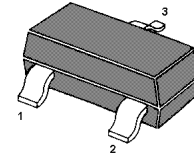


NPN Silicon Epitaxial Planar Transistor

High Frequency Low Noise Amplifier.

The transistor is subdivided into three groups, Q, R and S, according to its DC current gain.



1.Base 2.Emitter 3.Collector
SOT-23 Plastic Package

Features:

- Low Noise
NF=1.2dB TYP. @ f=1GHz, $V_{CE}=3V$, $I_C=7mA$
- High Gain
 $|S_{21e}|^2=9.0dB$ TYP. @ f=1GHz, $V_{CE}=3V$, $I_C=7mA$

Description:

The MMBTSC4226 is a low supply voltage transistor designed for VHF, UHF low noise amplifier.

Absolute Maximum Ratings ($T_a = 25\text{ }^\circ\text{C}$)

Parameter	Symbol	Value	Unit
Collector Base Voltage	V_{CBO}	20	V
Collector Emitter Voltage	V_{CEO}	12	V
Emitter Base Voltage	V_{EBO}	3	V
Collector Current	I_C	100	mA
Total Power Dissipation	P_{tot}	200	mW
Junction Temperature	T_j	150	$^\circ\text{C}$
Storage Temperature Range	T_s	-65 to +150	$^\circ\text{C}$



Characteristics at $T_{amb}=25\text{ }^{\circ}\text{C}$

Parameter	Symbol	Min.	Typ.	Max.	Unit
DC Current Gain at $V_{CE}=3\text{V}$, $I_C=7\text{mA}$					
Current Gain Group Q	h_{FE}	50	-	100	-
R	h_{FE}	80	-	160	-
S	h_{FE}	125	-	250	-
Collector Cutoff Current at $V_{CB}=10\text{V}$	I_{CBO}	-	-	1.0	μA
Emitter Cutoff Current at $V_{EB}=1\text{V}$	I_{EBO}	-	-	1.0	μA
Gain Bandwidth Product at $V_{CE}=3\text{V}$, $I_C=7\text{mA}$	f_T	3.0	4.5	-	GHz
Feed back Capacitance ¹⁾ at $V_{CE}=3\text{V}$, $f=1\text{MHz}$	C_{re}	-	0.7	1.5	pF
Insertion Power Gain at $V_{CE}=3\text{V}$, $I_C=7\text{mA}$, $f=1\text{GHz}$	$ S_{21e} ^2$	7	9	-	dB
Noise Figure at $V_{CE}=3\text{V}$, $I_C=7\text{mA}$, $f=1\text{GHz}$	NF	-	1.2	2.5	dB

¹⁾ Measured with 3 terminal bridge, Emitter and case should be grounded.

