

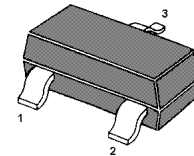
## MMBTSC4226 NPN Silicon Epitaxial Planar Transistor

High Frequency Low Noise Amplifier.

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

### 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,  $V_{CE}=3V$ ,  $I_C=7mA$



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

### 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	$^\circ\text{C}$

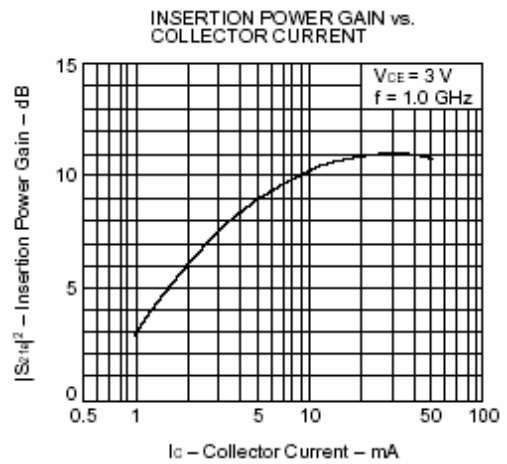
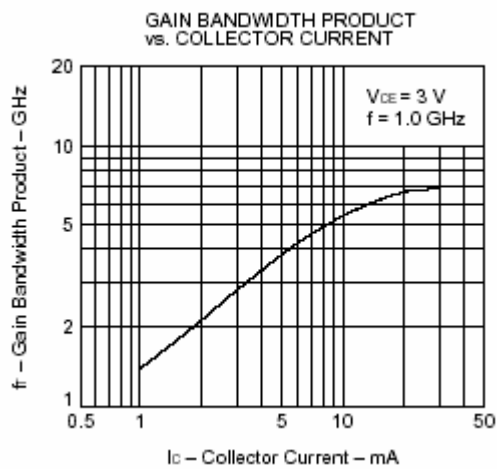
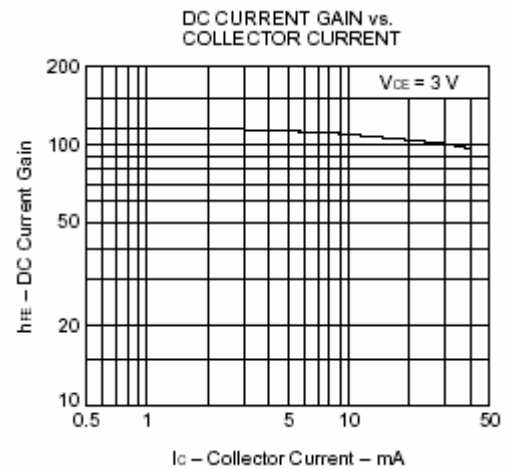
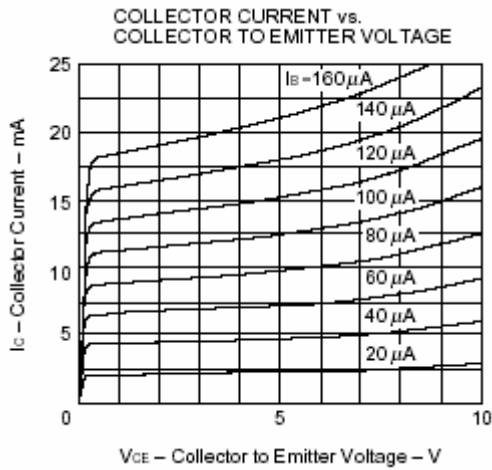
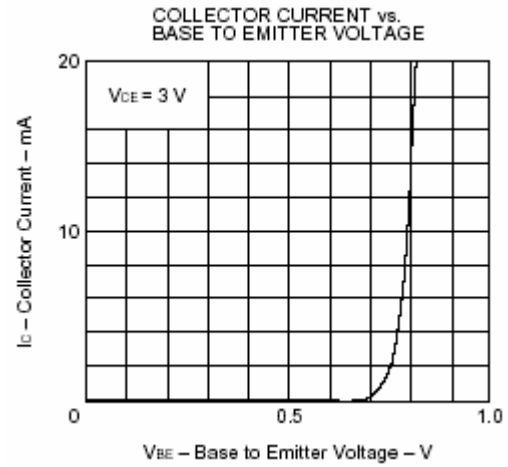
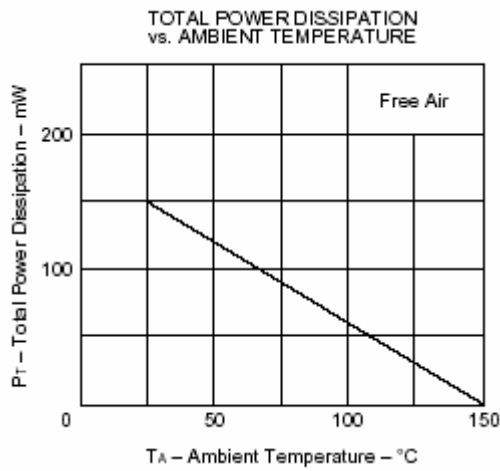
### Characteristics at $T_{amb}=25\text{ }^{\circ}\text{C}$

