

Small Signal Product

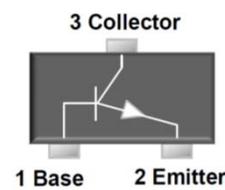
300mW, NPN Small Signal Transistor
FEATURES

- Epitaxial planar die construction
- Surface device type mounting
- Moisture sensitivity level 1
- Pb free version and RoHS compliant
- Packing code with suffix "G" means green compound (halogen-free)


SOT-23

MECHANICAL DATA

- Case: SOT- 23, molded plastic
- Terminal: Matte tin plated, lead free, solderable per MIL-STD-202, Method 208 guaranteed
- High temperature soldering guaranteed: 260°C/10s
- Weight: 0.008g (approximately)
- Marking Code: 1H



MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS (T _A =25°C unless otherwise noted)			
PARAMETER	SYMBOL	VALUE	UNIT
Collector Base Voltage	V _{CB0}	60	V
Collector Emitter Voltage	V _{CEO}	60	V
Emitter Base Voltage	V _{EBO}	4	V
Collector Current- Continuous	I _C	0.5	A
Collector Power Dissipation	P _C	300	mW
Junction Temperature	T _J	150	°C
Storage Temperature Range	T _{STG}	- 55 to +150	°C

PARAMETER	SYMBOL	MIN	MAX	UNIT
Collector Base Breakdown Voltage	V _{(BR)CBO}	60	-	V
Collector Emitter Breakdown Voltage	V _{(BR)CEO}	60	-	V
Emitter Base Breakdown Voltage	V _{(BR)EBO}	4	-	V
Collector Cutoff Current	I _{CB0}	-	0.1	μA
Collector Cutoff Current	I _{CEO}	-	0.1	μA
Emitter Cutoff Current	I _{EBO}	-	0.1	μA
DC Current Gain	at V _{CE} =1V, I _C =10mA	h _{FE}	100	400
	at V _{CE} =1V, I _C =100mA	h _{FE}	100	-
Collector Emitter Saturation Voltage	V _{CE(sat)}	-	0.25	V
Base-emitter Voltage	V _{BE}	-	1.2	V
Transition Frequency	f _T	100	-	MHz

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RATINGS AND CHARACTERISTICS CURVES

