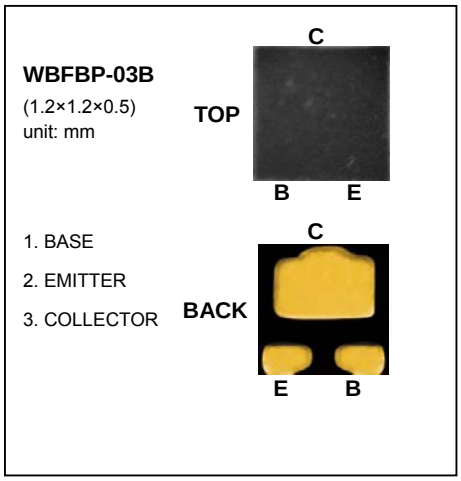
JIANGSU CHANGJIANG ELECTRONICS TECHNOLOGY CO., LTD

WBFBP-03B Plastic-Encapsulate Transistors

S9015M TRANSISTOR

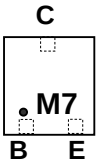


DESCRIPTION
PNP Epitaxial Silicon Transistor

FEATURES
High h_{FE} and good linearity
Complementary to S9014M

APPLICATION
Low Frequency, Low Noise Amplifier
For portable equipment:(i.e. Mobile phone,MP3, MD,CD-ROM, DVD-ROM,Note book PC, etc.)

MARKING: M7



MAXIMUM RATINGS T_A=25℃ unless otherwise noted

Symbol	Parameter	Value	Units
V_{CBO}	Collector-Base Voltage	-50	V
V_{CEO}	Collector-Emitter Voltage	-45	V
V_{EBO}	Emitter-Base Voltage	-5	V
I_C	Collector Current -Continuous	-0.1	A
P_C	Collector Dissipation	0.15	W
T_J	Junction Temperature	150	℃
T_{stg}	Storage Temperature	-55-150	℃

ELECTRICAL CHARACTERISTICS(Ta=25℃ unless otherwise specified)

Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Collector-base breakdown voltage	$V_{(BR)CBO}$	I_C= -100 μ A, I_E=0	-50			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	I_C= -0.1mA, I_B=0	-45			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	I_E=-100 μ A, I_C=0	-5			V
Collector cut-off current	I_{CBO}	V_{CB}=-50 V , I_E=0			-0.1	μ A
Emitter cut-off current	I_{EBO}	V_{EB}= -5V , I_C=0			-0.1	μ A
DC current gain	h_{FE}	V_{CE}=-5V, I_C= -1mA	200		1000	
Collector-emitter saturation voltage	V_{CE}(sat)	I_C=-100 mA, I_B= -10mA			-0.3	V
Base-emitter saturation voltage	V_{BE}(sat)	I_C=-100 mA, I_B=-10mA			-1	V
Transition frequency	f_T	V_{CE}=-5V, I_C= -10mA f=30MHz	150			MHz
Collector output capacitance	C_{obo}	V_{CB}=-10V,I_E=0,f=1MHz			7	pF
Noise figure	NF	V_{CE}=-5V,I_c=-0.2mA, f=1KHz,R_S=2KΩ			6	dB

