	I_{B1} = - I_{B2} = - 15mA	-	-	60	

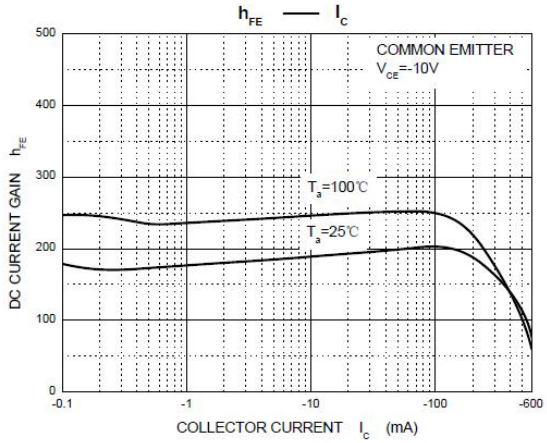
1) Measured with the device mounted on 1 inch^2 FR-4 board with no copper, in a still air environment with T_a = 25℃.

TYPICAL CHARACTERISTICS

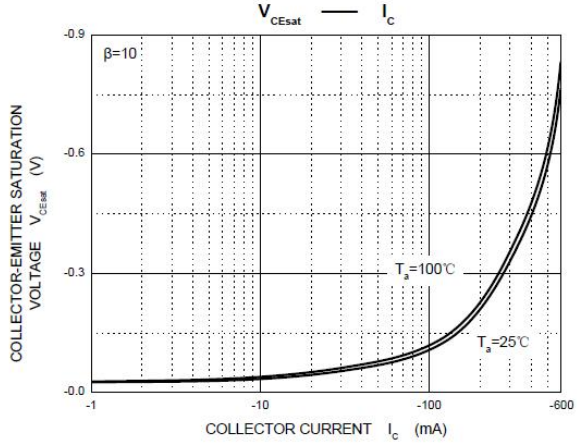
Static Characteristic



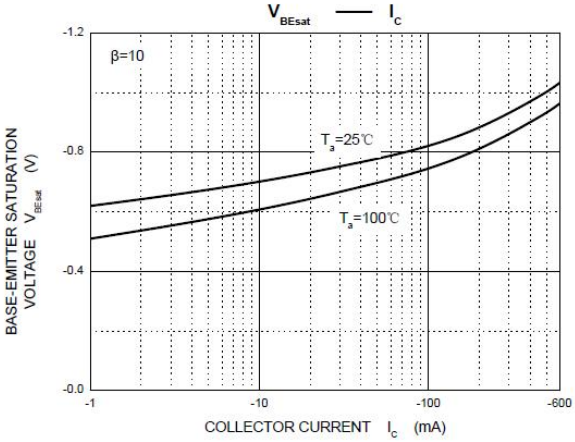
h_{FE} —— I_C



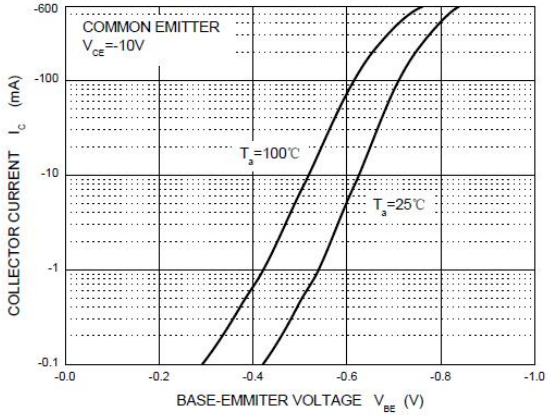
V_{CEsat} —— I_C



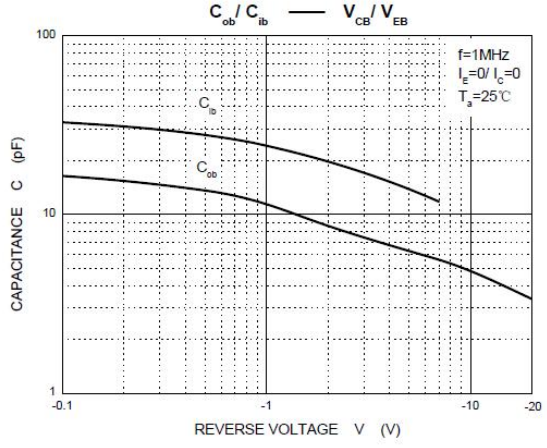
V_{BEsat} —— I_C



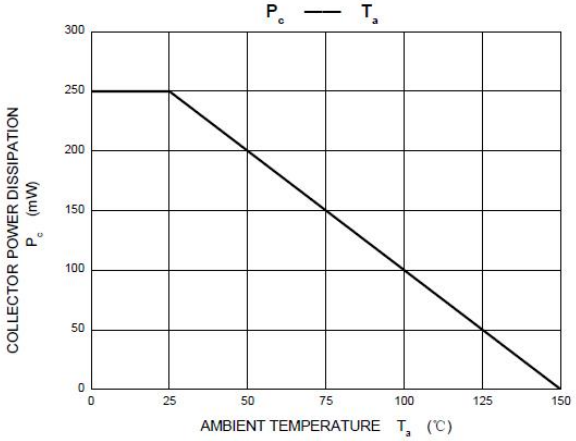
I_C —— V_{BE}



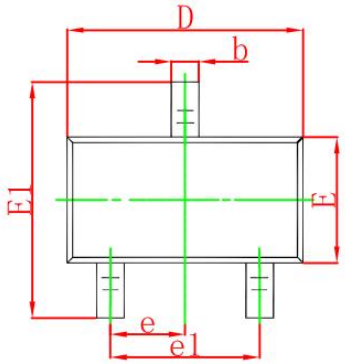
C_{ob} / C_{ib} —— V_{CB} / V_{EB}