Classification of h_{FE}

RANK	Q	R	S
MARKING	R23	R24	R25
h_{FE}	50 ~100	80 ~160	125 ~250



CHINA BASE
INTERNATIONAL

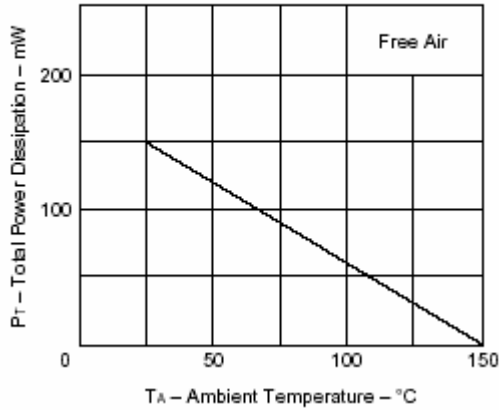
SOT-23



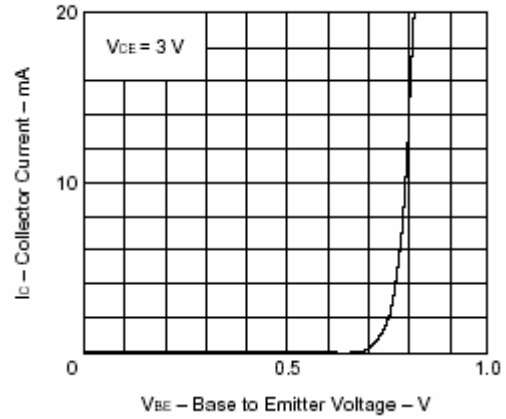
MMBTSC4226

www.china-base.com.hk

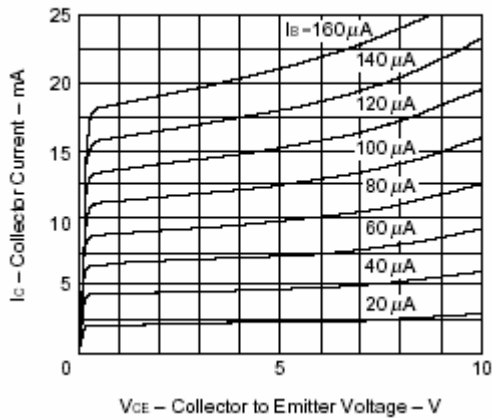
TOTAL POWER DISSIPATION vs. AMBIENT TEMPERATURE



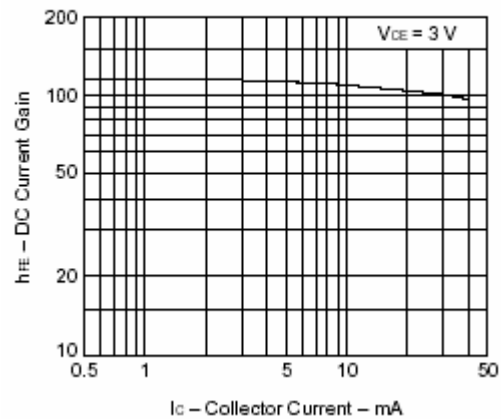
COLLECTOR CURRENT vs. BASE TO EMITTER VOLTAGE



