Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

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Contact us

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Email & Skype: info@chipsmall.com Web: www.chipsmall.com
Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China

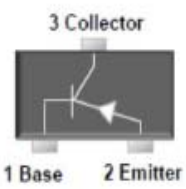
Small Signal Product

350mW, PNP Small Signal Transistor

FEATURES

- Epitaxial planar die construction
- Surface device type mounting
- Moisture sensitivity level 1
- Matte Tin (Sn) lead finish with Nickel (Ni) underplate
- Pb free version and RoHS compliant
- Packing code with suffix "G" means green compound (halogen-free)

SOT-23



Pb-Free

RoHS COMPLIANT

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: 2A

MAXIMUM RATINGS AND ELECTRICAL CHARACTERSTICS (T_A=25°C unless otherwise noted)			
PARAMETER	**SYMBOL**	**VALUE**	**UNIT**
Power Dissipation	P_D	350	mW
Collector-Base Voltage	V_{CBO}	-40	V
Collector-Emitter Voltage	V_{CEO}	-40	V
Emitter-Base Voltage	V_{EBO}	-5	V
Collector Current	I_C	-200	mA
Thermal Resistance Junction-Ambient	$R_{\theta JA}$	357	°C/W
Junction and Storage Temperature Range	T_J , T_{STG}	-55 to + 150	°C

Notes:1. Valid provided that electrodes are kept at ambient temperature

PARAMETER				**SYMBOL**	**MIN**	**MAX**	**UNIT**
Collector-Base Breakdown Voltage		I_C = 10 μA	I_E = 0	$V_{(BR)CBO}$	-40	-	V
Collector-Emitter Breakdown Voltage		I_C = -1 mA	I_B = 0	$V_{(BR)CEO}$	-40	-	V
Emitter-Base Breakdown Voltage		I_E = -10 μA	I_C = 0	$V_{(BR)EBO}$	-5	-	V
Collector Base Cut-off Current		V_{CB} = -40 V		I_{CBO}	-	-100	nA
Emitter Base Cut-off Current		V_{EB} = -6 V		I_{EBO}	-	-50	nA
DC Current Gain		V_{CE} = -1 V	I_C = -0.1 mA	h_{FE}	60	300	
		V_{CE} = -1 V	I_C = -1 mA		80		
		V_{CE} = -1 V	I_C = -10 mA		100		
		V_{CE} = -1 V	I_C = -50 mA		60		
		V_{CE} = -1 V	I_C = -100 mA		30		
Collector-Emitter Saturation Voltage		I_C = -10 mA	I_B = -1 mA	$V_{CE(sat)}$	-	-0.25	V
		I_C = -50 mA	I_B = -5 mA		-	-0.4	
Base-Emitter Saturation Voltage		I_C = -10 mA	I_B = -1 mA	$V_{BE(sat)}$	-0.65	-0.85	V
		I_C= -50 mA	I_B = -5 mA		-	-0.95	
Gain-Bandwidth Product	V_{CE} = -20 V	I_C = -10 mA	f= 100MHz	f_T	250	-	MHz
Output Capacitance	V_{CB} = -5 V	I_E = 0	f= 1MHz	C_{obo}	-	4.5	pF
Delay time	V_{CC} = -3 V	V_{BE} = -0.5 V	I_C = -10 mA	t_d	-	35	ns
Rise time			I_{B1} = -1.0 mA	t_r	-	35	ns
Storage time		V_{CC} = -3 V	I_C = -10 mA	t_s	-	225	ns
Fall time		I_{B1} = I_{B2} = -1.0 mA		t_f	-	75	ns

RATINGS AND CHARACTERISTICS CURVES

(T_A=25°C unless otherwise noted)