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

FIG.1 Static Characteristic

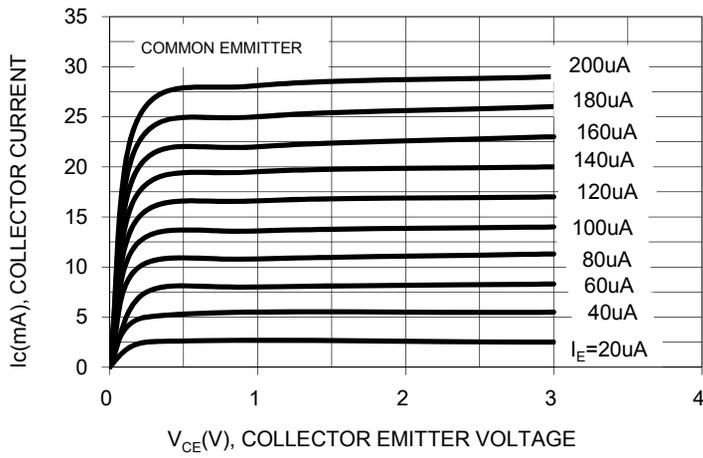


FIG. 2 $h_{FE} - I_C$

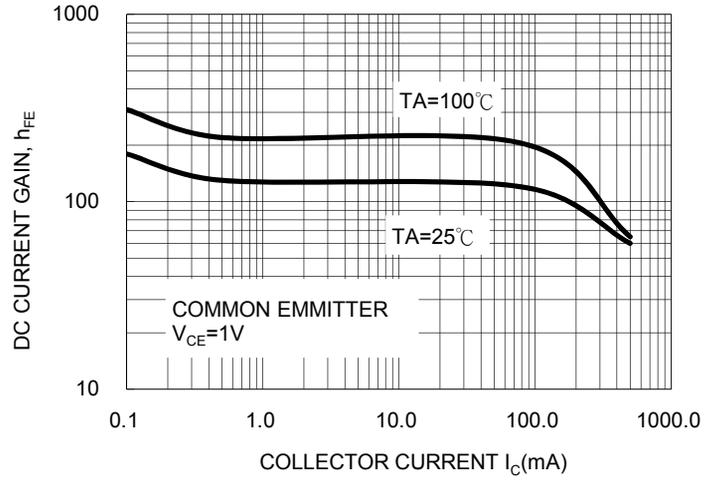


FIG. 3 $V_{BE(sat)} - I_C$

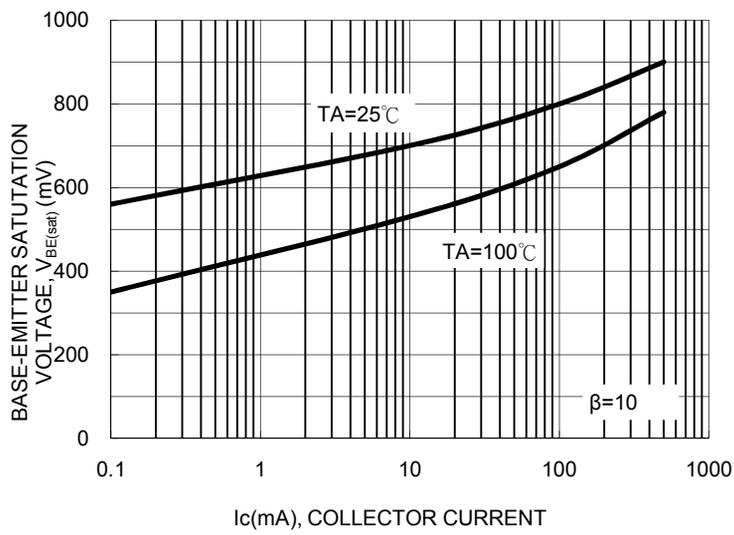


FIG. 4 $V_{CE(sat)} - I_C$

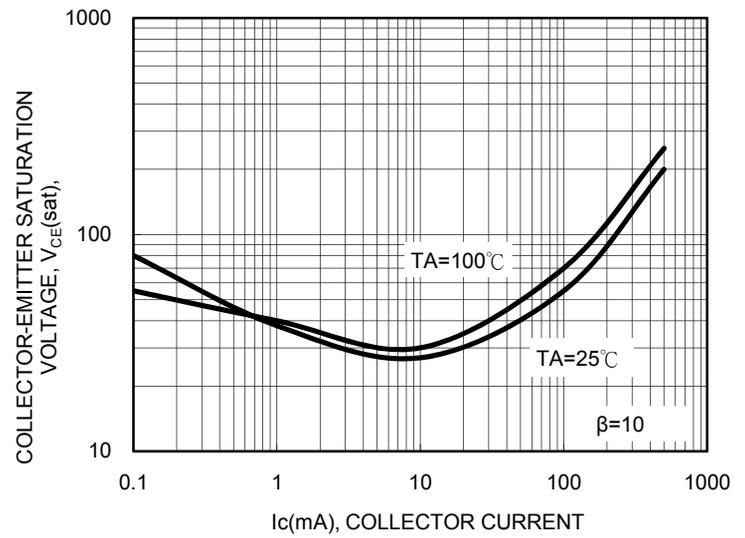


FIG. 5 $I_C - V_{BE}$

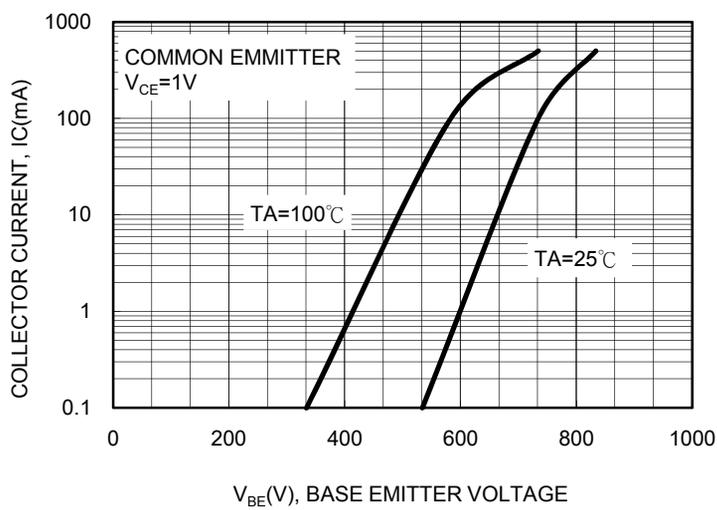
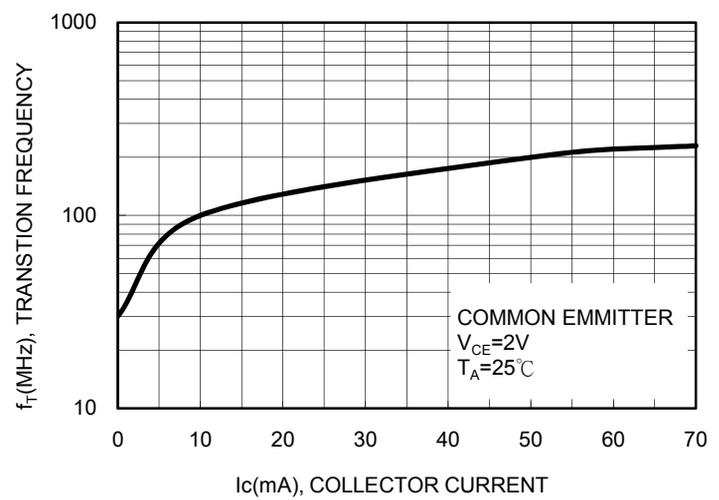


FIG. 6 $f_T - I_C$



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FIG. 7 Cob/Cib - V_{CB}/V_{EB}