CLASSIFICATION OF h_{FE}

Rank	L	H
Range	200-450	450-1000

Typical Characteristics S9015M

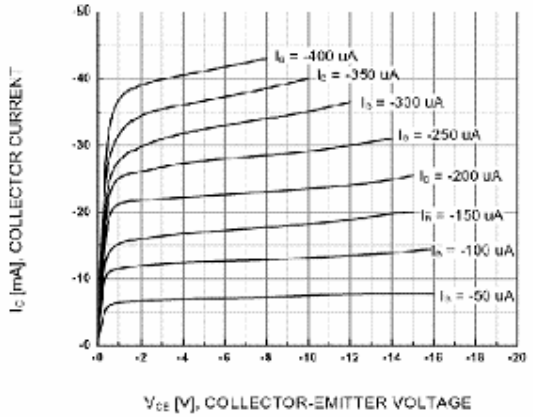


Figure 1. Static Characteristic

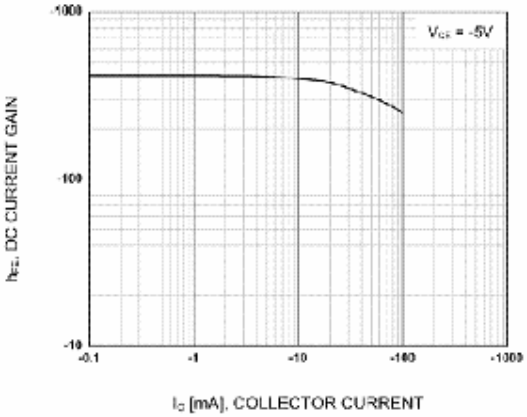


Figure 2. DC current Gain

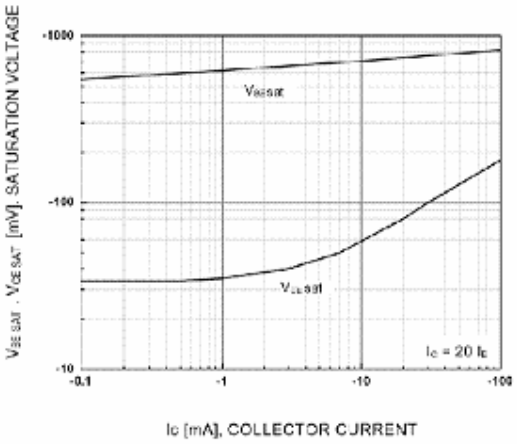


Figure 3. Base-Emitter Saturation Voltage Collector-Emitter Saturation Voltage

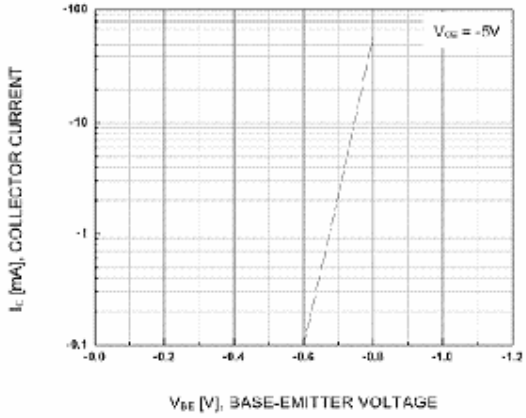


Figure 4. Base-Emitter On Voltage

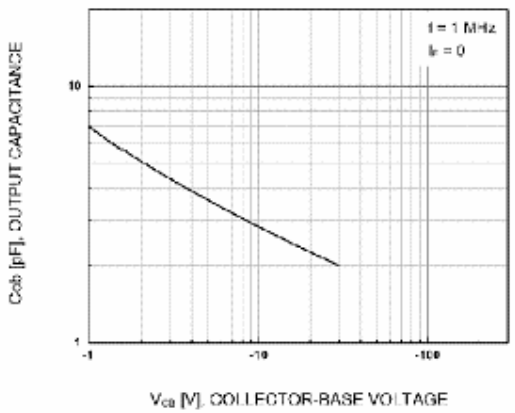


Figure 5. Collector Output Capacitance

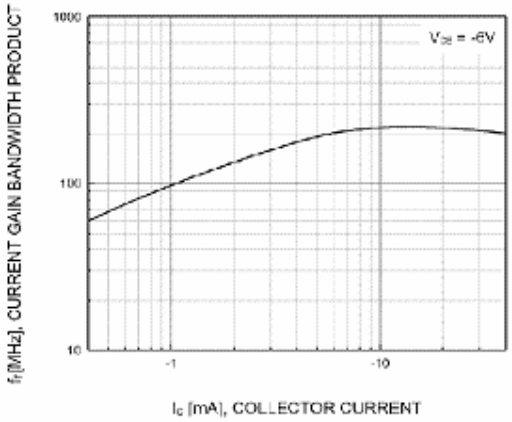
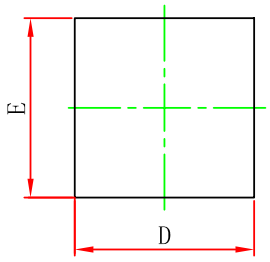
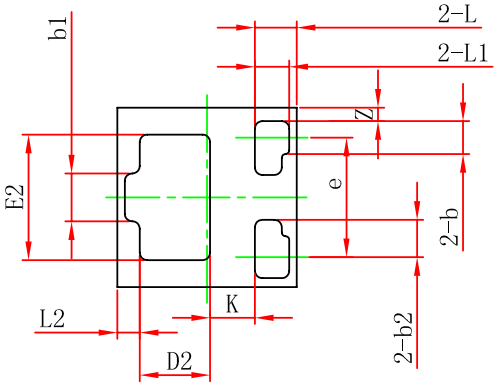


Figure 6. Current Gian Bandwidth Product

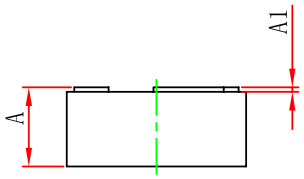
WBFBP-03B(1.2×1.2×0.5) PACKAGE OUTLINE DIMENSIONS



TOP VIEW

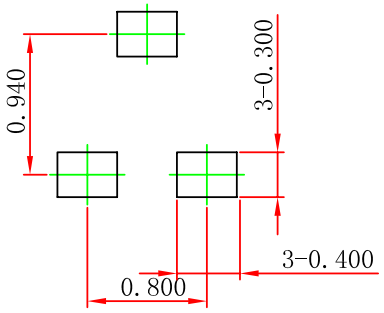


BOTTOM VIEW



SIDE VIEW

(LAND PATTERN RECOMMENDATION)



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.450	0.550	0.018	0.022
A1	0.010	0.090	0.000	0.004
b	0.170	0.270	0.007	0.011
b1	0.270	0.370	0.011	0.015
b2	0.250 REF.		0.010 REF.	
D	1.150	1.250	0.045	0.049
E	1.150	1.250	0.045	0.049
D2	0.470 REF.		0.002 REF.	
E2	0.810 REF.		0.032 REF.	
e	0.800 TYP.		0.032 TYP.	
L	0.280 REF.		0.011 REF.	
L1	0.230 REF.		0.009 REF.	
L2	0.150 REF.		0.006 REF.	
k	0.300 REF.		0.012 REF.	
z	0.090 REF.		0.004 REF.	