Fig. 1 Capacitance

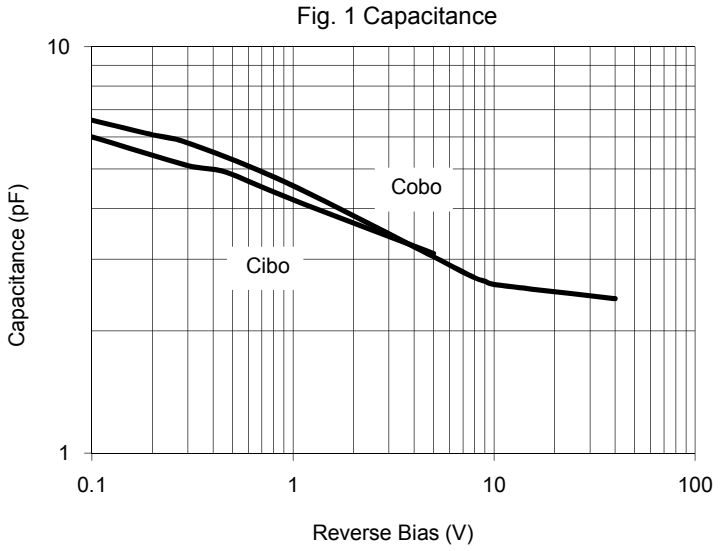


Fig. 2 Charge Data

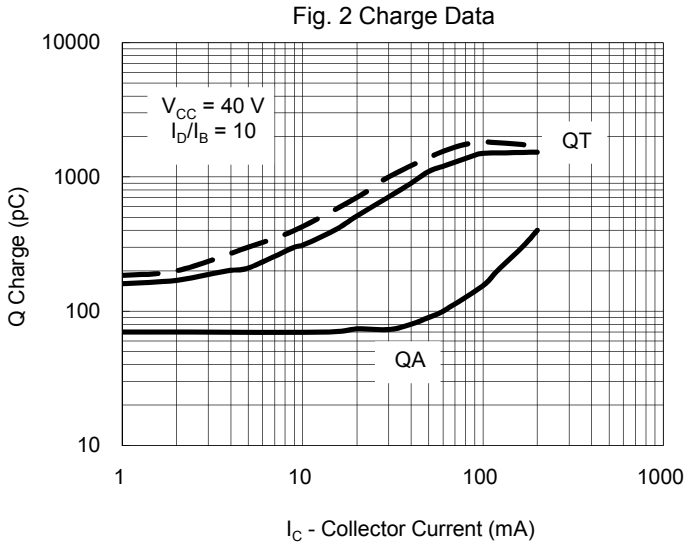


Fig. 3 Turn - On Time

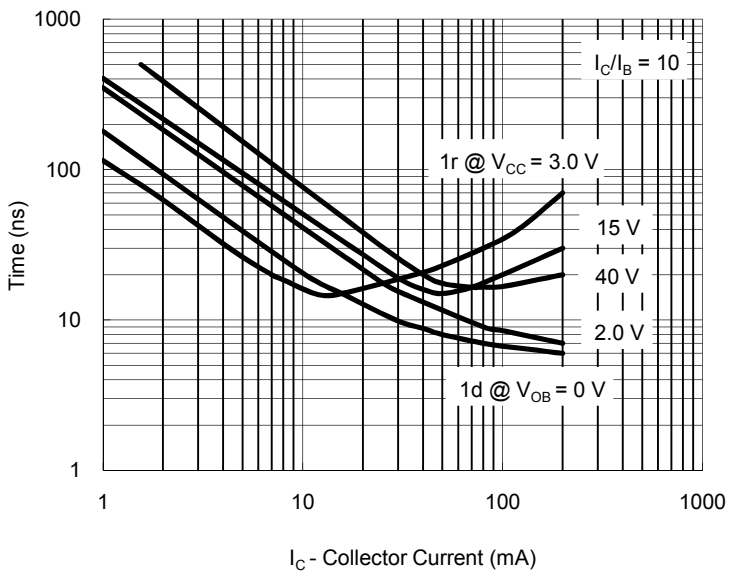


Fig. 4 Fall Time

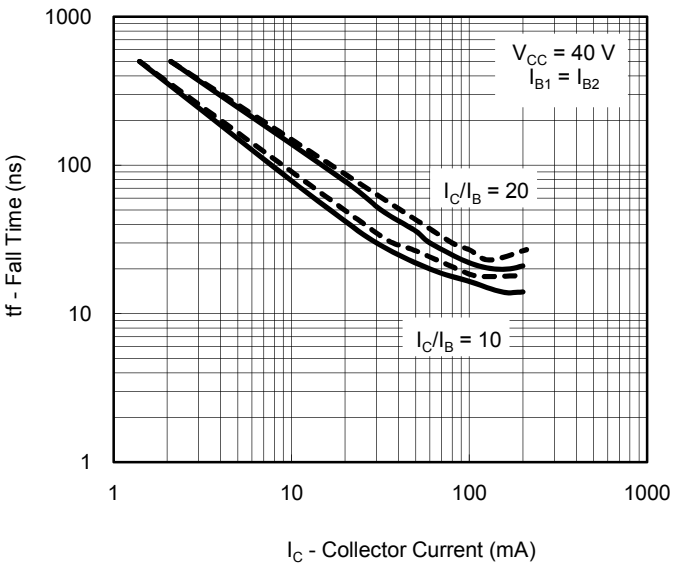