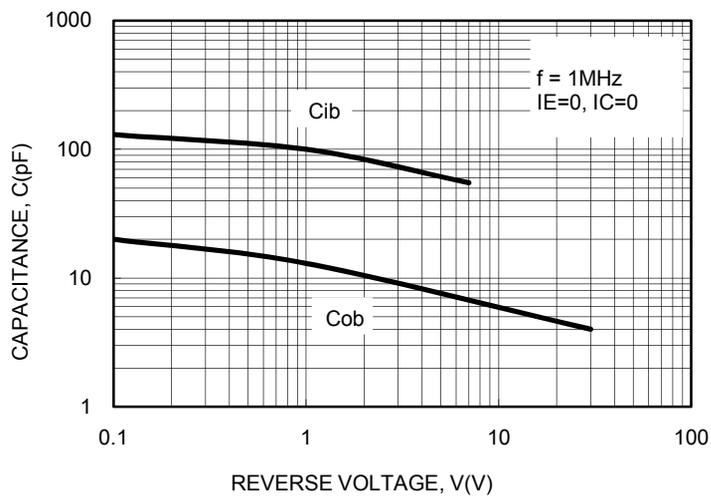
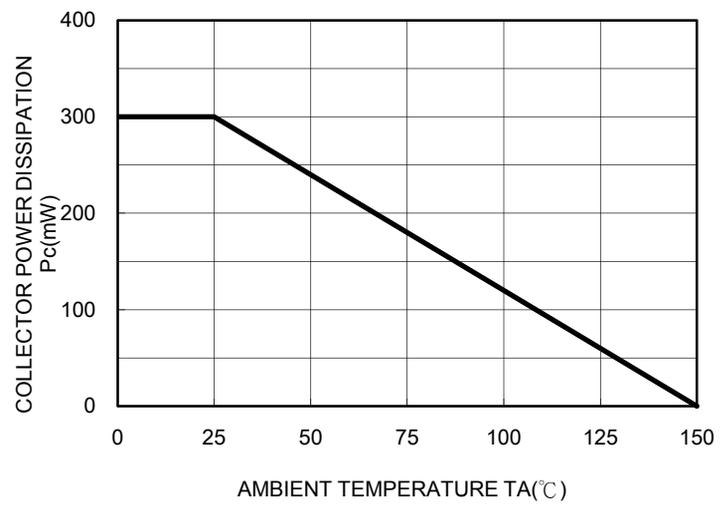
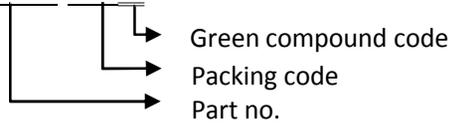


FIG. 8 $P_C - T_A$



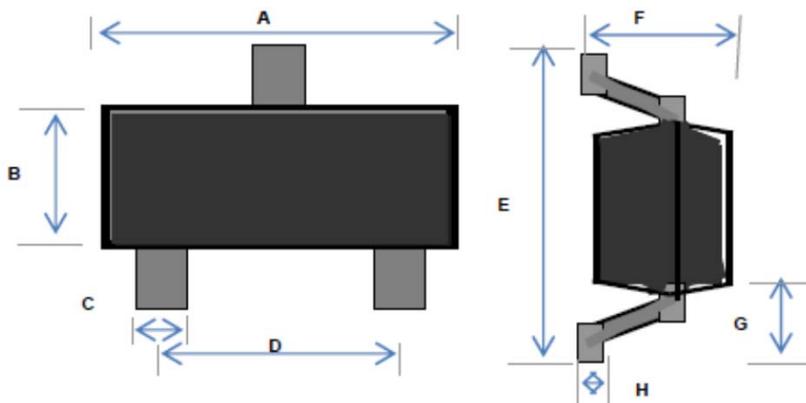
ORDER INFORMATION (EXAMPLE)

MMBTA05 RUG



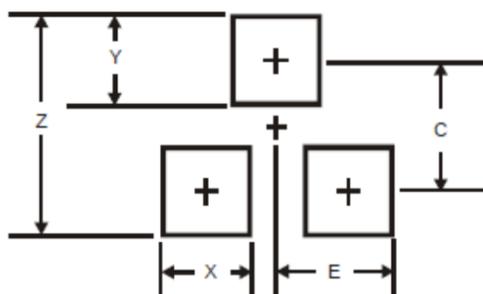
PACKAGE OUTLINE DIMENSIONS

SOT-23



DIM.	Unit(mm)		Unit(inch)	
	Min	Max	Min	Max
A	2.70	3.10	0.106	0.122
B	1.10	1.50	0.043	0.059
C	0.30	0.51	0.012	0.020
D	1.78	2.04	0.070	0.080
E	2.10	2.64	0.083	0.104
F	0.89	1.30	0.035	0.051
G	0.55 REF		0.022 REF	
H	0.10 REF		0.004 REF	

SUGGEST PAD LAYOUT



DIM	Unit (mm)	Unit (inch)
	TYP	TYP
Z	2.8	0.11
X	0.7	0.03
Y	0.9	0.04
C	1.9	0.07
E	1.0	0.04

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