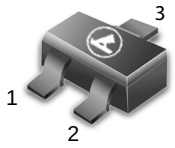
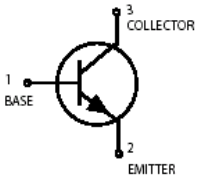
High-Frequency Amplifier Transistor

L2SC4226QT1



SC-70/SOT-323



DESCRIPTION

The L2SC4226QT1 is a low supply voltage transistor designed for VHF, U HF low noise amplifier.

It is suitable for a high density surface mount assembly since the transistor has been applied small mini mold package.

FEATURES

- Low Noise
  NF = 1.2 dB TYP. @ f = 1 GHz, V_{CE} = 3 V, I_C = 7 mA
- High Gain
  $|S_{21e}|^2$ = 9.0 dB TYP. @ f = 1 GHz, V_{CE} = 3 V, I_C = 7 mA
- Small Mini Mold Package
  EIAJ: SC-70

L2SC4226QT1

ABSOLUTE MAXIMUM RATINGS (T_A = 25 °C)

Collector to Base Voltage	V_{CBO}	20	V
Collector to Emitter Voltage	V_{CEO}	12	V
Emitter to Base Voltage	V_{EBO}	3	V
Collector Current	I_C	100	mA
Total Power Dissipation	P_T	150	mW
Junction Temperature	T_j	150	°C
Storage Temperature	T_{stg}	–65 to +150	°C

ELECTRICAL CHARACTERISTICS (T_A = 25 °C)

CHARACTERISTIC	SYMBOL	MIN.	TYP.	MAX.	UNIT	TEST CONDITION
Collector Cutoff Current	I_{CBO}			1.0	μA	V_{CB} = 10 V, I_E = 0
Emitter Cutoff Current	I_{EBO}			1.0	μA	V_{EB} = 1 V, I_C = 0
DC Current Gain	h_{FE}	125		250		V_{CE} = 3 V, I_C = 7 mA*1
Gain Bandwidth Product	f_T	3.0	4.5		GHz	V_{CE} = 3 V, I_C = 7 mA
Feed back Capacitance	C_{re}		0.7	1.5	pF	V_{CE} = 3 V, I_E = 0, f = 1 MHz*2
Insertion Power Gain	$\|S_{21e}\|^2$	7	9		dB	V_{CE} = 3 V, I_C = 7 mA, f = 1 GHz
Noise Figure	NF		1.2	2.5	dB	V_{CE} = 3 V, I_C = 7 mA, f = 1 GHz

***1** Pulse Measurement ; PW ≤ 350 μs, Duty Cycle ≤ 2 % Pulsed.

***2** Measured with 3 terminals bridge, Emitter and Case should be grounded.

TYPICAL CHARACTERISTICS (T_A = 25 °C)

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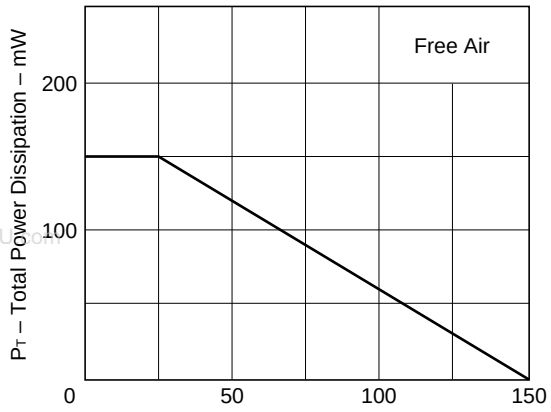
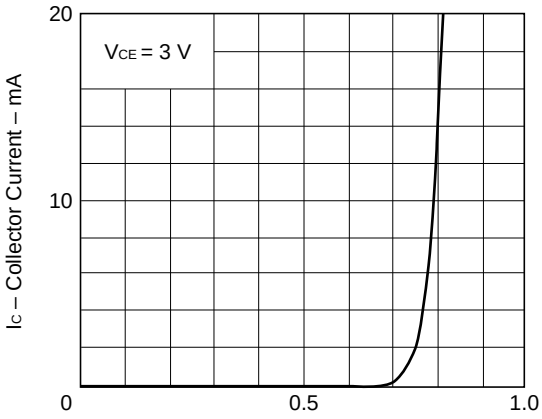
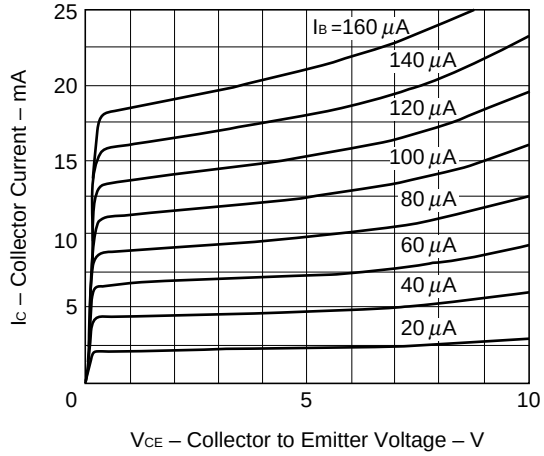
TOTAL POWER DISSIPATION
vs. AMBIENT TEMPERATURE