Fig. 5 Noise Figure VS. Frequency

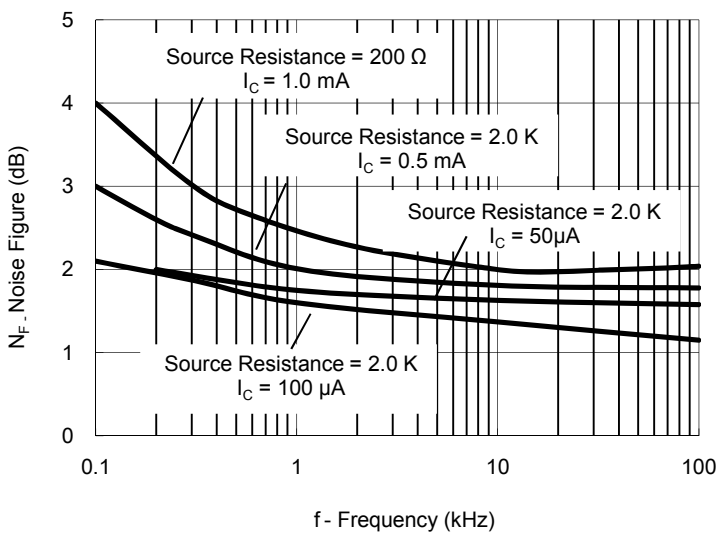
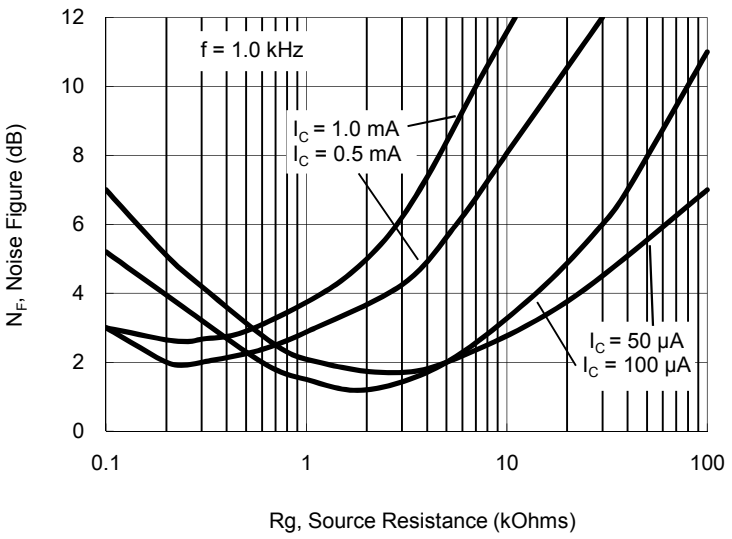


Fig. 6 Noise Figure VS. Source



h Parameters (V_{CE} = -10 V_{DC} , f = 1.0 kHz , T_A = 25 °C)

