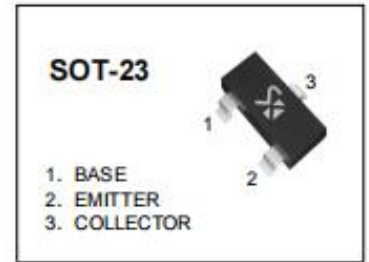


NPN Silicon Epitaxial Planar Transistor

Features

- Complementary to MMBT3906

Marking:1AM



Absolute Maximum Ratings($T_A=25^{\circ}\text{C}$, unless otherwise noted.)

Parameter	Symbol	Limit	Unit
Collector-Base Voltage	V_{CBO}	60	V
Collector-Emitter Voltage	V_{CEO}	40	V
Emitter-Base Voltage	V_{EBO}	6	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	$^{\circ}\text{C}/\text{W}$
Operation Junction Temperature Range	T_J	-55~+150	$^{\circ}\text{C}$
Storage Temperature Range	T_{STG}	-55~+150	$^{\circ}\text{C}$

Electrical Characteristics($T_A=25^{\circ}\text{C}$, unless otherwise noted.)

Parameter	Symbol	Condition	Min	Typ	Max	Unit
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C=10\mu\text{A}, I_E=0$	60			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C=1\text{mA}, I_B=0$	40			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E=10\mu\text{A}, I_C=0$	6			V
Collector cut-off current	I_{CEO}	$V_{CE}=30\text{V}, V_{EB}=3\text{V}$			50	nA
Collector cut-off current	I_{CBO}	$V_{CB}=60\text{V}, I_E=0$			100	nA
Emitter cut-off current	I_{EBO}	$V_{EB}=5\text{V}, I_C=0$			100	nA
DC current gain	h_{FE1}	$V_{CE}=1\text{V}, I_C=10\text{mA}$	100		300	
	h_{FE2}	$V_{CE}=1\text{V}, I_C=50\text{mA}$	60			
	h_{FE3}	$V_{CE}=1\text{V}, I_C=100\text{mA}$	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	$V_{CE}=20\text{V}, I_C=10\text{mA}, f=100\text{MHz}$	300			MHz
Delay time	t_d	$V_{CC}=3\text{V}, V_{BE}=0.5\text{V}$			35	ns
Rise time	t_r	$I_C=10\text{mA}, I_B=1\text{mA}$			35	ns
Storage time	t_s	$V_{CC}=3\text{V}, I_C=10\text{mA}$			200	ns
Fall time	t_f	$I_{B1}=I_{B2}=1\text{mA}$			50	ns

