

isc Silicon NPN RF Transistor

2SC4260

DESCRIPTION

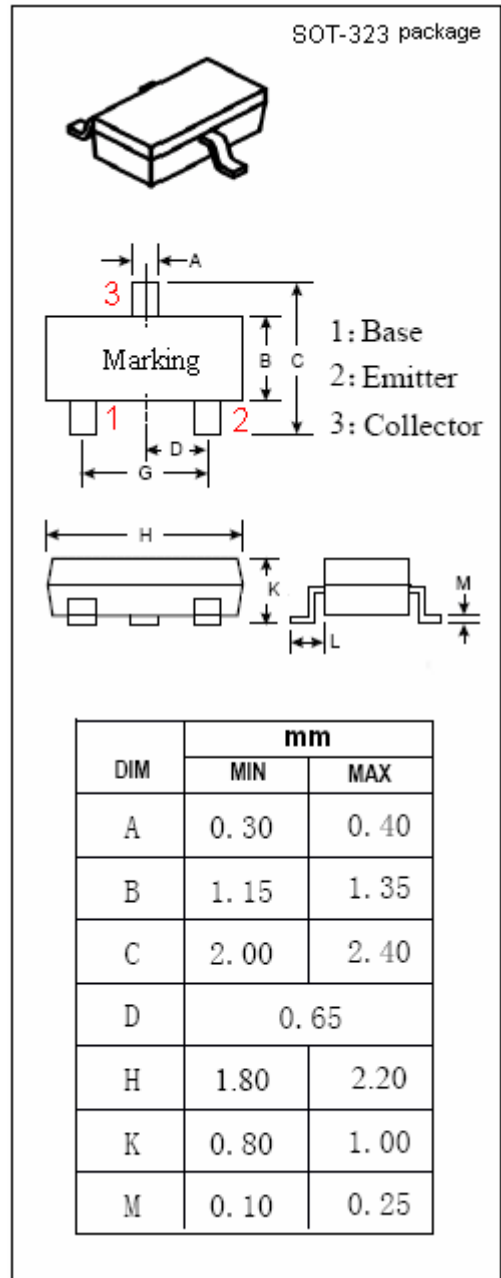
- Low Noise
- High Gain

APPLICATIONS

- Designed for use in UHF frequency converter , wide band amplifier.

ABSOLUTE MAXIMUM RATINGS($T_a=25^{\circ}\text{C}$)

SYMBOL	PARAMETER	VALUE	UNIT
V_{CBO}	Collector-Base Voltage	25	V
V_{CEO}	Collector-Emitter Voltage	13	V
V_{EBO}	Emitter-Base Voltage	3.0	V
I_C	Collector Current-Continuous	50	mA
P_C	Collector Power Dissipation @ $T_C=25^{\circ}\text{C}$	0.1	W
T_J	Junction Temperature	150	$^{\circ}\text{C}$
T_{stg}	Storage Temperature Range	-55~150	$^{\circ}\text{C}$



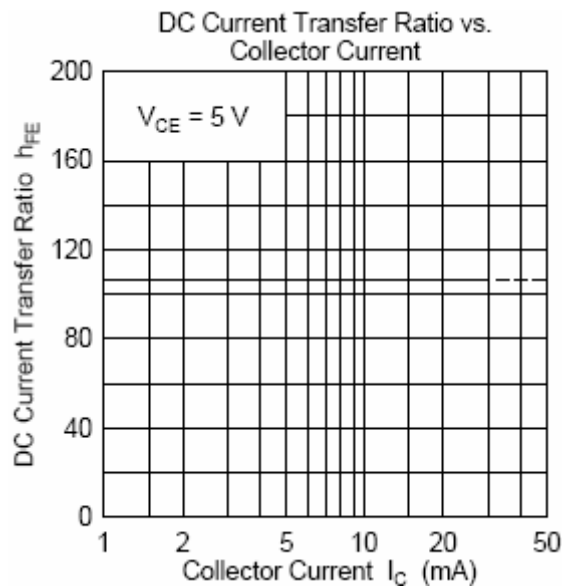
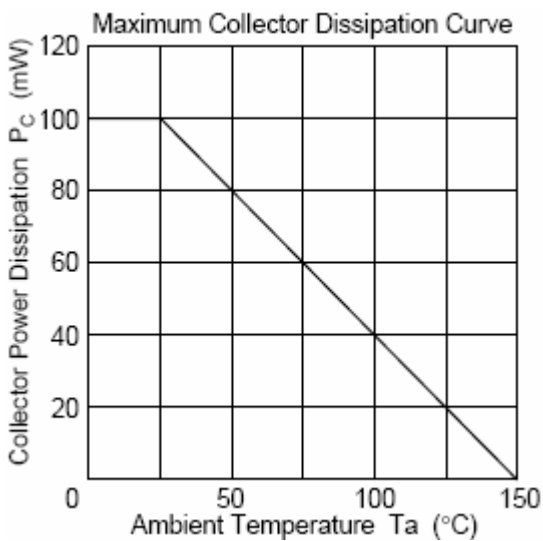
isc Silicon NPN RF Transistor

