



MMBT3906WH

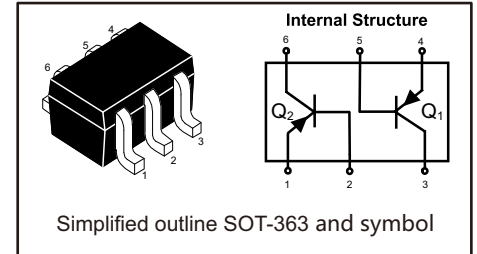
PNP TRANSISTOR

FEATURES

- As complementary type, the NPN transistor MMBT3904WH is Recommended
- Epitaxial planar die construction

PINNING

PIN	DESCRIPTION
1 / 4	EMITTER
2 / 5	BASE
3 / 6	COLLECTOR



MAXIMUM RATINGS (Ta =25°C unless otherwise noted)

Parameter	Symbol	Value	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	-200	mA
Collector Power Dissipation	P_C	200	mW
Thermal Resistance From Junction To Ambient	$R_{\theta JA}$	625	°C/W
Operation Junction and Storage Temperature Range	T_J, T_{stg}	-55~ +150	°C

ELECTRICAL CHARACTERISTICS (TA = 25°C unless otherwise noted.)

Parameter	Symbol	Test conditions	Min	Max	Unit
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C = -10\mu A, I_E = 0$	-40		V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C = -1\text{ mA}, I_B = 0$	-40		V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E = -10\mu A, I_C = 0$	-5		V
Collector cut-off current	I_{CBO}	$V_{CB} = -40V, I_E = 0$		-100	nA
Collector cut-off current	I_{CEX}	$V_{CE} = -30V, V_{EB} = -3V$		-50	nA
Emitter cut-off current	I_{EBO}	$V_{EB} = -5V, I_C = 0$		-100	nA
DC current gain	h_{FE1}	$V_{CE} = -1V, I_C = -10\text{mA}$	100	300	
	h_{FE2}	$V_{CE} = -1V, I_C = -50\text{mA}$	60		
	h_{FE3}	$V_{CE} = -2V, I_C = -100\text{mA}$	30		
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = -50\text{mA}, I_B = -5\text{mA}$		-0.3	V
Base-emitter saturation voltage	$V_{BE(sat)}$	$I_C = -50\text{mA}, I_B = -5\text{mA}$		-0.95	V
Transition frequency	f_T	$V_{CE} = -20V, I_C = -10\text{mA}, f = 100\text{MHz}$	300		MHz
Delay time	t_d	$V_{CC} = -3V, V_{BE} = 0.5V$ $I_C = -10\text{mA}, I_{B1} = I_{B2} = -1\text{mA}$		35	ns
Rise time	t_r			35	ns
Storage time	t_s	$V_{CC} = -3V, I_C = -10\text{mA}$ $I_{B1} = I_{B2} = -1\text{mA}$		225	ns
Fall time	t_f			75	ns