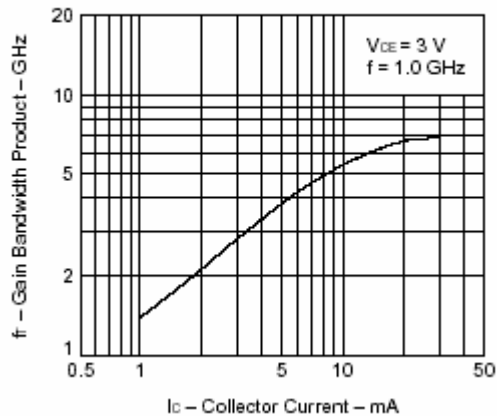
COLLECTOR CURRENT vs. COLLECTOR TO EMITTER VOLTAGE



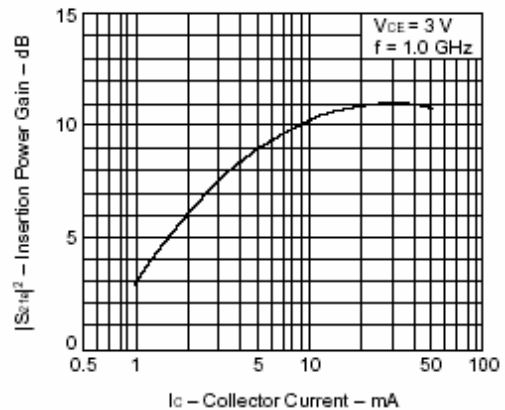
DC CURRENT GAIN vs. COLLECTOR CURRENT

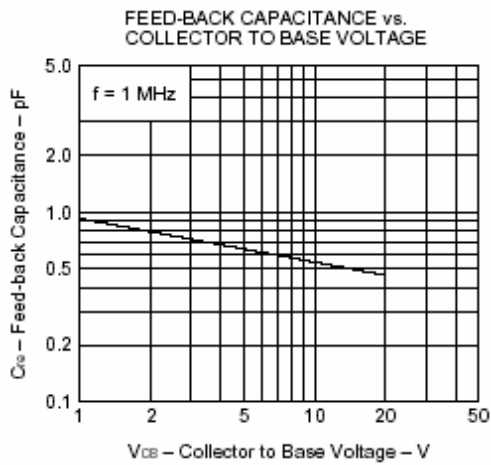
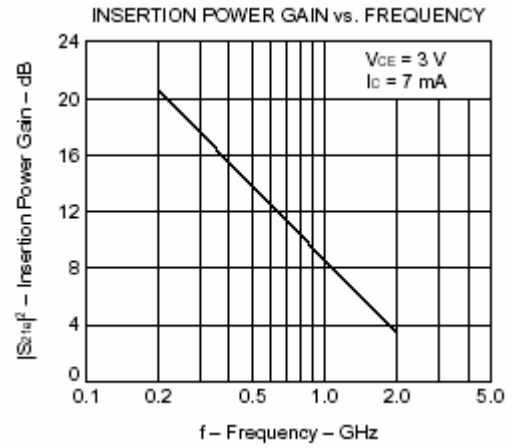
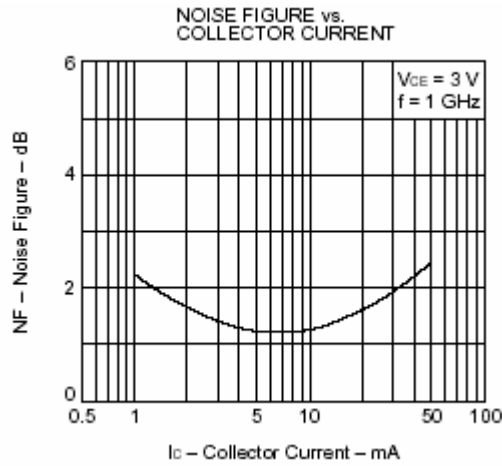


GAIN BANDWIDTH PRODUCT vs. COLLECTOR CURRENT



INSERTION POWER GAIN vs. COLLECTOR CURRENT







CHINA BASE
INTERNATIONAL

SOT-23



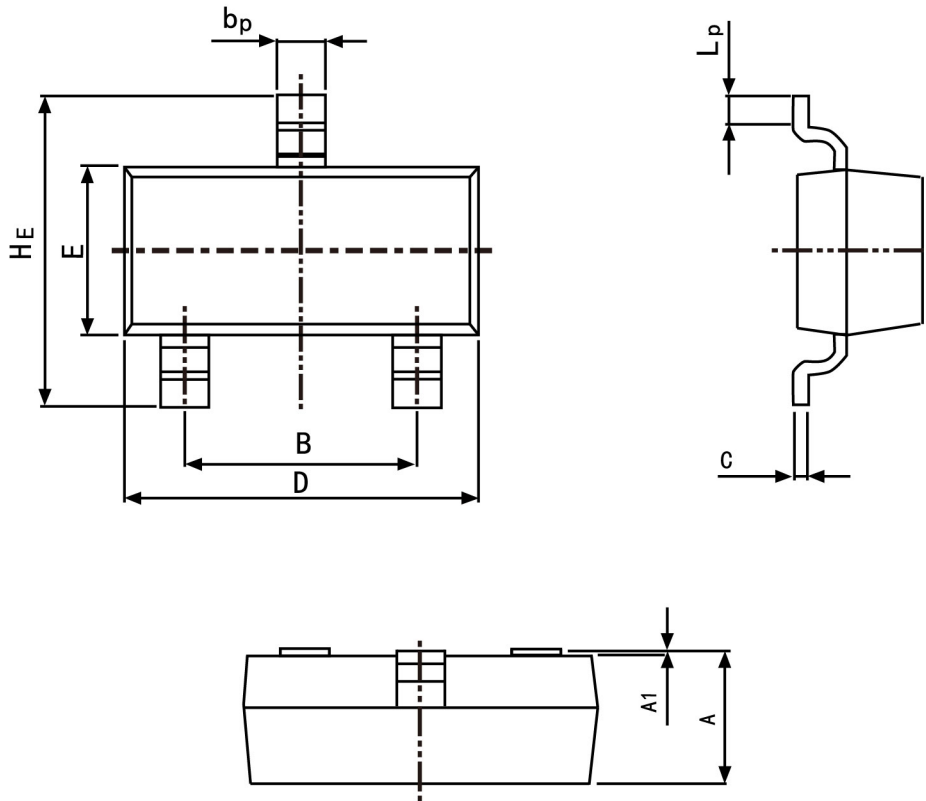
MMBTSC4226

www.china-base.com.hk

PACKAGE OUTLINE

Plastic surface mounted package; 3 leads

SOT-23



Symbol	Dimension in Millimeters	
	Min	Max
A	0.95	1.40
B	1.78	2.04
b_p	0.35	0.50
C	0.08	0.19
D	2.70	3.10
E	1.20	1.65
HE	2.20	3.00
A_1	0.100	0.013
L_p	0.20	0.50