

### NPN Silicon Epitaxial Planar Transistor

High Frequency Low Noise Amplifier.

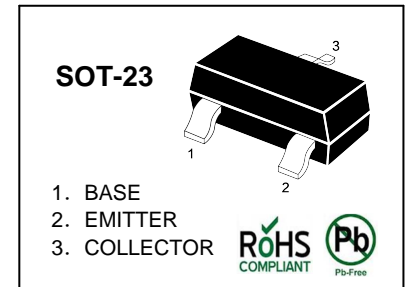
The transistor is subdivided into three groups, Q, R and S, according to its DC current gain.

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

#### Description:

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



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

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

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

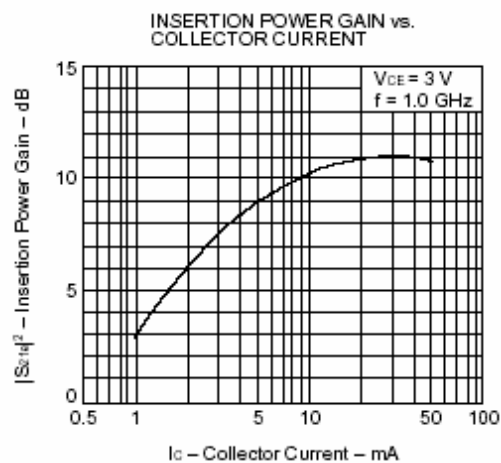
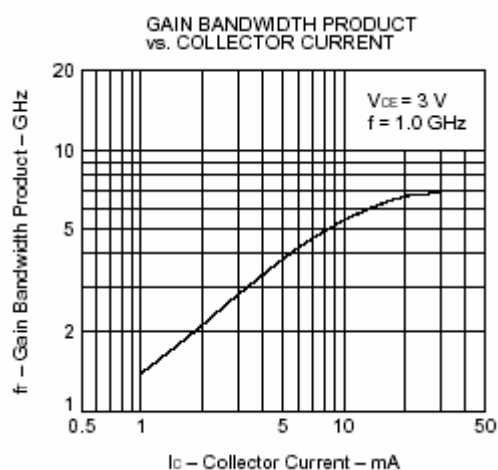
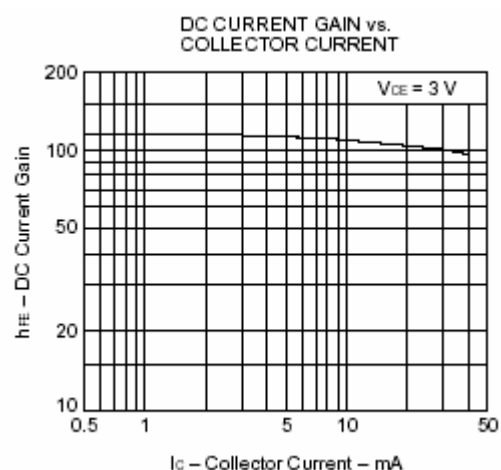
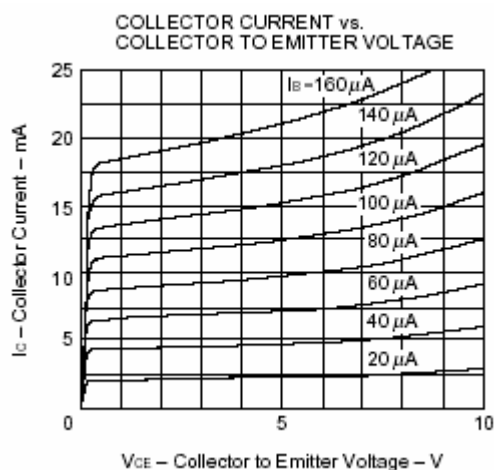
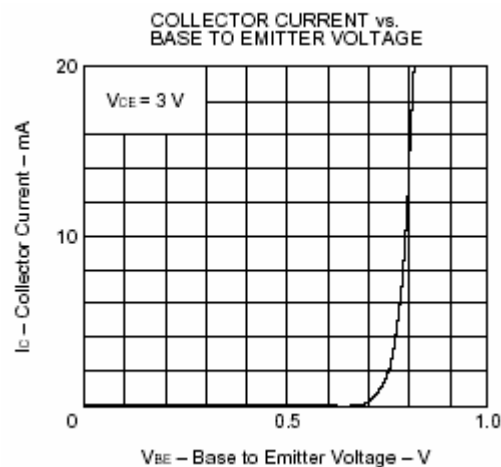
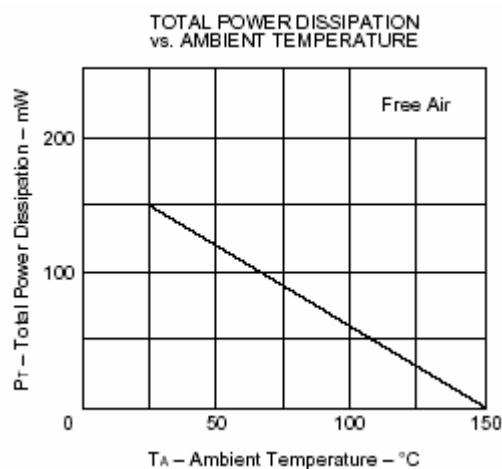
Parameter	Symbol	Min.	Typ.	Max.	Unit
DC Current Gain at $V_{CE}=3\text{V}$ , $I_C=7\text{mA}$					
Current Gain Group Q	$h_{FE}$	50	-	100	-
R	$h_{FE}$	80	-	160	-
S	$h_{FE}$	125	-	250	-
Collector Cutoff Current at $V_{CB}=10\text{V}$	$I_{CBO}$	-	-	1.0	$\mu\text{A}$
Emitter Cutoff Current at $V_{EB}=1\text{V}$	$I_{EBO}$	-	-	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.