Fig. 7 Current Gain

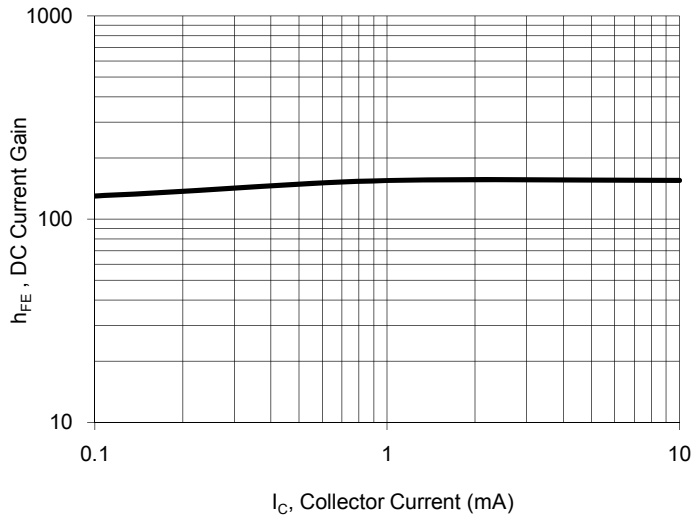


Fig. 8 Output Admittance

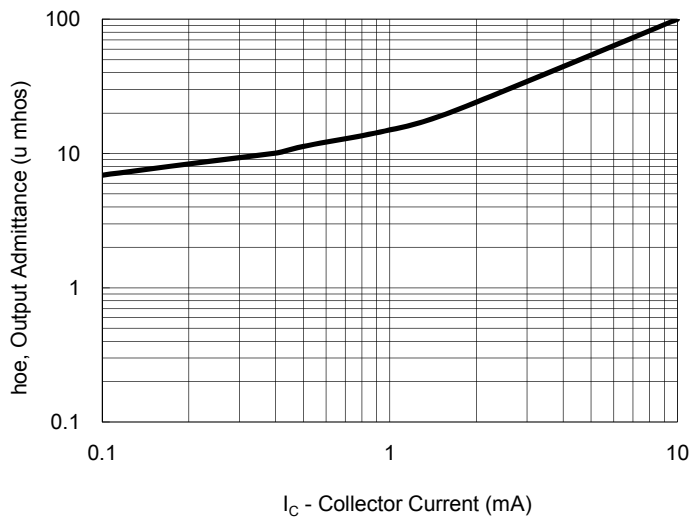


Fig. 9 Input Impedance

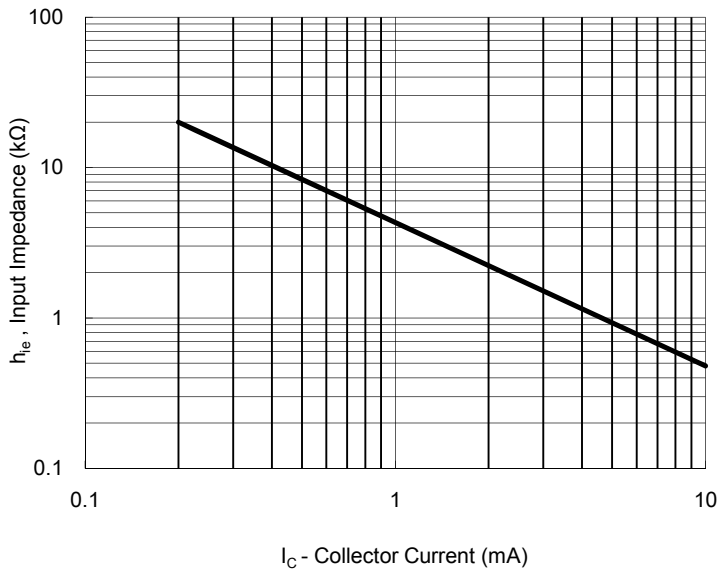


Fig. 10 Voltage Feedback Ratio

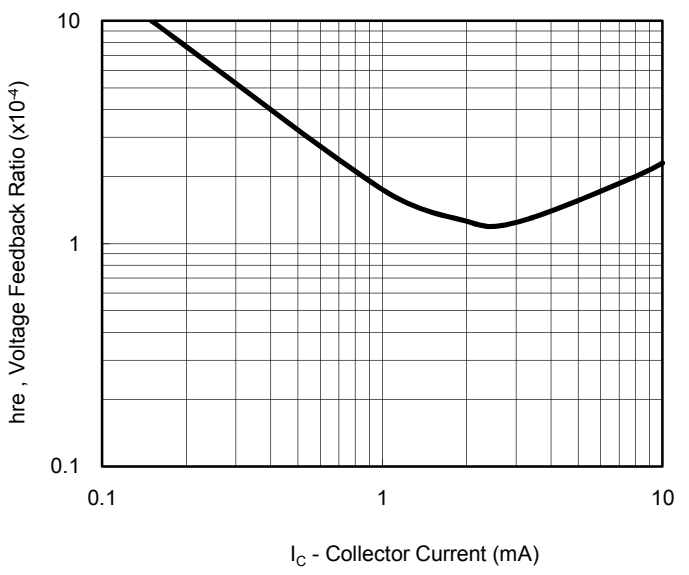


Fig. 11 "ON" Voltages

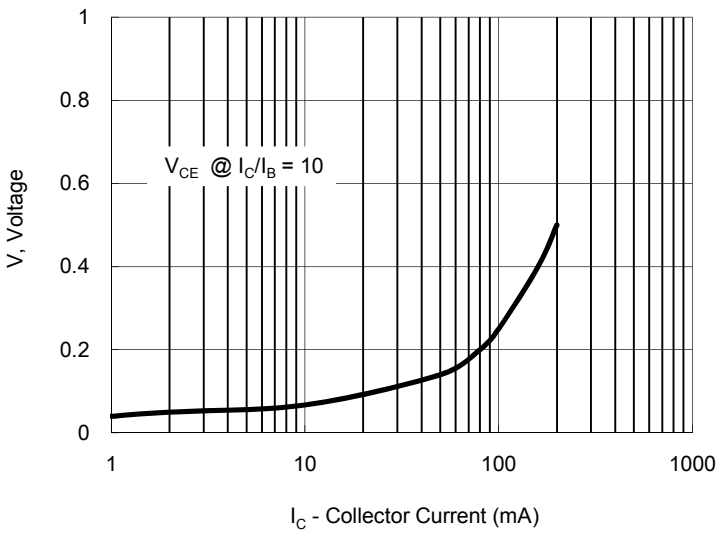
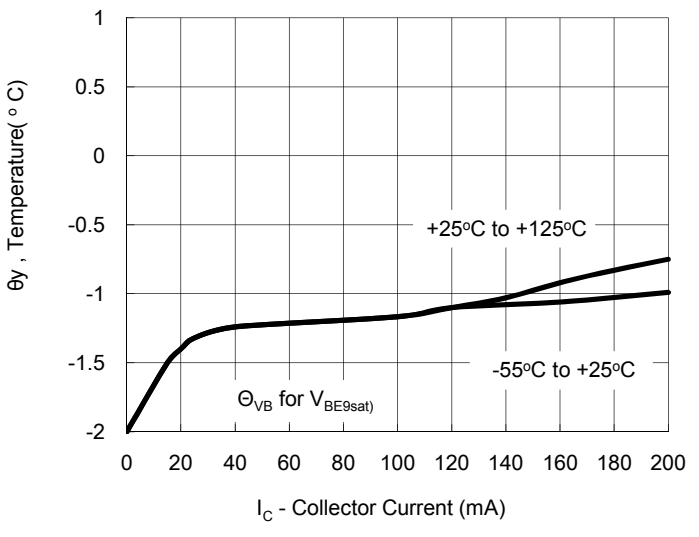


Fig. 12 Temperature Coefficients

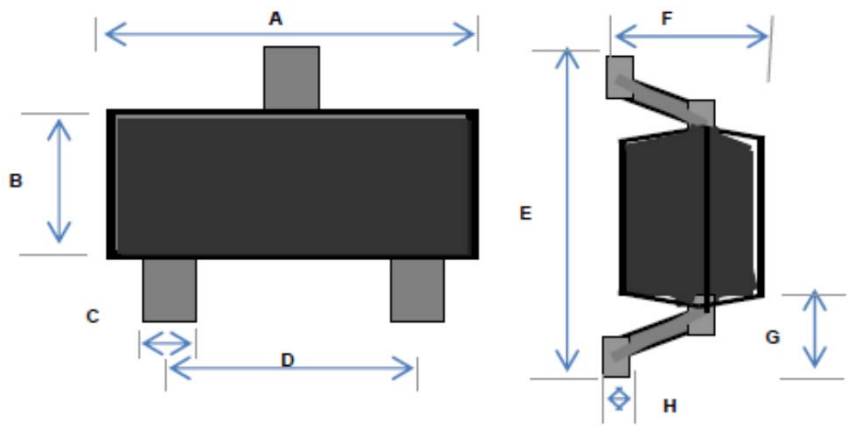


ORDERING INFORMATION					
PART NO.	**PART NO. SUFFIX** (Note 1)	**PACKING CODE**	**PACKING CODE SUFFIX**	**PACKAGE**	**PACKING**
MMBT3906	-xx	RF	G	SOT-23	3K / 7" Reel
		R5			10K / 13" Reel