2SC4260

ELECTRICAL CHARACTERISTICS

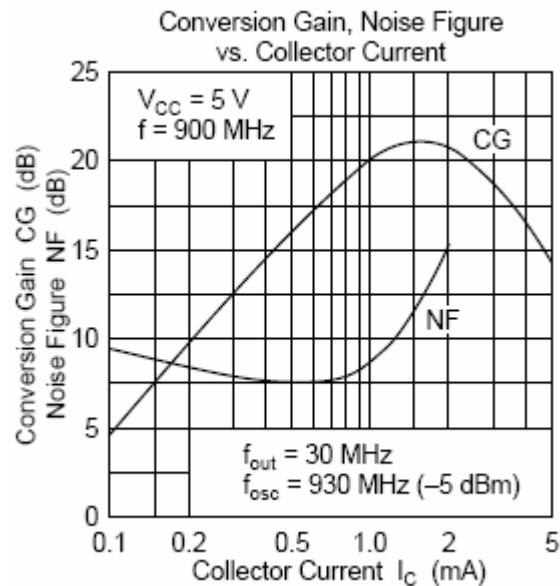
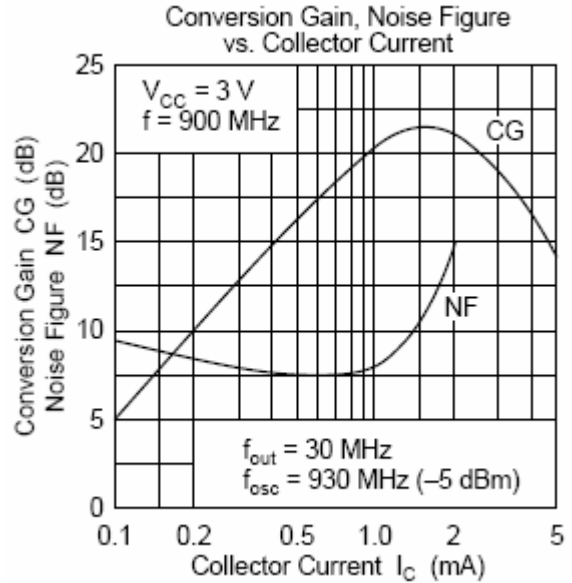
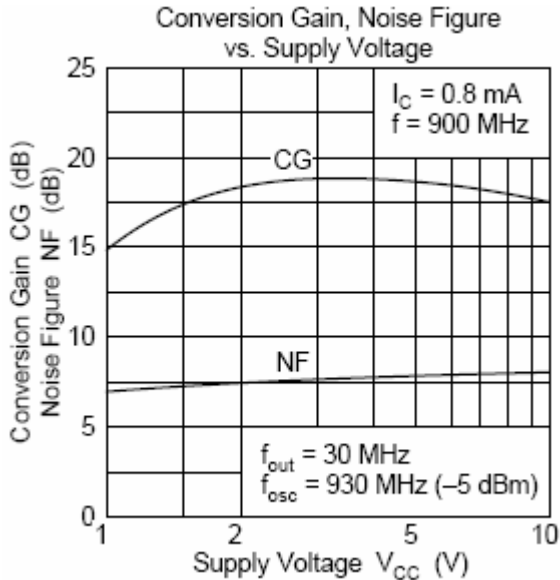
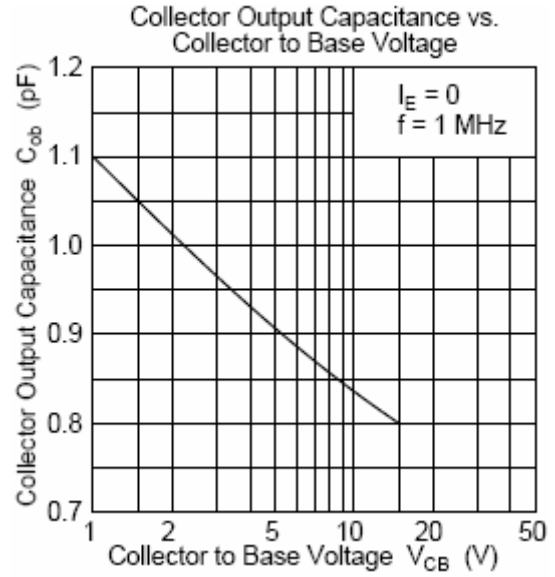
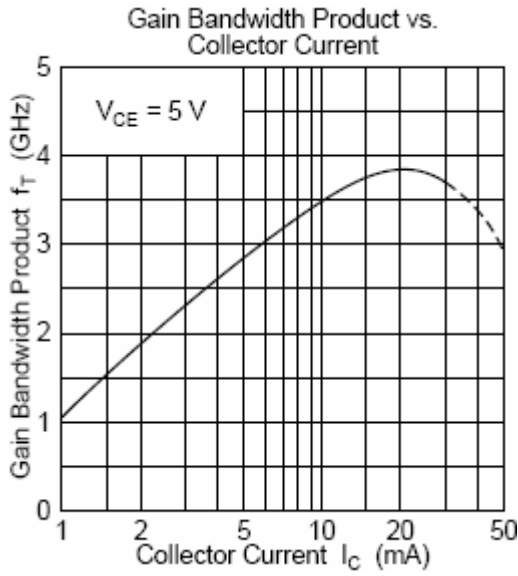
T_C=25°C unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
V _{(BR)CBO}	Collector-Base Breakdown Voltage	I _C = 10 μ A ; I _E = 0	25			V
I _{CBO}	Collector Cutoff Current	V _{CB} = 15V; I _E = 0			0.1	μ A
I _{CEO}	Collector Cutoff Current	V _{CE} = 13V; R _{BE} = ∞			10	μ A
I _{EBO}	Emitter Cutoff Current	V _{EB} = 3V; I _C = 0			0.3	μ A
V _{CE(sat)}	Collector-Emitter Saturation Voltage	I _C = 20mA ; I _B = 4mA			0.3	V
h _{FE}	DC Current Gain	I _C = 5mA ; V _{CE} = 5V	50		180	
f _T	Current-Gain—Bandwidth Product	I _C = 5mA ; V _{CE} = 5V	3.0	3.8		GHz
C _{OB}	Output Capacitance	I _E = 0 ; V _{CB} = 10V;f= 1.0MHz		0.85	1.3	pF
CG	Conversion Gain	I _C = 0.8mA ; V _{CC} = 5V;f= 900MHz f _{OSC} = 930MHz (-5dBm), f _{out} = 30MHz		19		dB
NF	Noise Figure	I _C = 0.8mA ; V _{CC} = 5V;f= 900MHz f _{OSC} = 930MHz (-5dBm), f _{out} = 30MHz		8		dB



