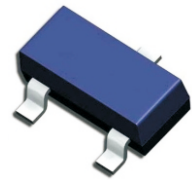


MMBT3906-HF (PNP)

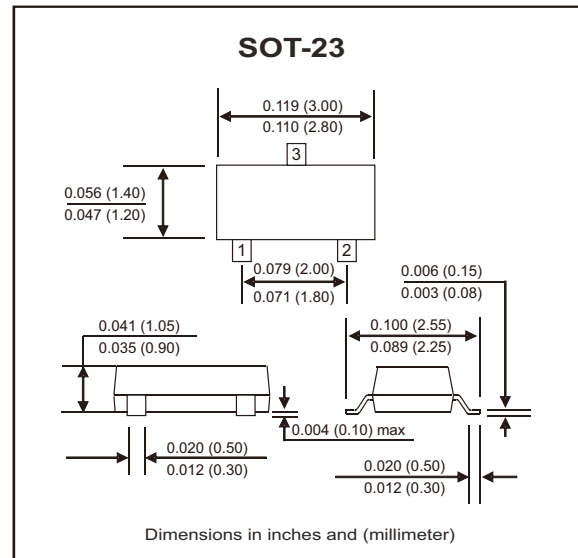
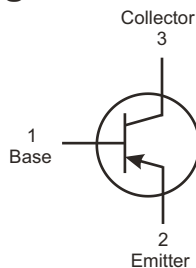
RoHS Device
Halogen Free



Features

- Epitaxial planar die construction
- As complementary type, the NPN transistor MMBT3904-HF is recommended

Circuit Diagram



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

Parameter	Symbol	Min	Typ	Max	Unit
Collector-Base voltage	V_{CBO}			-40	V
Collector-Emitter voltage	V_{CEO}			-40	V
Emitter-Base voltage	V_{EBO}			-5	V
Collector current-continuous	I_C			-0.2	A
Collector dissipation	P_C			0.3	W
Storage temperature and junction temperature	T_{STG}, T_J	-55		+150	°C

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

Parameter	Conditions	Symbol	Min	Max	Unit
Collector-Base breakdown voltage	$I_C = -100\mu A, I_E = 0$	$V_{(BR)CBO}$	-40		V
Collector-Emitter breakdown voltage	$I_C = -1mA, I_B = 0$	$V_{(BR)CEO}$	-40		V
Emitter-Base breakdown voltage	$I_E = -100\mu A, I_C = 0$	$V_{(BR)EBO}$	-5		V
Collector cut-off current	$V_{CB} = -40V, I_E = 0$	I_{CBO}		-0.1	μA
Collector cut-off current	$V_{CE} = -40V, I_B = 0$	I_{CEO}		-0.1	μA
Emitter cut-off current	$V_{EB} = -5V, I_C = 0$	I_{EBO}		-0.1	μA
DC current gain	$V_{CE} = -1V, I_C = -10mA$	$h_{FE(1)}$	100	300	
	$V_{CE} = -1V, I_C = -50mA$	$h_{FE(2)}$	60		
Collector-Emitter saturation voltage	$I_C = -50mA, I_B = -5mA$	$V_{CE(sat)}$		-0.3	V
Base-Emitter saturation voltage	$I_C = -50mA, I_B = -5mA$	$V_{BE(sat)}$		-0.95	V
Transition frequency	$V_{CE} = -20V, I_C = -10mA$ $f = 100MHz$	f_T	250		Mhz
Delay time	$V_{CC} = -3.0V, V_{BE} = -0.5V$	t_d		35	nS
Rise time	$I_C = -10mA, I_{B1} = -1.0mA$	t_r		35	nS
Storage time	$V_{CC} = -3.0V_{dc}, I_C = -10mA$	t_s		225	nS
Fall time	$I_{B1} = I_{B2} = -1.0mA$	t_f		75	nS

Company reserves the right to improve product design, functions and reliability without notice.