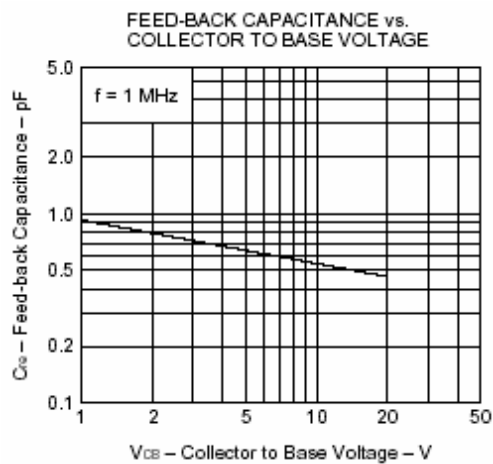
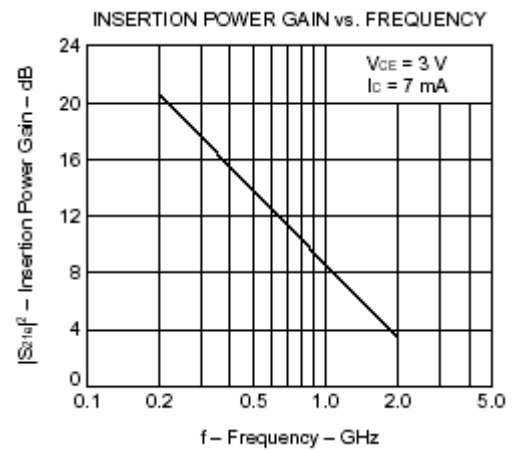
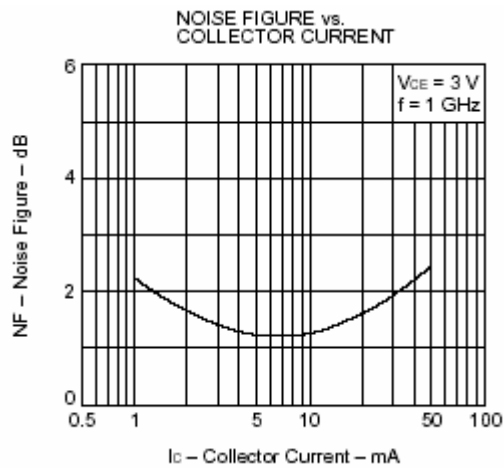
### Classification of $h_{FE}$