isc Silicon NPN RF Transistor

2SC4260



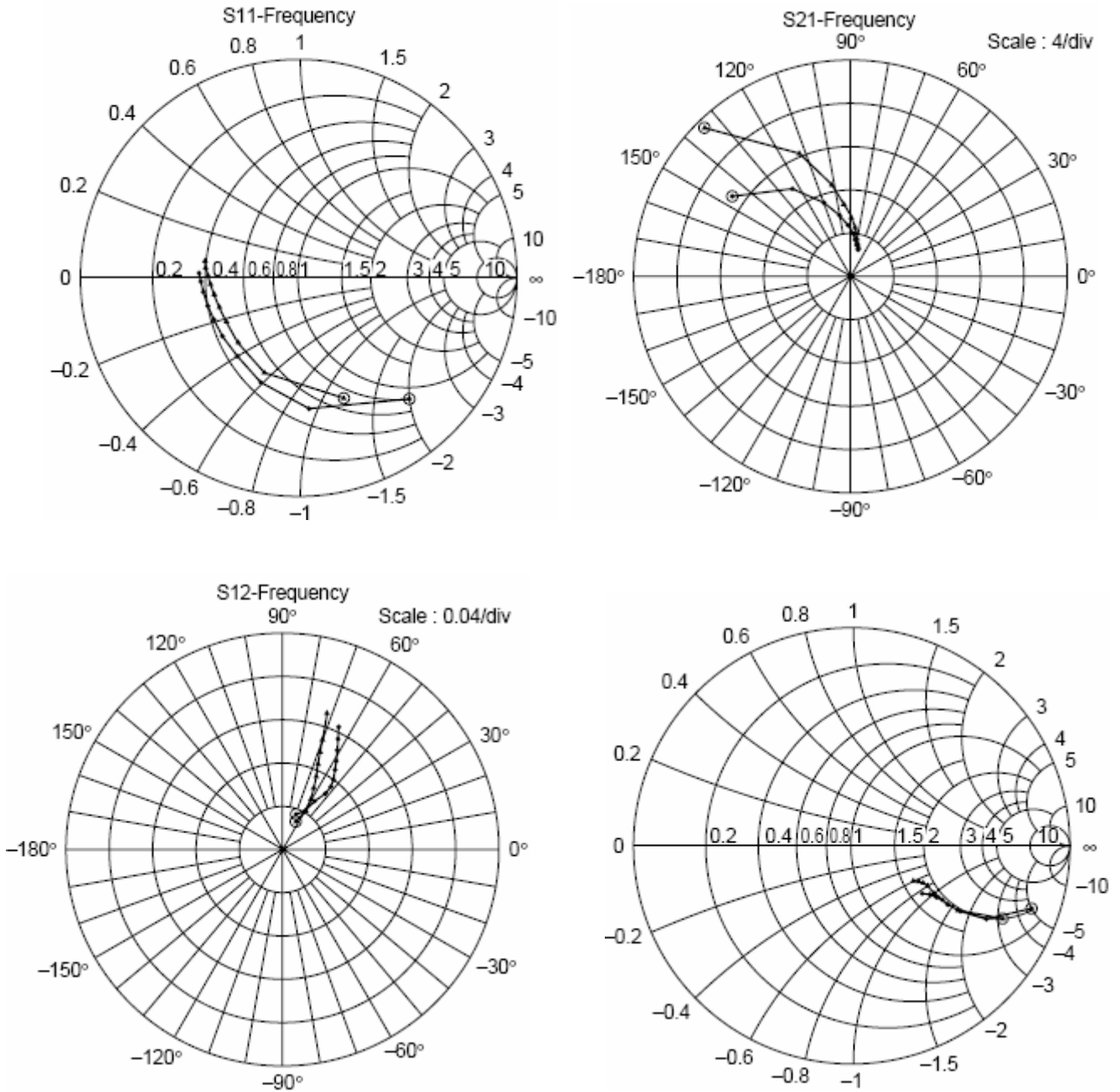
isc Silicon NPN RF Transistor

2SC4260

S-PARAMETERS (Emitter Common)

Test Condition $V_{CE} = 5V$, 100MHz to 1000MHz (100 MHz Step), $Z_O = 50\Omega$

$I_C = 5\text{ mA}$ ●————→
 $I_C = 10\text{ mA}$ ●————→



isc Silicon NPN RF Transistor

2SC4260

S-PARAMETERS (Emitter Common) $V_{CE} = 5\text{ V}$, $I_c = 5\text{ mA}$, $Z_o = 50\ \Omega$

Freque.	S ₁₁		S ₂₁		S ₁₂		S ₂₂	
	MAG.	ANG.	MAG.	ANG.	MAG.	ANG.	MAG.	ANG.
100	0.744	-48.4	13.142	145.9	0.034	67.5	0.876	-19.1
200	0.599	-85.5	9.669	123.5	0.053	55.9	0.702	-28.2
300	0.506	-110.7	7.201	109.5	0.064	52.6	0.586	-30.9
400	0.457	-128.9	5.696	100.6	0.072	52.7	0.520	-31.2
500	0.440	-143.5	4.687	93.9	0.079	54.3	0.480	-31.2
600	0.430	-155.1	3.977	88.1	0.087	57.1	0.452	-31.5
700	0.437	-163.2	3.453	83.5	0.095	59.4	0.432	-31.7
800	0.441	-170.9	3.070	79.1	0.104	61.3	0.417	-32.4
900	0.452	-177.1	2.746	75.4	0.113	63.6	0.402	-33.4
1000	0.462	177.5	2.508	71.9	0.122	65.6	0.390	-34.5