REV:C

RATING AND CHARACTERISTIC CURVES (MMBT3906-HF)

Fig.1- Static Characteristic

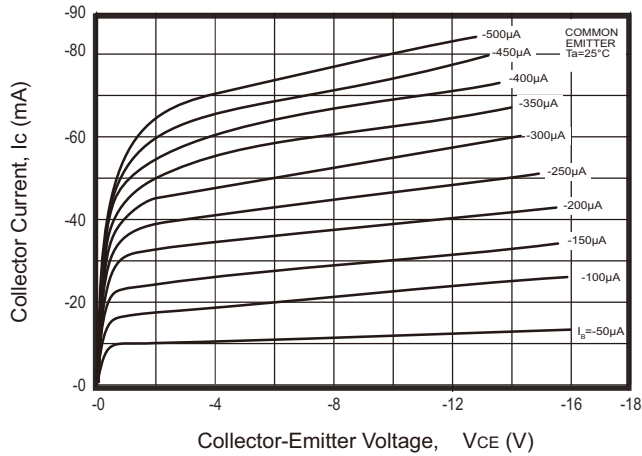


Fig.2- $h_{FE} - I_c$

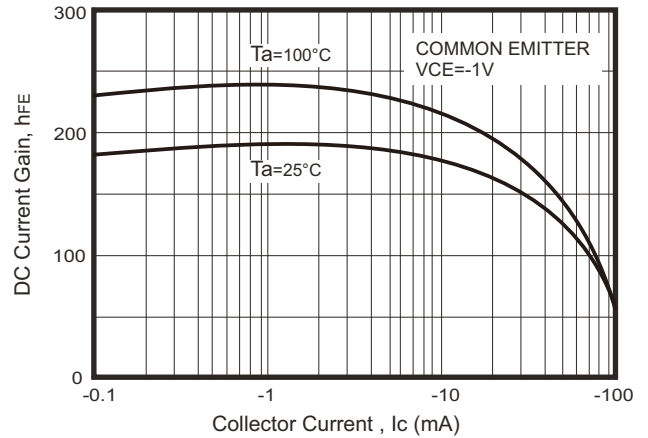


Fig. 3- $V_{CEsat} - I_c$

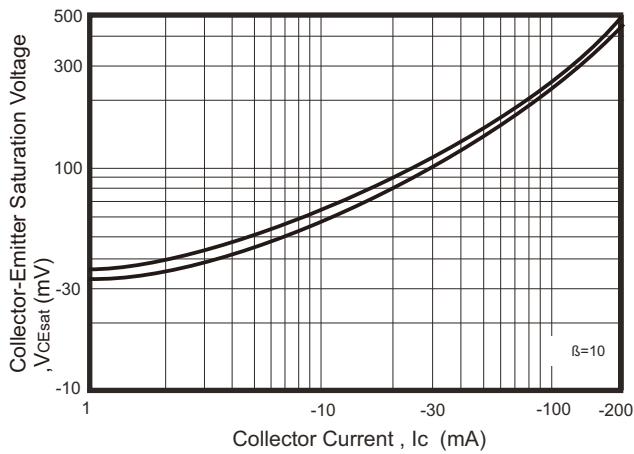