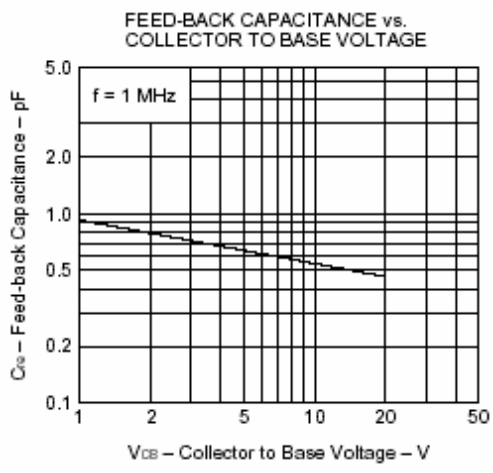
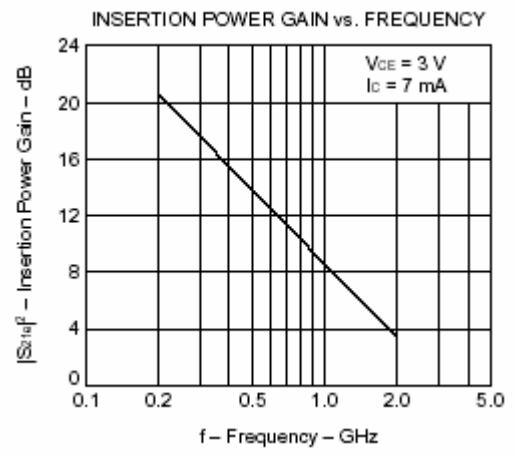
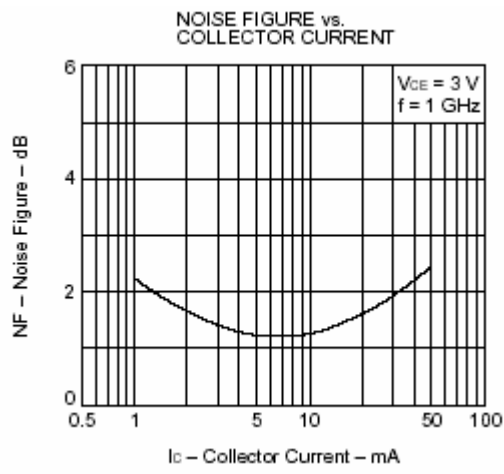
Parameter	Symbol	Min.	Typ.	Max.	Unit
DC Current Gain at $V_{CE}=3\text{V}$ , $I_C=7\text{mA}$					
Current Gain Group Q	$h_{FE}$	50	-	100	-
R	$h_{FE}$	80	-	160	-
S	$h_{FE}$	125	-	250	-
Collector Cutoff Current at $V_{CB}=10\text{V}$	$I_{CBO}$	-	-	1.0	$\mu\text{A}$
Emitter Cutoff Current at $V_{EB}=1\text{V}$	$I_{EBO}$	-	-	1.0	$\mu\text{A}$
Gain Bandwidth Product at $V_{CE}=3\text{V}$ , $I_C=7\text{mA}$	$f_T$	3.0	4.5	-	GHz
Feed back Capacitance <sup>1)</sup> 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

<sup>1)</sup> 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

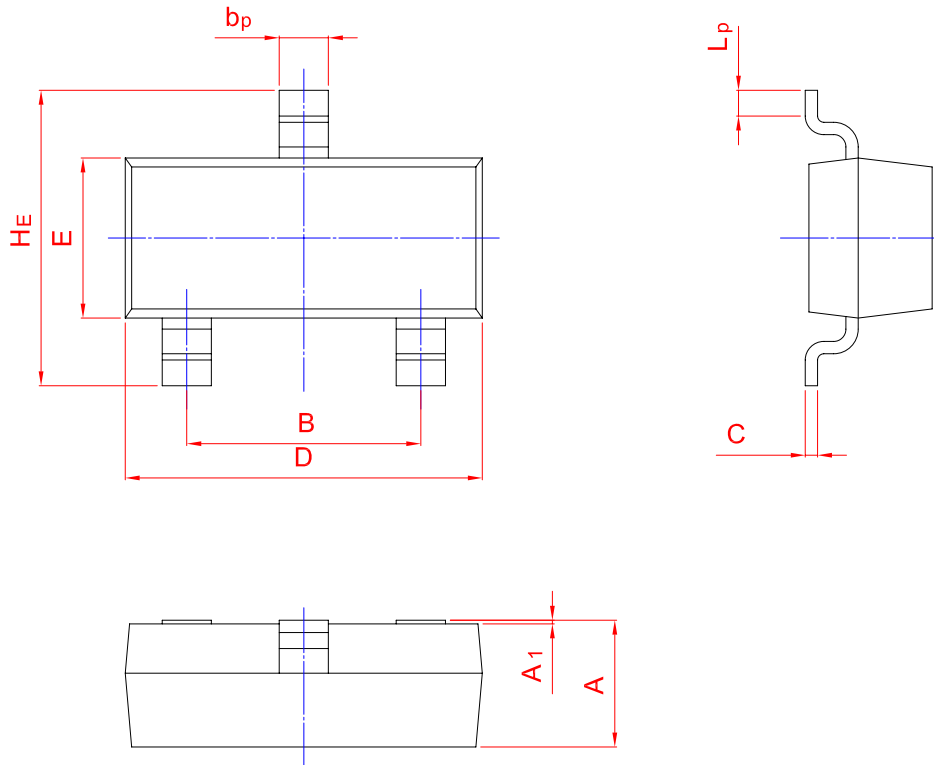
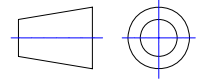




# PACKAGE OUTLINE

Plastic surface mounted package; 3 leads

SOT-23



UNIT	A	B	b <sub>p</sub>	C	D	E	H <sub>E</sub>	A <sub>1</sub>	L <sub>p</sub>
mm	1.40	2.04	0.50	0.19	3.10	1.65	3.00	0.100	0.50
	0.95	1.78	0.35	0.08	2.70	1.20	2.20	0.013	0.20