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

### Typical Characteristics

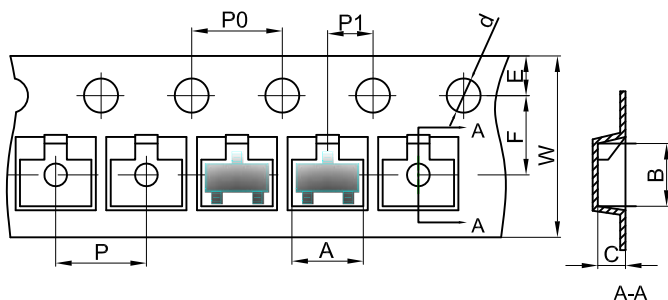


### Typical Characteristics



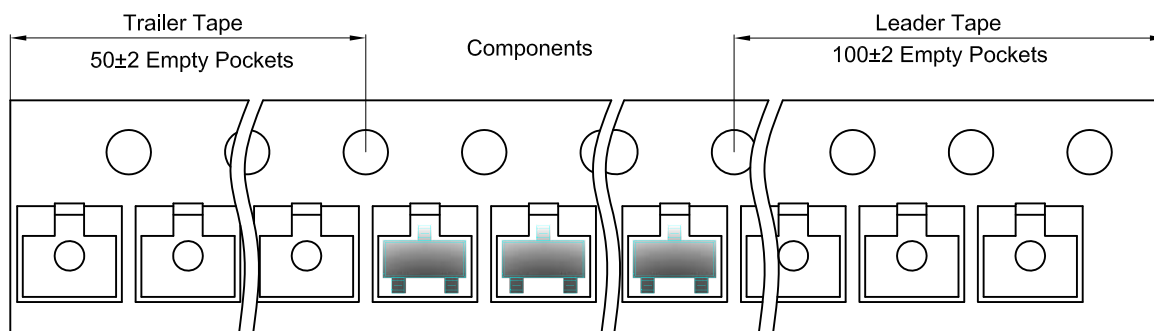
### SOT-23 Tape and Reel

#### SOT-23 Embossed Carrier Tape

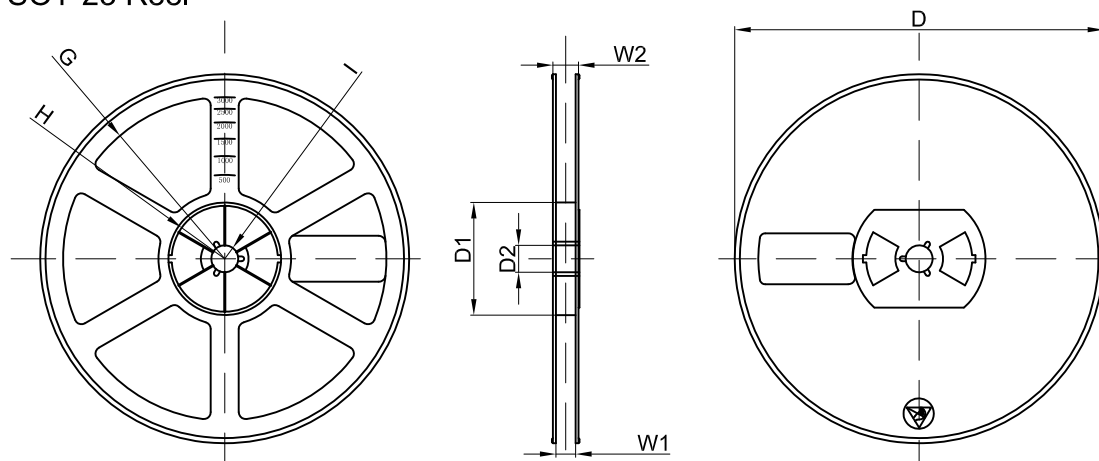


Dimensions are in millimeter										
Pkg type	A	B	C	d	E	F	P0	P	P1	W
SOT-23	3.15	2.77	1.22	Ø1.50	1.75	3.50	4.00	4.00	2.00	8.00