Fig. 4- $V_{BEsat} - I_c$

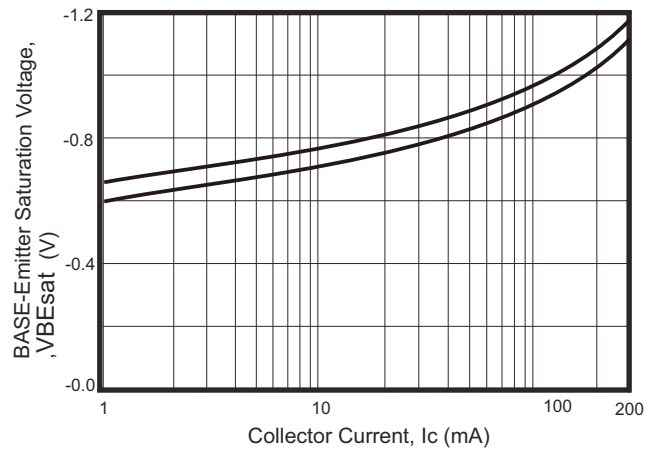


Fig. 5- $I_c - V_{BE}$

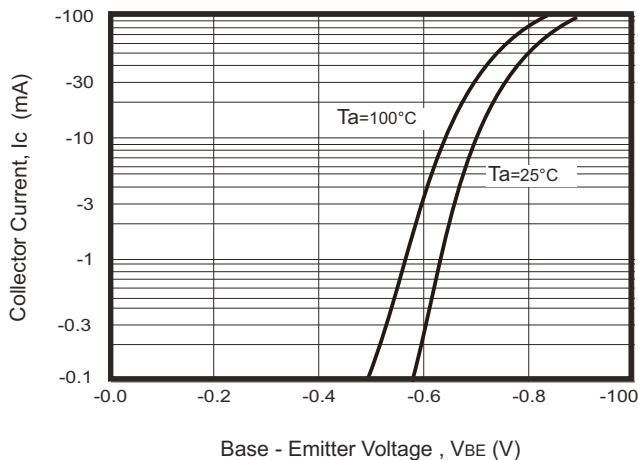
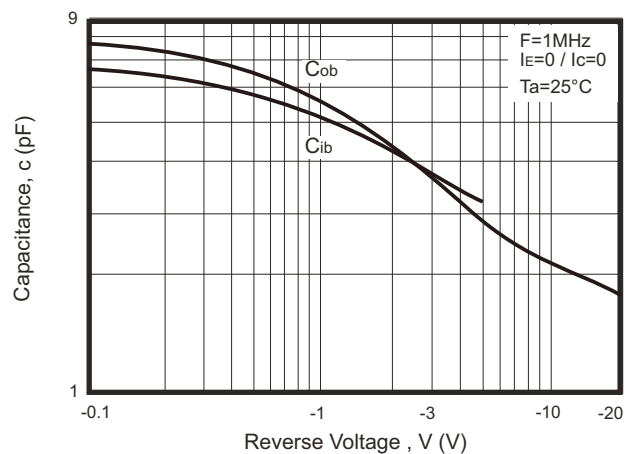


Fig. 6- $C_{ob}/C_{ib} - V_{CB}/V_{EB}$



RATING AND CHARACTERISTIC CURVES (MMBT3906-HF)

