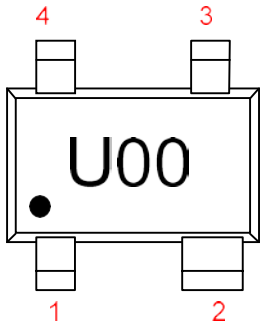
●Description

The UA2700 NPN silicon RF transistor provides low noise and high gain amplification is packaged in a 4-pin SOT343 plastic package.

●Features

Low-noise	: NF= 1.1 dB typ (f= 2 GHz).
High gain	: $\|S_{21e}\|^2$ = 17.5 dB typ (f= 2 GHz)
High cut-off frequency	: f_T=29 GHz typ (V_{CE} =3 V)



Pin #	Description
1	Collector
2, 4	Emitter
3	Base

●Typical Applications

DBS
LNB DRO
DVB
Cable
ISM
General Purpose

●Absolute Maximum Ratings

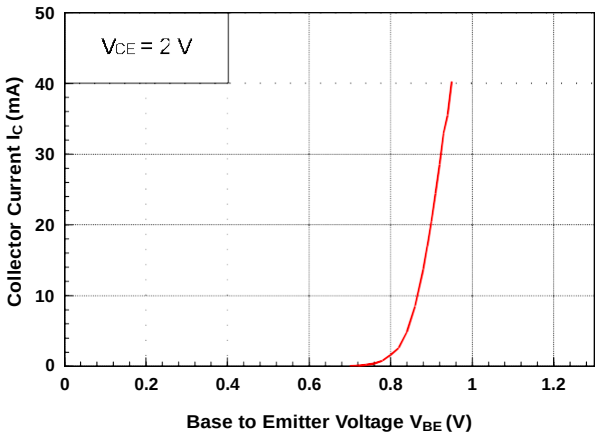
Symbol	Parameters	Conditions	Min.	Max.	Unit
V_{CBO}	Collector to Base Voltage	Open Emitter	-	10	V
V_{CEO}	Collector to Emitter Voltage	Open Base	-	4.0	V
V_{EBO}	Emitter to Base Voltage	Open Collector	-	1	V
I_C	Collector Current		-	35	mA
P_{tot}	Total Power Dissipation		-	150	mW
T_j	Junction Temperature		-	150	℃
T_{stg}	Storage Temperature		-65	150	℃

●Electrical Characteristics

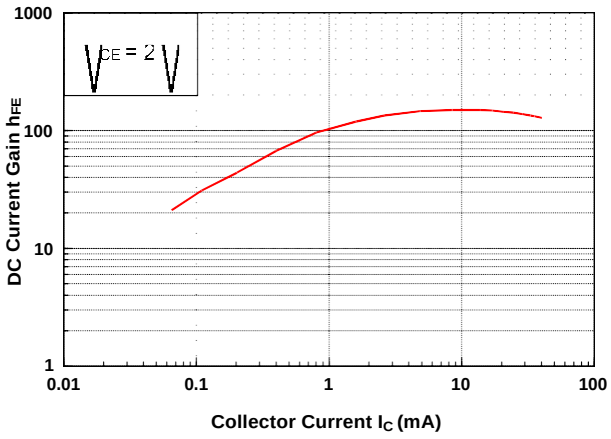
T_a = 25 ℃; unless otherwise specified.

Symbol	Parameters	Conditions	Min.	Typ.	Max.	Unit
h_{FE}	DC Current Gain	V_{CE}=2 V, I_C=5 mA	100	150	200	-
f_T	Gain Bandwidth Product	V_{CE}=3 V, I_C=30 mA	-	29	-	GHz
$\|S_{21e}\|^2$	Insertion Power Gain	V_{CE}=2 V, I_C=20 mA, f=2 GHz	14.5	17.5	-	dB
NF	Noise Figure	V_{CE}=2 V, I_C=5 mA, f=2 GHz	-	1.1	1.5	dB
MAG	Maximum Available Power Gain	V_{CE}=2 V, I_C=20 mA, f=2 GHz	-	19.5	-	dB
MSG	Maximum Stable Power Gain	V_{CE}=2 V, I_C=20 mA, f=2 GHz	-	20.5	-	dB
$P_{O(1\ dB)}$	Gain 1 dB Compression Output Power	V_{CE}=3 V, I_C=25 mA, f=2 GHz	-	13.5	-	dBm

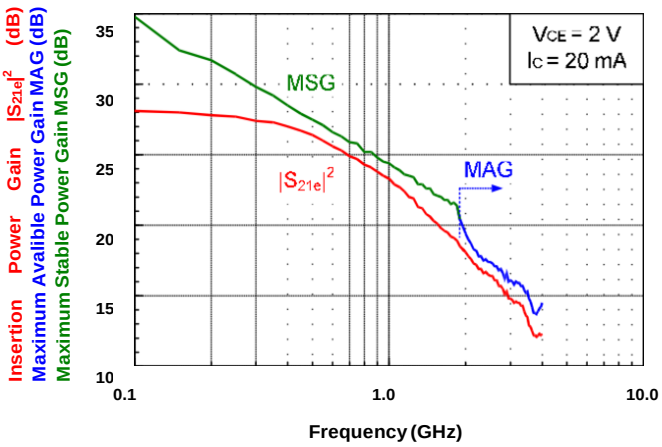
●Typical Characteristics (T_a = 25 ℃)



