

# MMBTSC4226

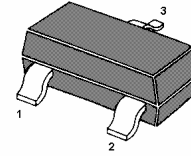
## NPN Silicon Epitaxial Planar Transistor

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

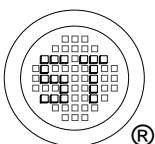
SOT-23 Plastic Package

### Description:

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

### Absolute Maximum Ratings ( $T_a = 25^\circ C$ )

	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	$^\circ C$
Storage Temperature Range	$T_s$	-65 to +150	$^\circ C$



**SEMTECH ELECTRONICS LTD.**

(Subsidiary of Sino-Tech International Holdings Limited, a company listed on the Hong Kong Stock Exchange, Stock Code: 724)



ISO/TS 16949 : 2002  
Certificate No. 05103



ISO 14001:2004  
Certificate No. 71116



ISO 9001:2000  
Certificate No. 0506098

Dated : 20/10/2005

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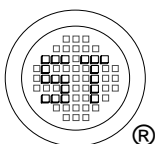
## Characteristics at $T_{amb}=25\text{ }^{\circ}\text{C}$

	Symbol	Min.	Typ.	Max.	Unit
DC Current Gain at $V_{CE}=3\text{V}$ , $I_C=7\text{mA}$  Current Gain Group	Q	50	-	100	-
	R	80	-	160	-
	S	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.