Fig. 7- f_T — I_C

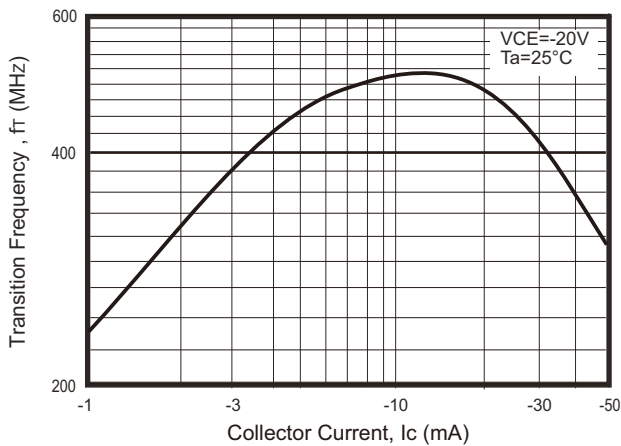
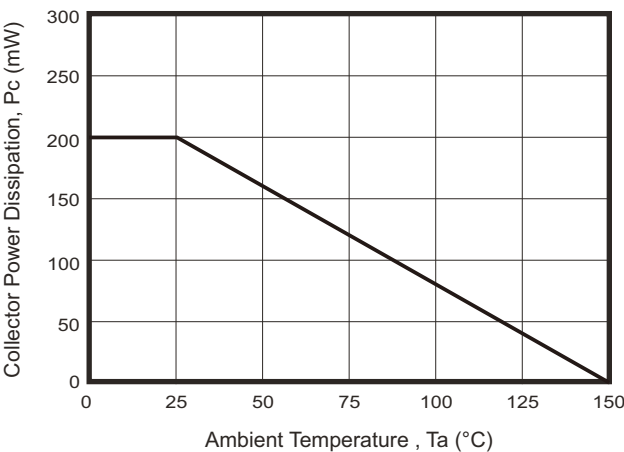
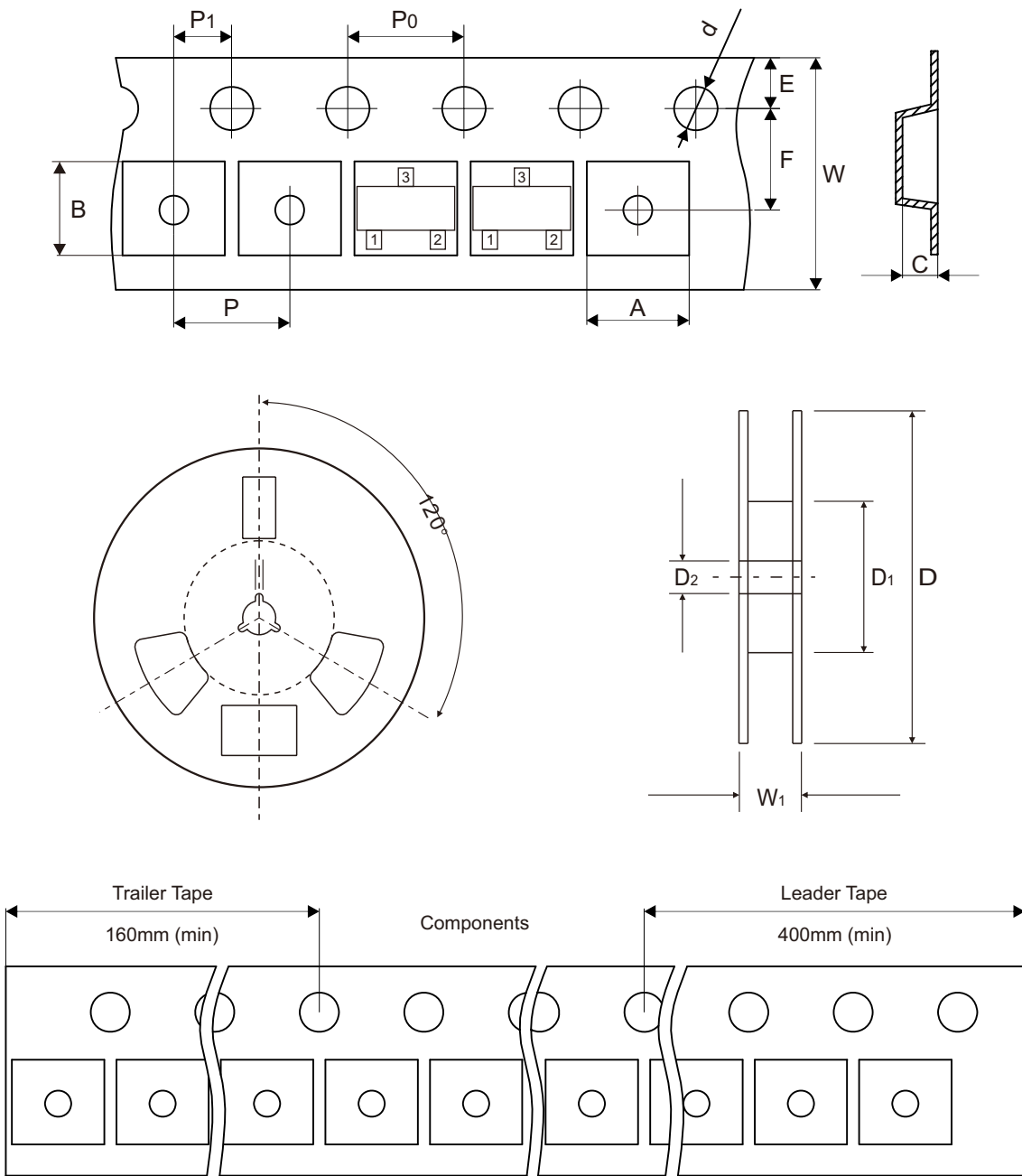


