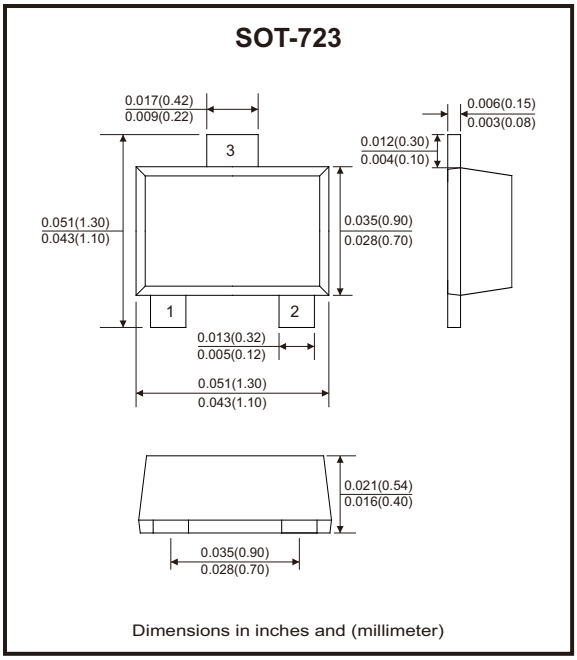
Transistor

AMMBT2907AM-HF (PNP)

RoHS Device
Halogen Free

Features

- Ultra-small surface mount package.
- AEC-Q101 Qualified.

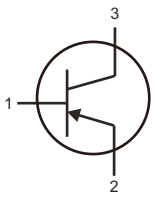


Mechanical data

- Case: SOT-723, molded plastic.
- Molding compound: UL flammability classification rating 94V-0.
- Terminals: Tin-plated, solderability per MIL-STD-202, method 208.
- Mounting position: Any.

Circuit Diagram

1. Base
2. Emitter
3. Collector



Maximum Ratings (at Ta=25°C unless otherwise noted)

Parameter	Symbol	Value	Unit
Collector-base breakdown voltage	V_{CBO}	-60	V
Collector-emitter breakdown voltage	V_{CEO}	-60	V
Emitter-base breakdown voltage	V_{EBO}	-5	V
Collector current-continuous	I_C	-0.6	A
Power dissipation @T_A = 25°C (Note 1)	P_D	265	mW
Thermal resistance junction to ambient (Note 1)	$R_{\theta JA}$	417	°C/W
Operating junction temperature range	T_J	-55 to +150	°C
Storage temperature range	T_{STG}	-55 to +150	°C

Note: 1. FR-5 = 1.0 x 0.75 x 0.062 in.

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

Parameter	Conditions	Symbol	Min	Typ	Max	Unit
Collector-base breakdown voltage	I_C = -10μA, I_E = 0	$V_{(BR)CBO}$	-60			V
Collector-emitter breakdown voltage	I_C = -10mA, I_B = 0	$V_{(BR)CEO}$	-60			V
Emitter-base breakdown voltage	I_E = -10μA, I_C = 0	$V_{(BR)EBO}$	-5			V
Collector cut-off current	V_{CB} = -50V, I_E = 0	I_{CBO}			-10	nA
Collector cut-off current	V_{CE} = -30V, $V_{EB(OFF)}$ = -0.5V	I_{CEX}			-50	nA
Base cut-off current	V_{CE} = -30V, $V_{EB(OFF)}$ = -0.5V	I_{BL}			-50	nA
DC current gain	V_{CE} = -10V, I_C = -0.1mA	$h_{FE(1)}$	75			
	V_{CE} = -10V, I_C = -1mA	$h_{FE(2)}$	100			
	V_{CE} = -10V, I_C = -10mA	$h_{FE(3)}$	100			
	V_{CE} = -10V, I_C = -150mA	$h_{FE(4)}$	100		300	
	V_{CE} = -10V, I_C = -500mA	$h_{FE(5)}$	50			
Collector-emitter saturation voltage	I_C = -500mA, I_B = -50mA	$V_{CE(sat)}$			-1.6	V
	I_C = -150mA, I_B = -15mA				-0.4	
Base-emitter saturation voltage	I_C = -500mA, I_B = -50mA	$V_{BE(sat)}$			-2.6	V
	I_C = -150mA, I_B = -15mA				-1.3	
Transition frequency	I_C = -50mA, V_{CE} = -20V, f = 100MHz	f_T	200			MHz
Collector output capacitance	V_{CB} = -10V, I_E = 0, f = 1MHz	C_{OBO}		6.5		pF
Input capacitance	V_{EB} = -2V, I_C = 0, f = 1MHz	C_{IBO}			8	pF
Delay time	V_{CC} = -30V, I_C = -150mA, I_{B1} = -15mA	t_d			10	ns
Rise time		t_r			40	ns
Storage time	V_{CC} = -6V, I_C = -150mA, I_{B1} = I_{B2} = -15mA	t_s			225	ns
Fall time		t_f			60	ns