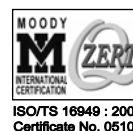
## Classification of $h_{FE}$

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



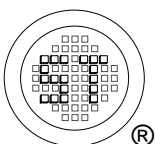
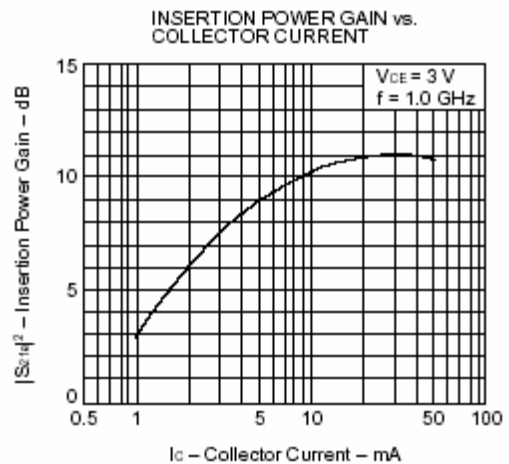
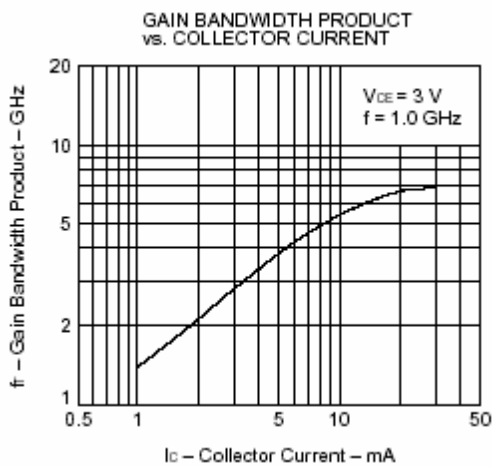
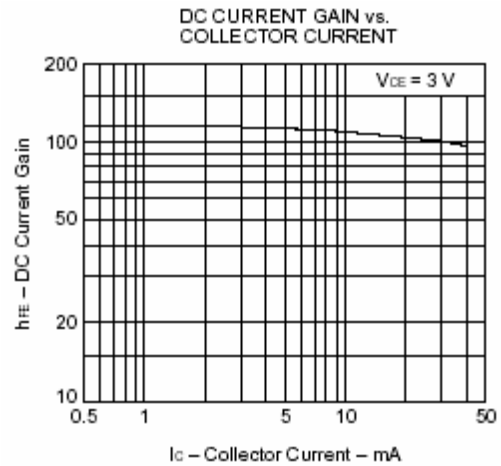
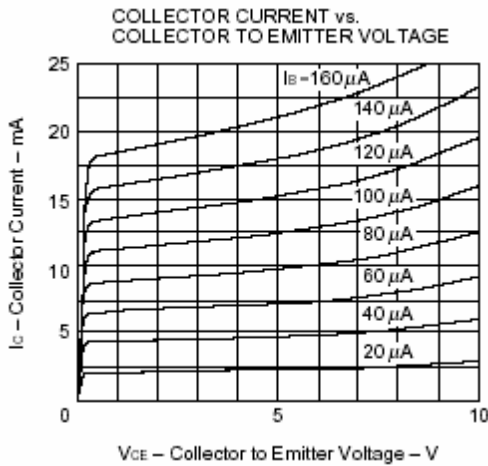
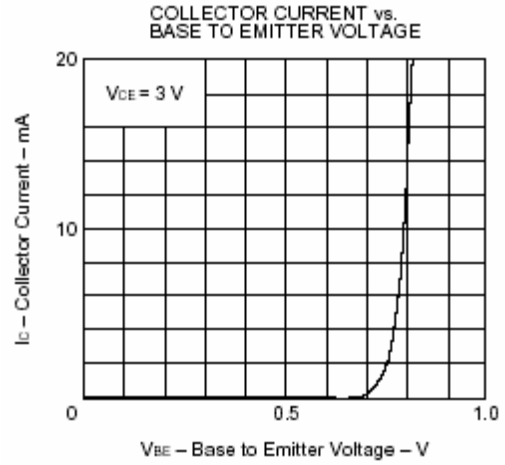
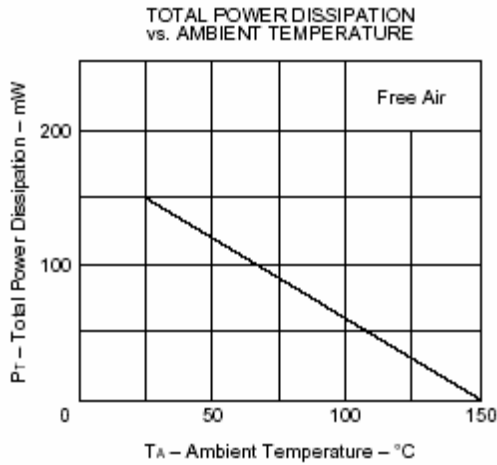
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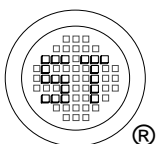
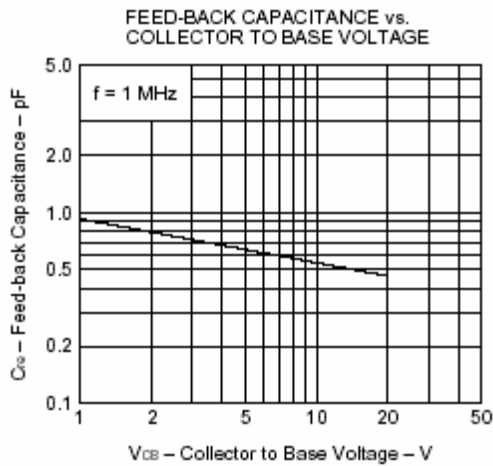
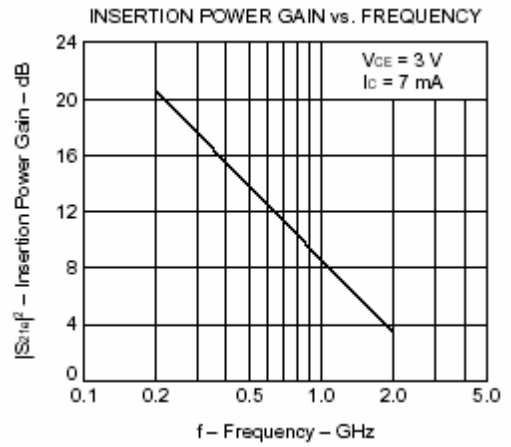
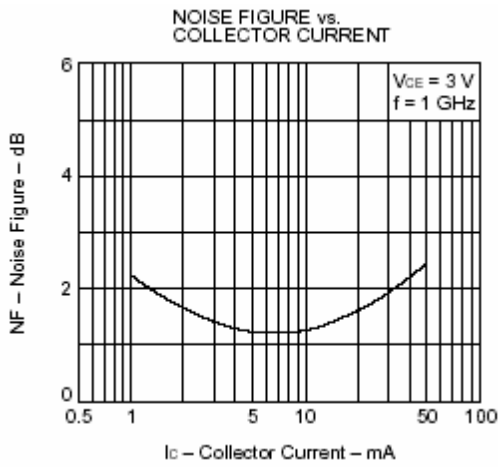
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