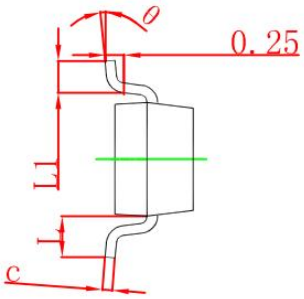


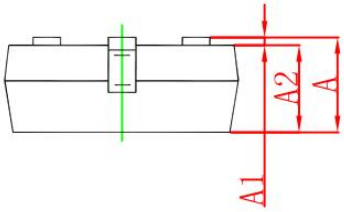
P_c —— T_a



SOT-23 PACKAGE OUTLINE DIMENSIONS

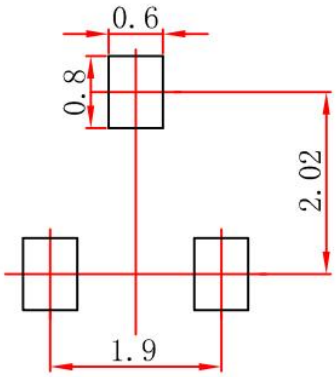






Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	0.900	1.150	0.035	0.045
A1	0.000	0.100	0.000	0.004
A2	0.900	1.050	0.035	0.041
b	0.300	0.500	0.012	0.020
c	0.080	0.150	0.003	0.006
D	2.800	3.000	0.110	0.118
E	1.200	1.400	0.047	0.055
E1	2.250	2.550	0.089	0.100
e	0.950 TYP		0.037 TYP	
e1	1.800	2.000	0.071	0.079
L	0.550 REF		0.022 REF	
L1	0.300	0.500	0.012	0.020
θ	0°	8°	0°	8°

SOT-23 SUGGESTED PAD LAYOUT

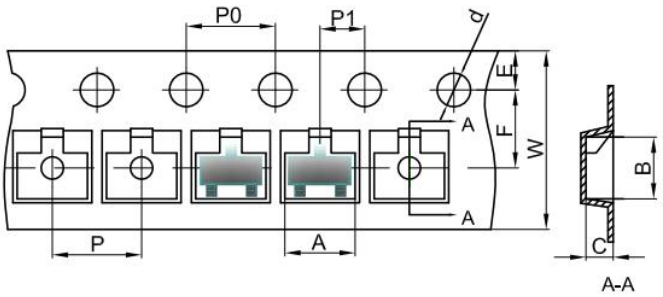


Note:

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

SOT-23 TAPE AND REEL

SOT-23 Embossed Carrier Tape

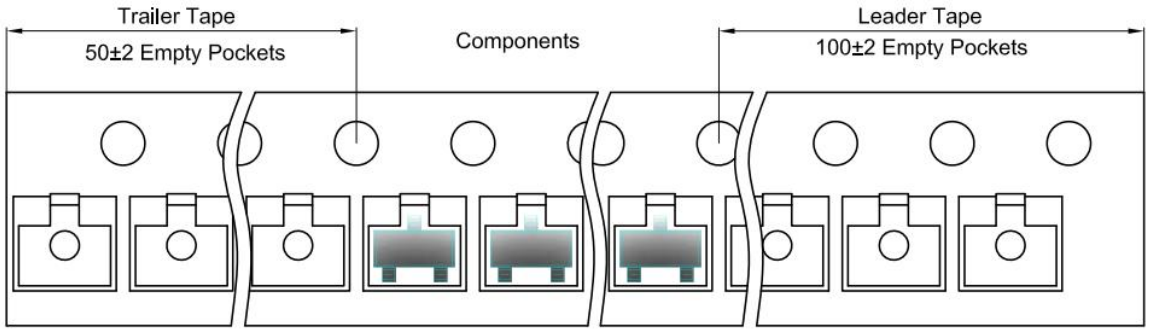


Packaging Description:

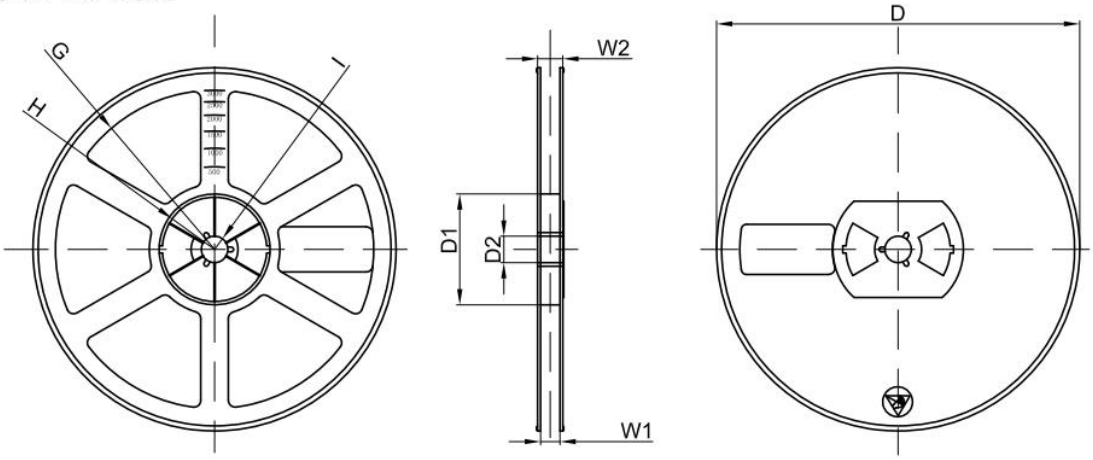
SOT-23 parts are shipped in tape. The carrier tape is made from a dissipative (carbon filled) polycarbonate resin. The cover tape is a multilayer film (Heat Activated Adhesive in nature) primarily composed of polyester film, adhesive layer, sealant, and anti-static sprayed agent. These reeled parts in 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-23	3.15	2.77	1.22	Ø1.50	1.75	3.50	4.00	4.00	2.00	8.00

SOT-23 Tape Leader and Trailer



SOT-23 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	

PUBLISHED BY

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