Rating and Characteristic Curves (AMMBT2907AM-HF)

Fig.1 - h_{FE} vs. I_C

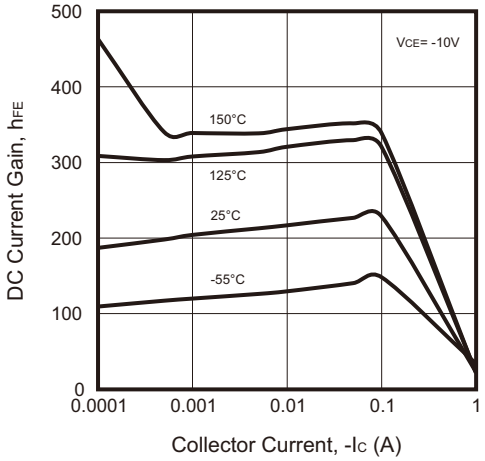


Fig.2 - $V_{CE(sat)}$ vs. I_C

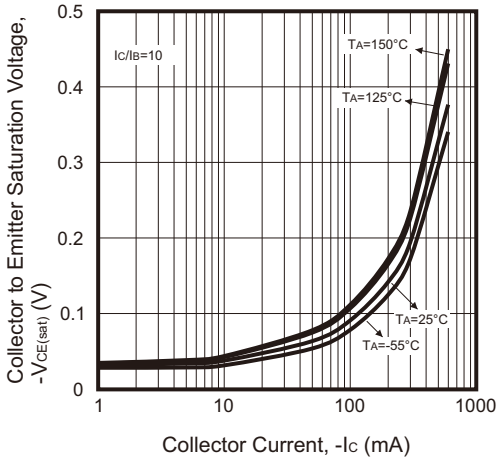


Fig.3 - $V_{BE(sat)}$ vs. I_C

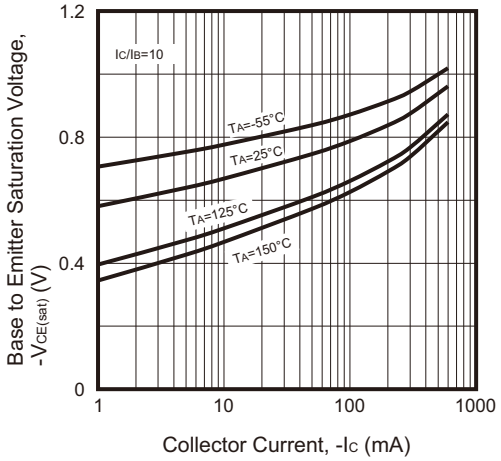
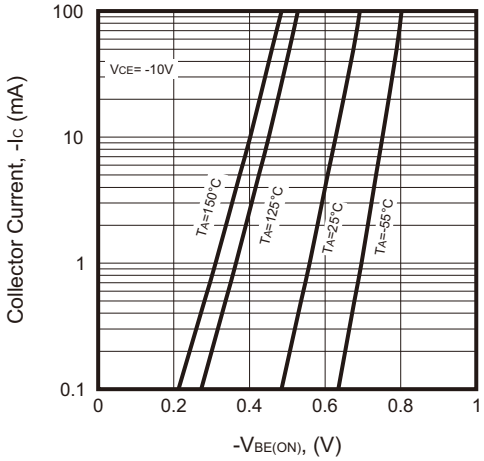
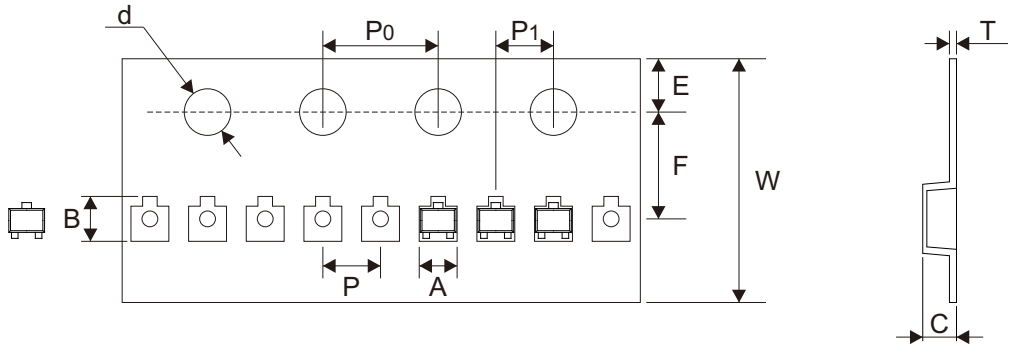
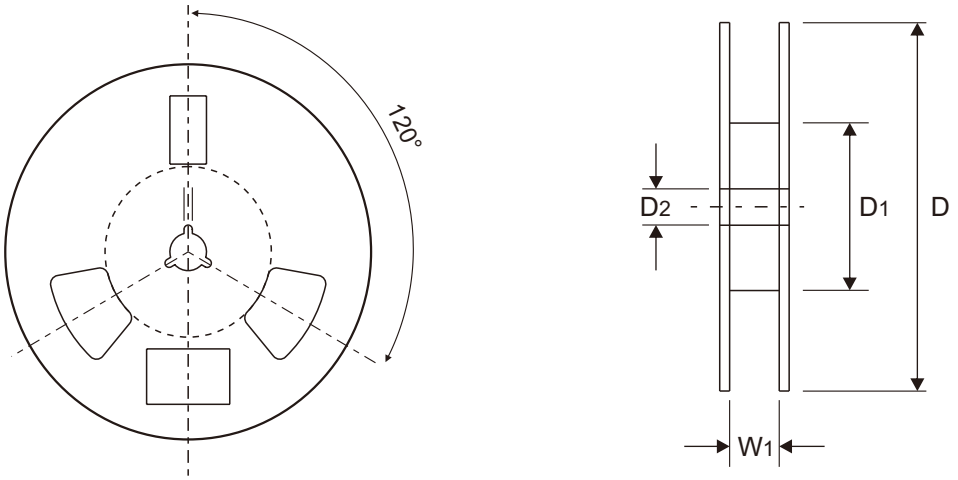