Typical Characteristics

Fig 1. Static characteristics

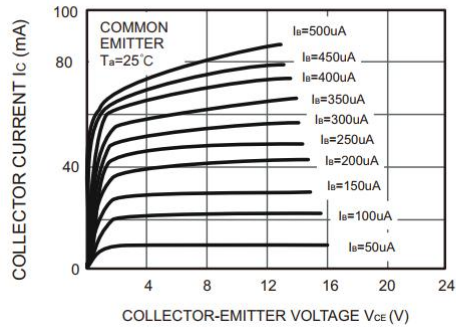


Fig 2. PC — Ta

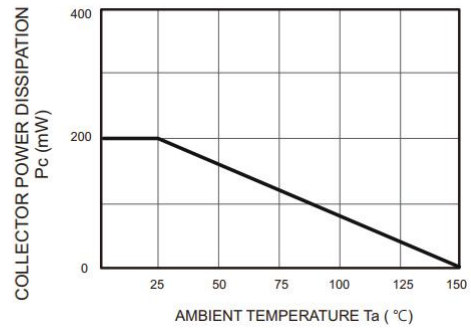


Fig 3. Cob / Cib — VCB / VEB

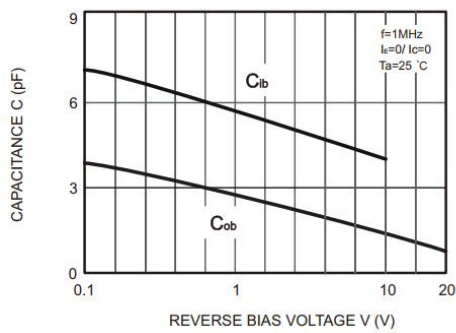


Fig 4. VCEsat — IC

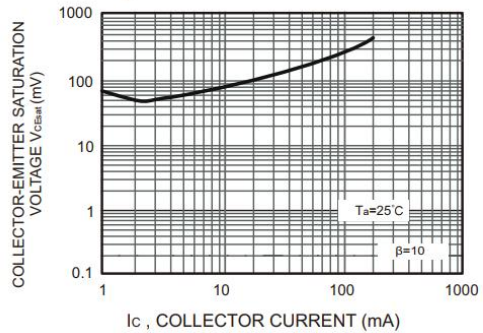


Fig 5. hFE—Ic

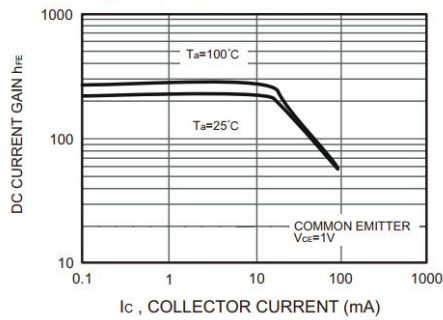


Fig 6. VBEsat — IC

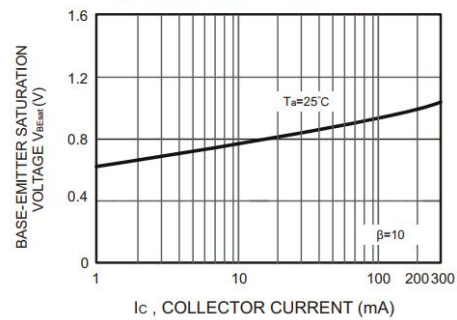


Fig 7. IC — VBE

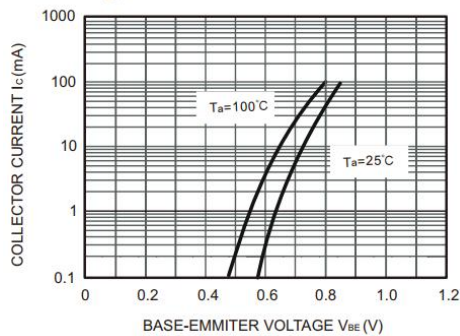
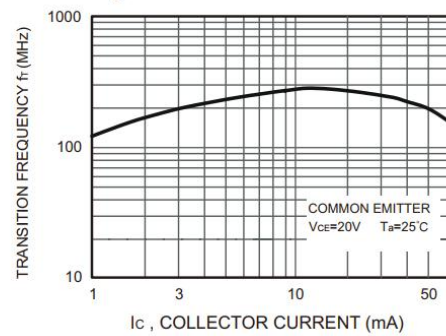


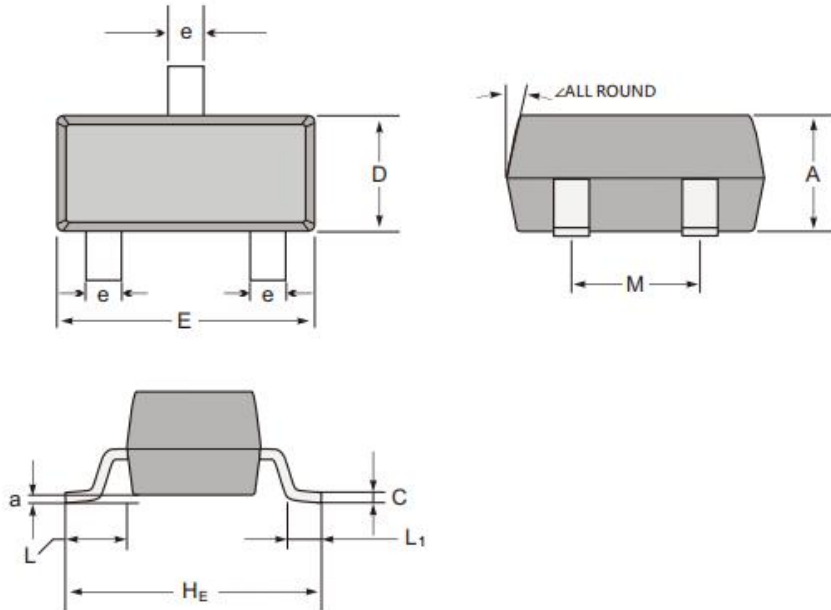
Fig 8. fT — IC



Package Information

SOT-23

Dimensions in mm



UNIT		A	C	D	E	HE	e	M	L	L ₁	a	∠
mm	max	1.1	0.20	1.4	3.0	2.6	0.6	1.95	0.55 (ref)	0.36 (ref)	0.15	12°
	min	0.9	0.08	1.2	2.8	2.2	0.35	1.7			0.0	
mil	max	43	7.9	55	118	102	24	77	22 (ref)	14 (ref)	6	
	min	35	3.1	47	110	87	13	67			0.0	

The recommended mounting pad size