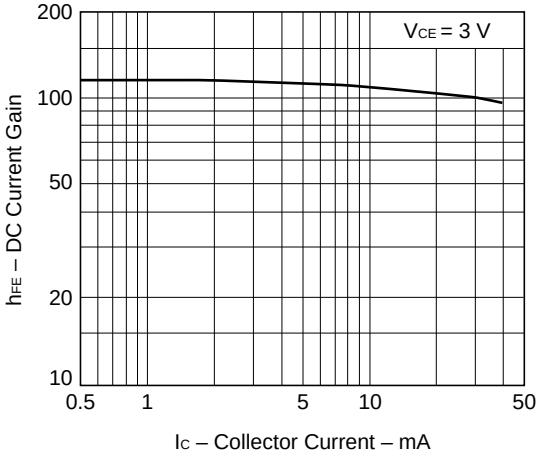
COLLECTOR CURRENT vs.
BASE TO EMITTER VOLTAGE



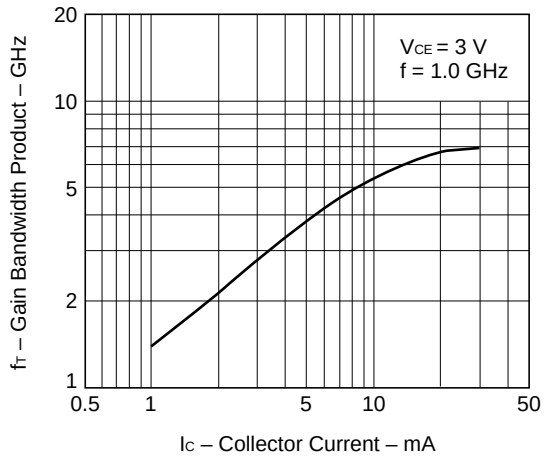
COLLECTOR CURRENT vs.
COLLECTOR TO EMITTER VOLTAGE