TYPICAL CHARACTERISTICS

Fig 1. Static characteristics

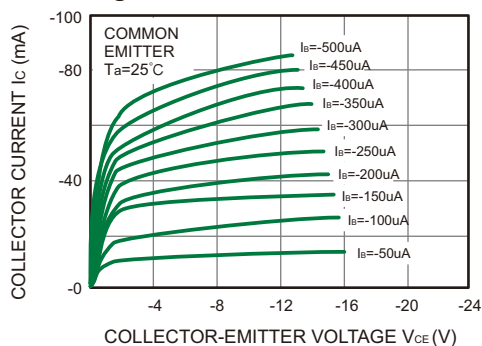


Fig 2. P_C — T_a

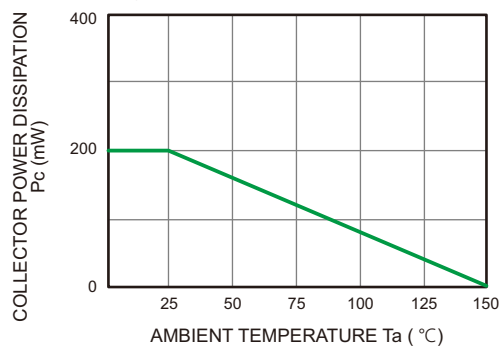


Fig 3. C_{ob} / C_{ib} — V_{CB} / V_{EB}

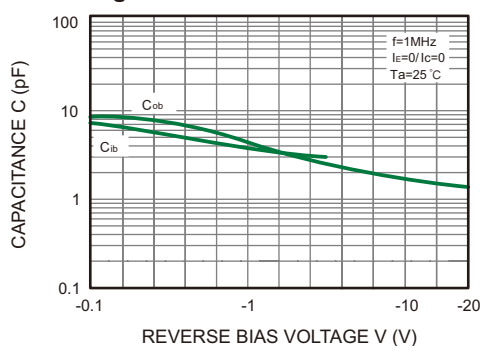


Fig 4. V_{CEsat} — I_C

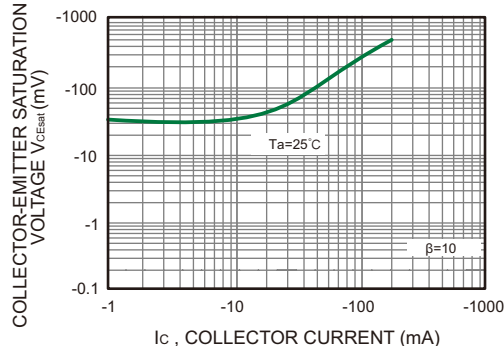


Fig 5. h_{FE} — I_C

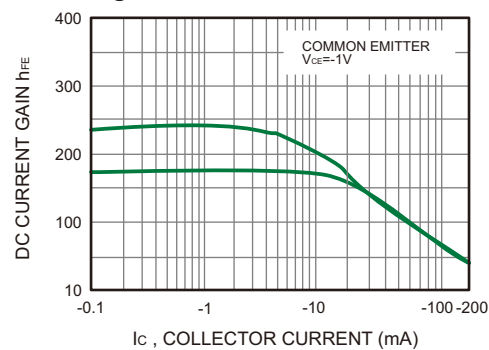


Fig 6. V_{BEsat} — I_C

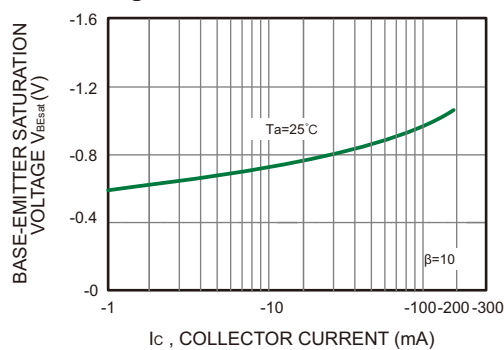


Fig 7. I_C — V_{BE}

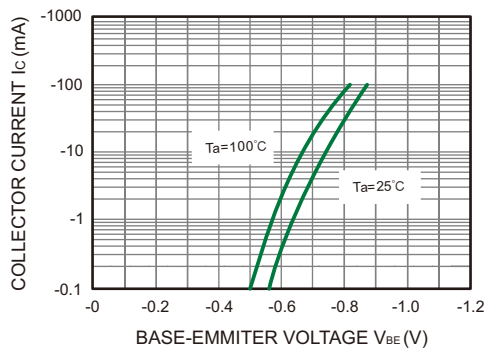
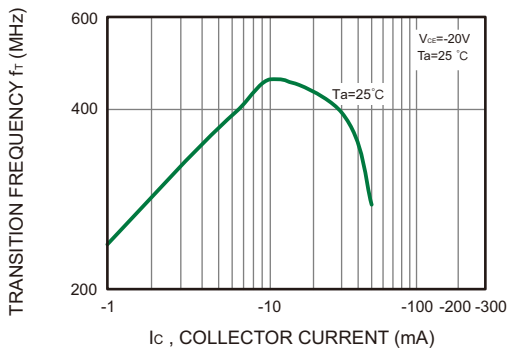
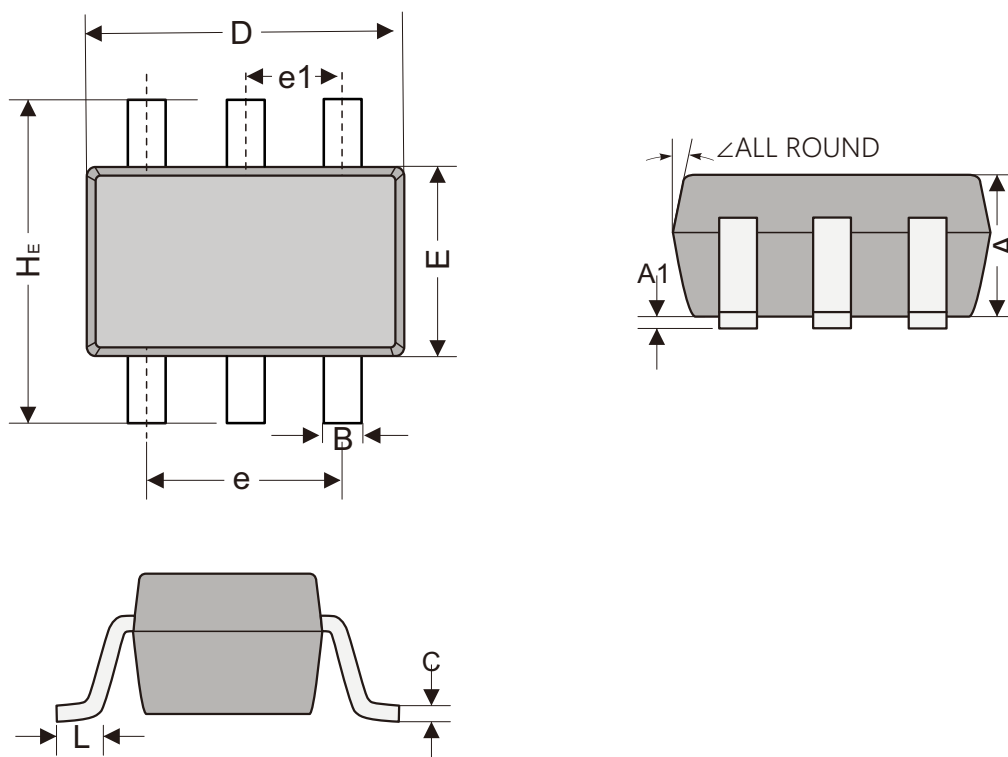