Fig. 8- P_C — T_a



Reel Taping Specification

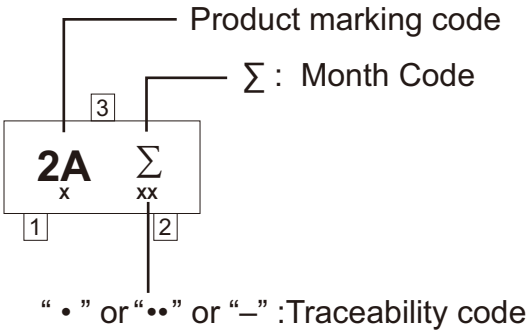


SOT-23	SYMBOL	A	B	C	d	D	D1	D2
	(mm)	3.15 ± 0.10	2.77 ± 0.10	1.22 ± 0.10	1.50 ± 0.10	178 ± 1.00	54.40 ± 0.40	13.00 ± 0.20
	(inch)	0.124 ± 0.004	0.109 ± 0.004	0.048 ± 0.004	0.059 ± 0.004	7.008 ± 0.039	2.142 ± 0.016	0.512 ± 0.008

SOT-23	SYMBOL	E	F	P	P0	P1	W	W1
	(mm)	1.75 ± 0.10	3.50 ± 0.05	4.00 ± 0.10	4.00 ± 0.10	2.00 ± 0.10	8.00 ± 0.30 / - 0.10	9.50 ± 1.00
	(inch)	0.069 ± 0.004	0.138 ± 0.002	0.157 ± 0.004	0.157 ± 0.004	0.079 ± 0.004	0.315 ± 0.012 / - 0.004	0.374 ± 0.039

Marking Code

Part Number	Marking Code	
MMBT3906-HF	2A	2A Σ



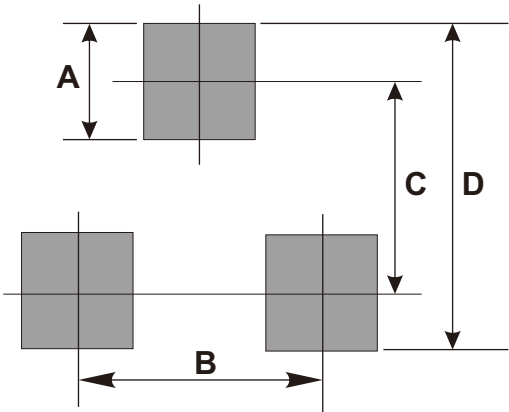
Month Code:

Month	Odd Year (per A.D.)	Even Year (per A.D.)
Jan	1	E
Feb	2	F
Mar	3	H
Apr	4	J
May	5	K
Jun	6	L

Month	Odd Year (per A.D.)	Even Year (per A.D.)
Jul	7	N
Aug	8	P
Sep	9	U
Oct	T	X
Nov	V	Y
Dec	C	Z

Suggested PAD Layout

SIZE	SOT-23	
	(mm)	(inch)
A	0.80	0.031
B	1.90	0.075
C	2.02	0.080
D	2.82	0.111



Standard Packaging

Case Type	Qty per Reel	Reel Size
	(Pcs)	(inch)
SOT-23	3000	7