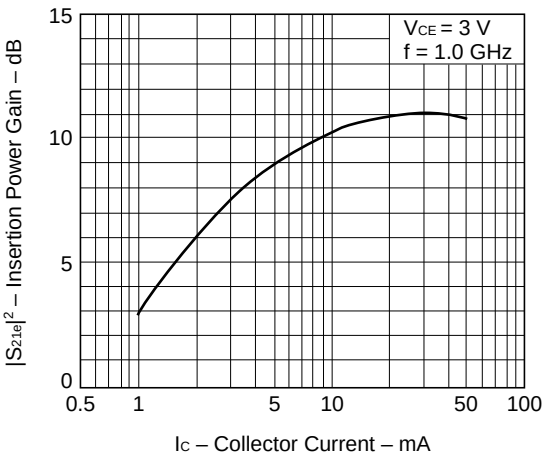
DC CURRENT GAIN vs.
COLLECTOR CURRENT



GAIN BANDWIDTH PRODUCT
vs. COLLECTOR CURRENT



INSERTION POWER GAIN vs.
COLLECTOR CURRENT



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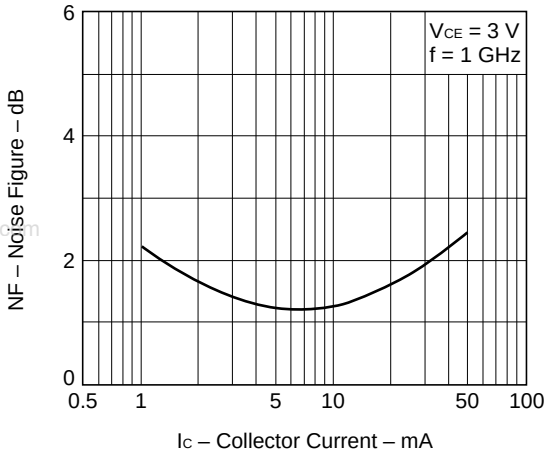
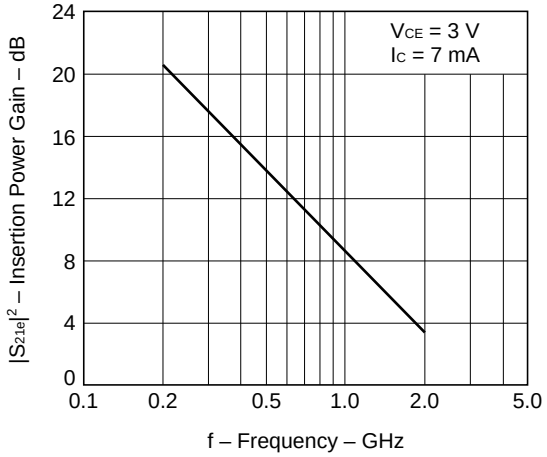
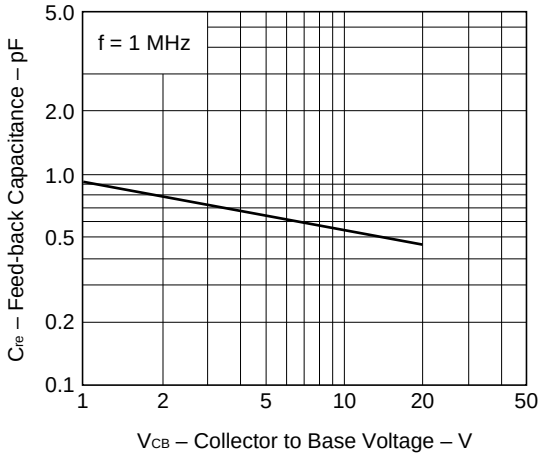
NOISE FIGURE vs.
COLLECTOR CURRENT



INSERTION POWER GAIN vs. FREQUENCY



FEED-BACK CAPACITANCE vs.
COLLECTOR TO BASE VOLTAGE



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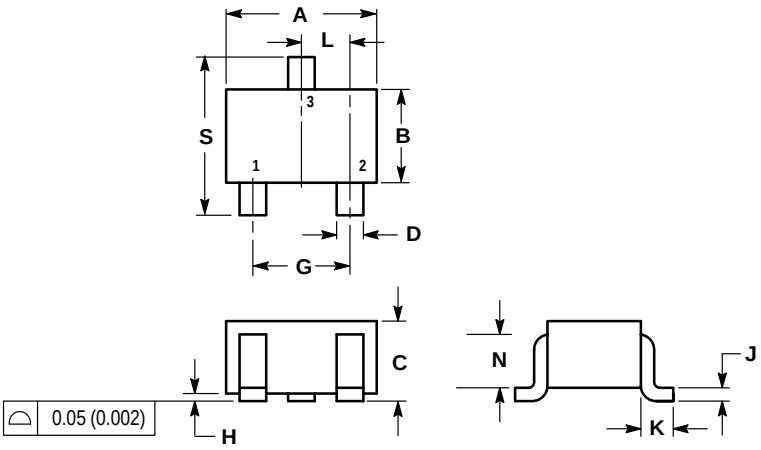
SC−70 / SOT−323

NOTES:
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCH.



DIM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.071	0.087	1.80	2.20
B	0.045	0.053	1.15	1.35
C	0.032	0.040	0.80	1.00
D	0.012	0.016	0.30	0.40
G	0.047	0.055	1.20	1.40
H	0.000	0.004	0.00	0.10
J	0.004	0.010	0.10	0.25
K	0.017 REF		0.425 REF	
L	0.026 BSC		0.650 BSC	
N	0.028 REF		0.700 REF	
S	0.079	0.095	2.00	2.40

PIN 1. BASE
2. EMITTER
3. COLLECTOR