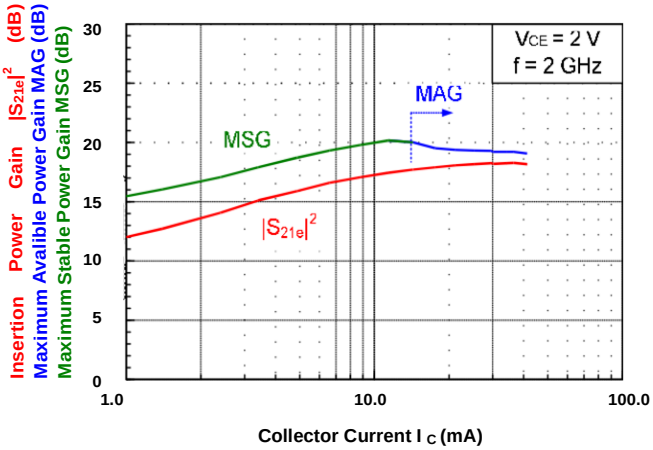
Collector Current vs.Base to Emitter Voltage



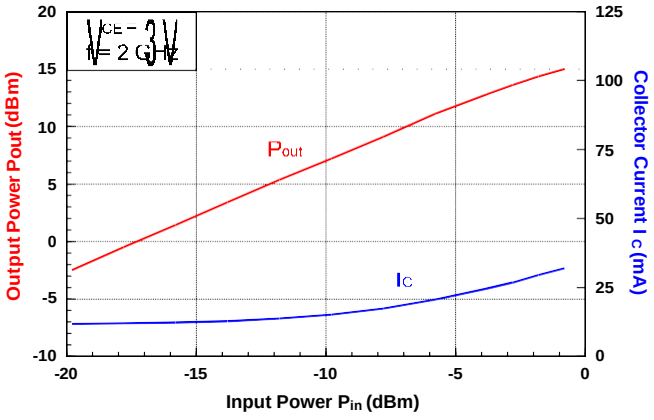
DC Current Gain vs.Collector Current



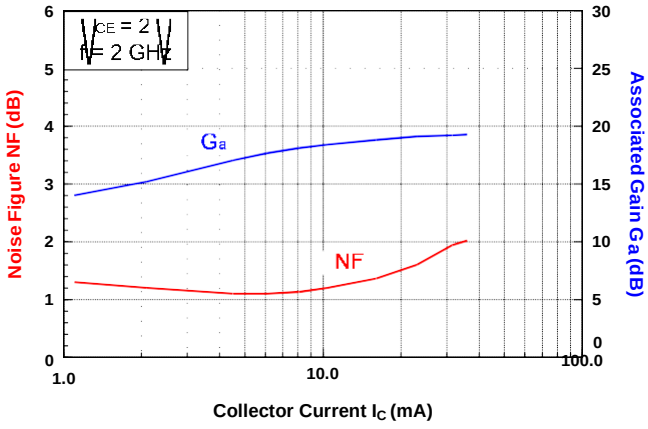
Insertion Power Gain,MAG,MSG vs,Frequency



Insertion Power Gain,MAG,MSG vs,Ic

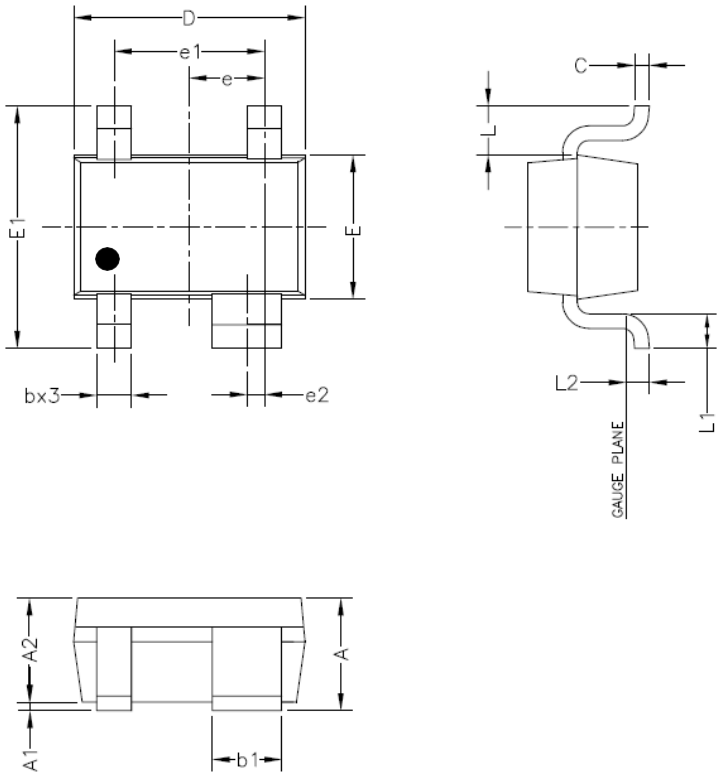


Output Power,Collector Current vs,Input Power



Noise Figure,Associated Gain vs,Collector Current

• SOT343 Package Drawing



Symbol	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	0.90	1.10	.036	.044
A1	0.025	0.10	.001	.004
A2	0.875	1.00	.035	.040
b	0.20	0.40	.008	.016
b1	0.40	0.60	.015	.024
C	0.10	0.15	.004	.006
D	1.90	2.10	.076	.084
E	1.15	1.35	.046	.054
E1	2.00	2.30	.080	.091
e	0.65 BSC.		.026 BSC.	
e1	1.30 BSC		.052 BSC.	
e2	0.15 BSC.		.006 BSC.	
L	0.425 REF.		.017 REF.	
L1	0.25	0.45	.010	.018
L2	0.200 REF.		.007 REF.	