#### SOT-23 Tape Leader and Trailer

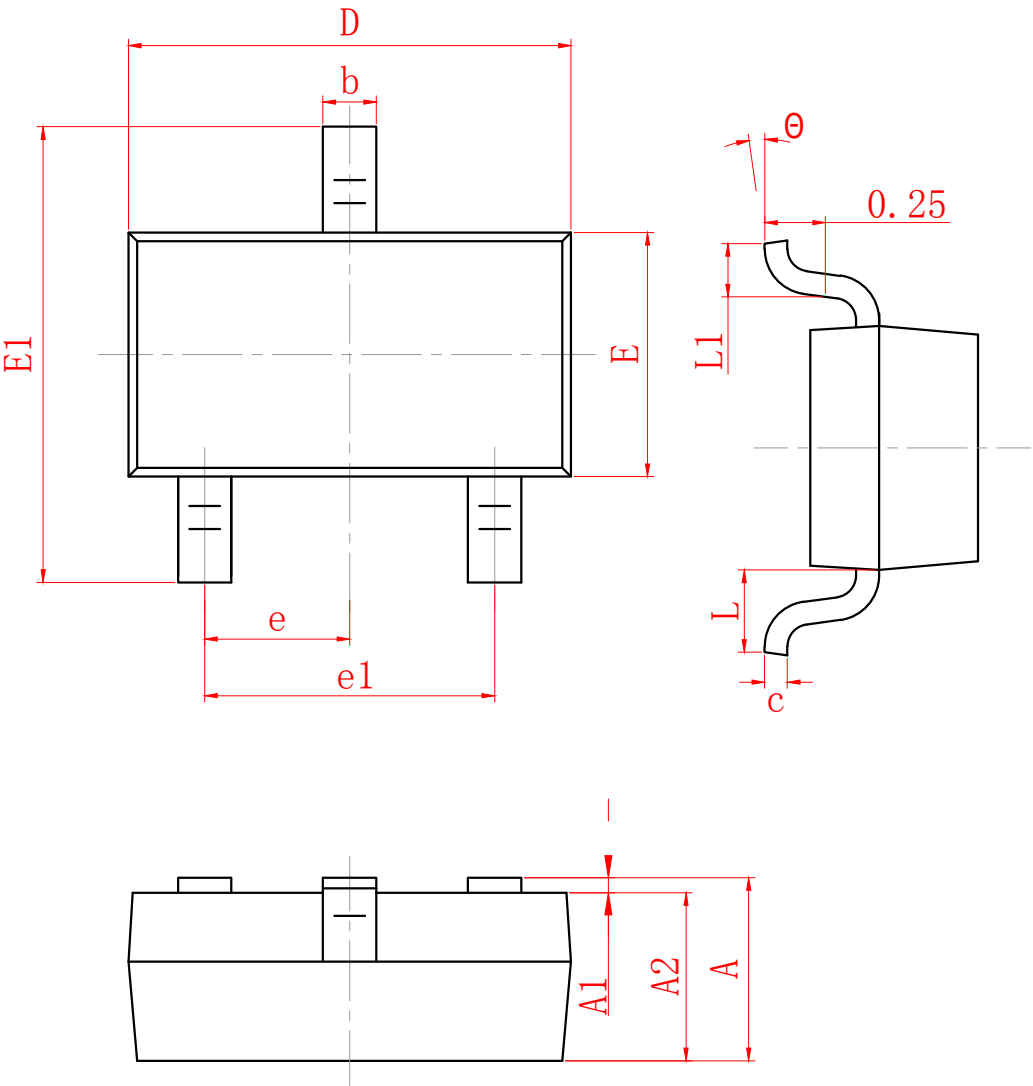


#### SOT-23 Reel



Dimensions are in millimeter								
Reel Option	D	D1	D2	G	H	I	W1	W2
7"Dia	Ø178.00	54.40	13.00	R78.00	R25.60	R6.50	9.50	12.30

REEL	Reel Size	Box	Box Size(mm)	Carton	Carton Size(mm)	G.W.(kg)
3000 pcs	7 inch	45,000 pcs	203×203×195	180,000 pcs	438×438×220	



SYMBOL	MILLIMETER	
	MIN	MAX
A	0.900	1.150
A1	0.000	0.100
A2	0.900	1.050
b	0.300	0.500
c	0.080	0.150
D	2.800	3.000
E	1.200	1.400
E1	2.250	2.550
e	0.950 TYP	
e1	1.800	2.000
L	0.550 REF	
L1	0.300	0.500
$\theta$	0°	8°

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