Fig 8. f_T — I_C





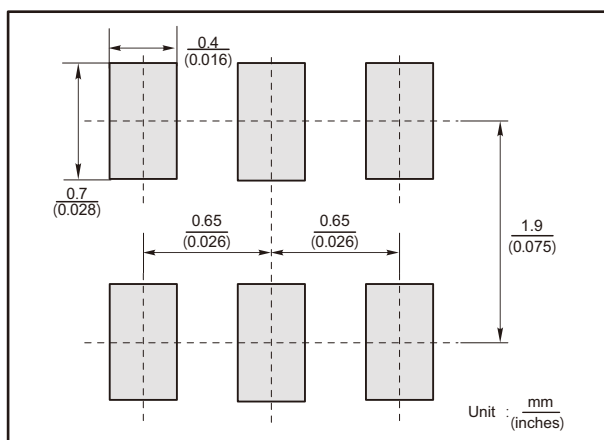
SOT-363 Package Outline Dimensions



SOT-363 mechanical data

UNIT		A	A1	B	C	D	E	e	e1	L	HE
mm	max	1.00	0.10	0.30	0.25	2.20	1.35	1.40	0.65 (BSC)	0.320 REF	2.40
	min	0.80	0.00	0.20	0.10	1.80	1.15	1.20			2.00
mil	max	39.37	3.94	11.81	9.84	86.61	53.15	55.12	25.59 (BSC)	12.56 REF	86.61
	min	31.50	0.00	7.87	3.94	70.87	45.28	47.24			78.74

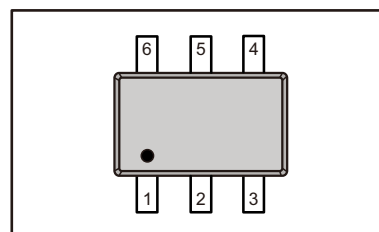
The recommended mounting pad size



Marking

Type number	Marking code
MMBT3906WH	2A

Pin Point





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