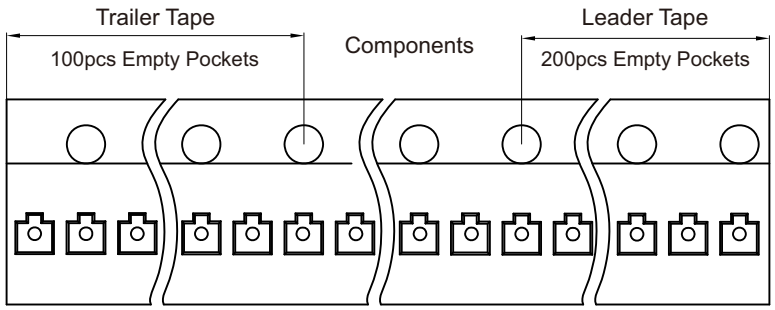
Fig.4 - $V_{BE(ON)}$ vs. I_C



Reel Taping Specification





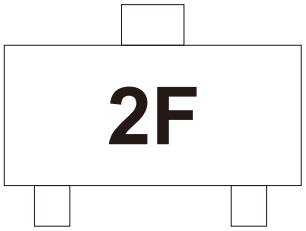


	SYMBOL	A	B	C	d	D	D1	D2
SOT-723	(mm)	1.31 ± 0.05	1.45 ± 0.05	0.61 ± 0.05	1.50 ± 0.10	178.00 ± 1.00	54.00 ± 0.50	13.00 ± 0.50
	(inch)	0.052 ± 0.002	0.057 ± 0.002	0.024 ± 0.002	0.059 ± 0.004	7.008 ± 0.039	2.126 ± 0.020	0.512 ± 0.020

	SYMBOL	E	F	P	P0	P1	T	W	W1
SOT-723	(mm)	1.75 ± 0.10	3.50 ± 0.05	2.00 ± 0.05	4.00 ± 0.10	2.00 ± 0.05	0.20 ± 0.02	8.00 + 0.30 − 0.10	9.50 ± 1.00
	(inch)	0.069 ± 0.004	0.138 ± 0.002	0.079 ± 0.002	0.157 ± 0.004	0.079 ± 0.002	0.008 ± 0.001	0.315 + 0.012 − 0.004	0.374 ± 0.039

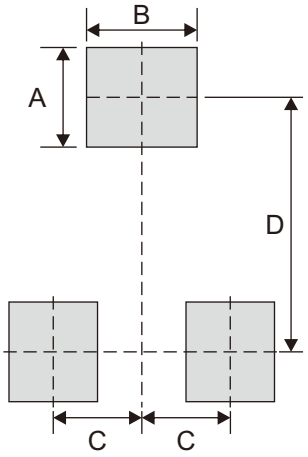
Marking Code

Part Number	Marking Code
AMMBT2907AM-HF	2F



Suggested P.C.B. PAD Layout

SIZE	SOT-723	
	(mm)	(inch)
A	0.45	0.018
B	0.50	0.020
C	0.40	0.016
D	1.15	0.045



Standard Packaging

Case Type	REEL PACK	
	REEL (pcs)	Reel Size (inch)
SOT-723	10,000	7