Note 1: Part No. Suffix „-xx “ would be used for special requirement

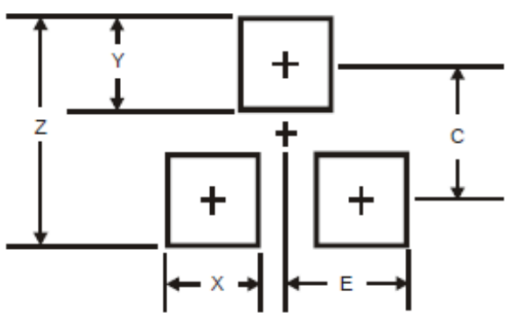
EXAMPLE					
PREFERRED P/N	**PART NO.**	**PART NO. SUFFIX**	**PACKING CODE**	**PACKING CODE SUFFIX**	**DESCRIPTION**
MMBT3906 RF	MMBT3906		RF		Multiple manufacture source
MMBT3906 RFG	MMBT3906		RF	G	Multiple manufacture source Green compound
MMBT3906-D0 RFG	MMBT3906	-D0	RF	G	Defined manufacture source Green compound
MMBT3906-B0 RFG	MMBT3906	-B0	RF	G	Defined manufacture source Green compound

PACKAGE OUTLINE DIMENSIONS



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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