 $V_{CE} = 5\text{ V}$, $I_c = 10\text{ mA}$, $Z_o = 50\ \Omega$

Freque.	S ₁₁		S ₂₁		S ₁₂		S ₂₂	
	MAG.	ANG.	MAG.	ANG.	MAG.	ANG.	MAG.	ANG.
100	0.585	-69.3	19.233	134.4	0.028	63.8	0.768	-25.6
200	0.460	-110.1	12.238	112.6	0.041	58.1	0.564	-31.4
300	0.408	-133.9	8.571	101.3	0.052	60.0	0.468	-30.5
400	0.390	-149.7	6.608	94.5	0.062	62.9	0.420	-29.1
500	0.390	-160.7	5.348	88.7	0.073	65.3	0.394	-28.1
600	0.391	-169.8	4.503	84.4	0.084	67.7	0.375	-27.8
700	0.404	-176.7	3.884	80.3	0.095	69.1	0.361	-27.7
800	0.411	178.0	3.446	76.8	0.107	70.3	0.350	-28.2
900	0.426	173.1	3.069	73.4	0.119	71.5	0.339	-29.0
1000	0.436	169.8	2.803	70.7	0.131	72.2	0.330	-29.7

isc Silicon NPN RF Transistor

2SC4260

Y-PARAMETERS (Emitter Common)

 $V_{CE} = 5\text{ V}$, $I_C = 5\text{ mA}$

Freque.	S_{11}		S_{21}		S_{12}		S_{22}	
	MAG.	ANG.	MAG.	ANG.	MAG.	ANG.	MAG.	ANG.
100	2.663	5.357	161.804	-34.193	-0.002	-0.425	0.055	0.627
200	5.558	10.174	147.899	-63.499	-0.012	-0.880	0.025	1.270
300	9.651	13.450	125.634	-87.205	-0.041	-1.354	0.026	2.024
400	14.160	15.066	102.261	-102.289	-0.093	-1.820	0.044	2.772
500	18.753	15.624	80.041	-110.827	-0.150	-2.309	0.048	3.510
600	23.019	14.727	57.826	-114.923	-0.214	-2.798	0.124	4.301
700	26.444	13.908	40.437	-113.783	-0.263	-3.305	0.211	4.964
800	29.378	12.040	24.049	-111.316	-0.379	-3.822	0.268	5.828
900	31.931	9.960	10.602	-106.726	-0.466	-4.371	0.407	6.578
1000	33.671	7.667	-0.922	-101.485	-0.586	-4.913	0.524	7.381

 $V_{CE} = 5\text{ V}$, $I_C = 10\text{ mA}$

Freque.	S_{11}		S_{21}		S_{12}		S_{22}	
	MAG.	ANG.	MAG.	ANG.	MAG.	ANG.	MAG.	ANG.
100	5.212	6.660	273.909	-97.915	-0.002	-0.430	0.029	0.527
200	10.124	10.767	208.225	-154.453	-0.015	-0.876	0.011	1.307
300	15.094	11.730	141.558	-172.198	-0.044	-1.347	0.047	2.035
400	18.933	10.991	93.174	-169.490	-0.089	-1.817	0.064	2.735
500	21.811	10.074	58.181	-158.809	-0.133	-2.299	0.096	3.501
600	23.927	8.389	32.829	-146.284	-0.195	-2.785	0.173	4.226
700	25.848	7.170	15.188	-134.592	-0.276	-3.302	0.224	5.010
800	26.851	5.955	2.733	-123.322	-0.353	-3.808	0.282	5.760
900	28.097	4.633	-7.642	-113.209	-0.443	-4.375	0.394	6.551
1000	28.686	3.829	-13.979	-104.651	-0.523	-4.908	0.466	7.215