

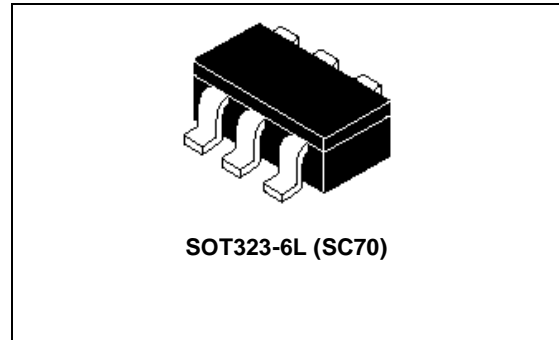


STB7102

0.5/2.5 GHz LO BUFFER AMPLIFIER

PRELIMINARY DATA

- OPERATING FREQUENCY 500-2500MHz
- LOW CURRENT CONSUMPTION (4mA @ 2.7V)
- EXCELLENT ISOLATION (43dB @ 850MHz)
- INPUT AND OUTPUT RETURN LOSS > 15dB
- ULTRA MINIATURE SOT323-6L PACKAGE (1.15 x 1.8 x 0.8 mm)



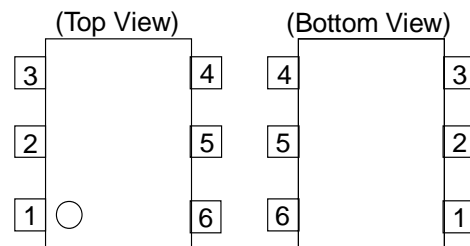
SOT323-6L (SC70)

DESCRIPTION

The STB7102, designed for RF applications (0.5/2.5GHz), is a high isolation Local Buffer Amplifier. Manufactured in the third generation of ST proprietary bipolar process, it offers an excellent isolation (43dB) and a good linearity using only 4mA of current consumption. STB7102 is housed in a ultra-miniature package SOT323-6L surface mount package, requiring very little board space (50% reduction vs SOT143 Package). SOT323-6L dimensions are 1.15mmx1.8mm with a 0.8mm thickness.

PIN CONNECTION

Pin No.	Pin Name
1	INPUT
2	GND
3	GND
4	OUTPUT
5	GND
6	VCC



APPLICATION

UHF LO BUFFER AMPLIFIER for CDMA standard.

ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Conditions	Value	Unit
V _{cc}	Supply voltage		3.3	V
T _{stg}	Storage temperature		-40 to +100	°C
T _a	Operating ambient temperature		-30 to +85	°C

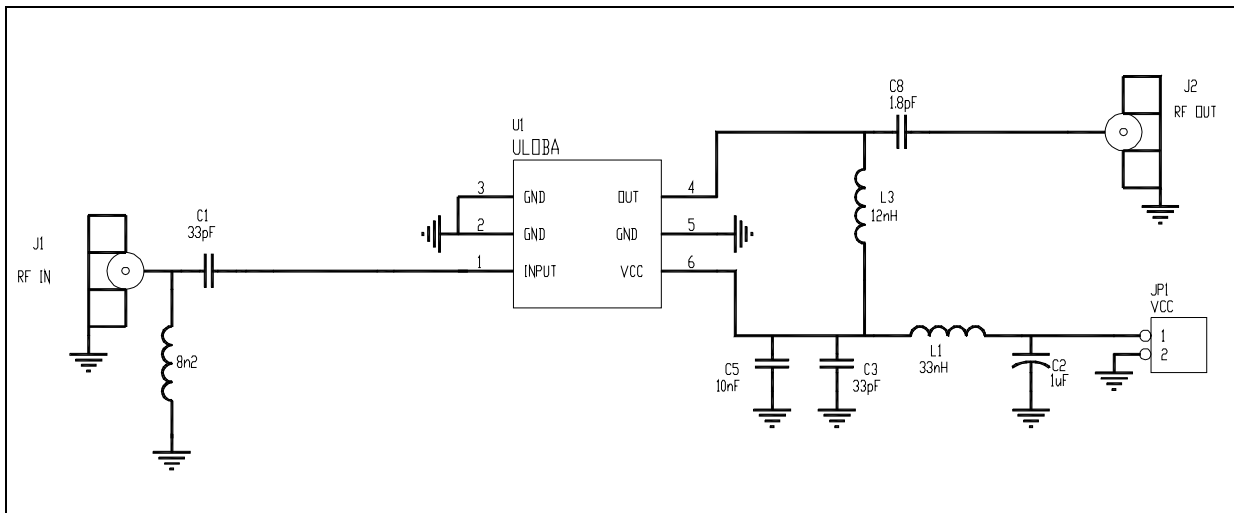
STB7102

ELECTRICAL CHARACTERISTICS

($T_a = +25^{\circ}\text{C}$, $V_{cc} = 2.7\text{V}$, $Z_s = Z_L = 50\Omega$, tested in circuit shown in fig.1, unless otherwise specified)

Symbol	Parameters	Test Conditions	Min	Typ	Max	Unit
f	Frequency Range			850		MHz
V_{cc}	Supply Voltage		2.6	2.7	2.8	V
I_{cc}	Circuit Current			4		mA
P1dB	Output Power at 1dB Compression Point			-3.8		dBm
G_P	Small Gain			18.4		dB
NF	Noise Figure			2.3		dB
	Isolation			43		dB
RL_{in}	Input Return Loss			15.5		dB
RL_{out}	Output Return Loss			20		dB

Figure 1 850MHz Application Circuit Configuration

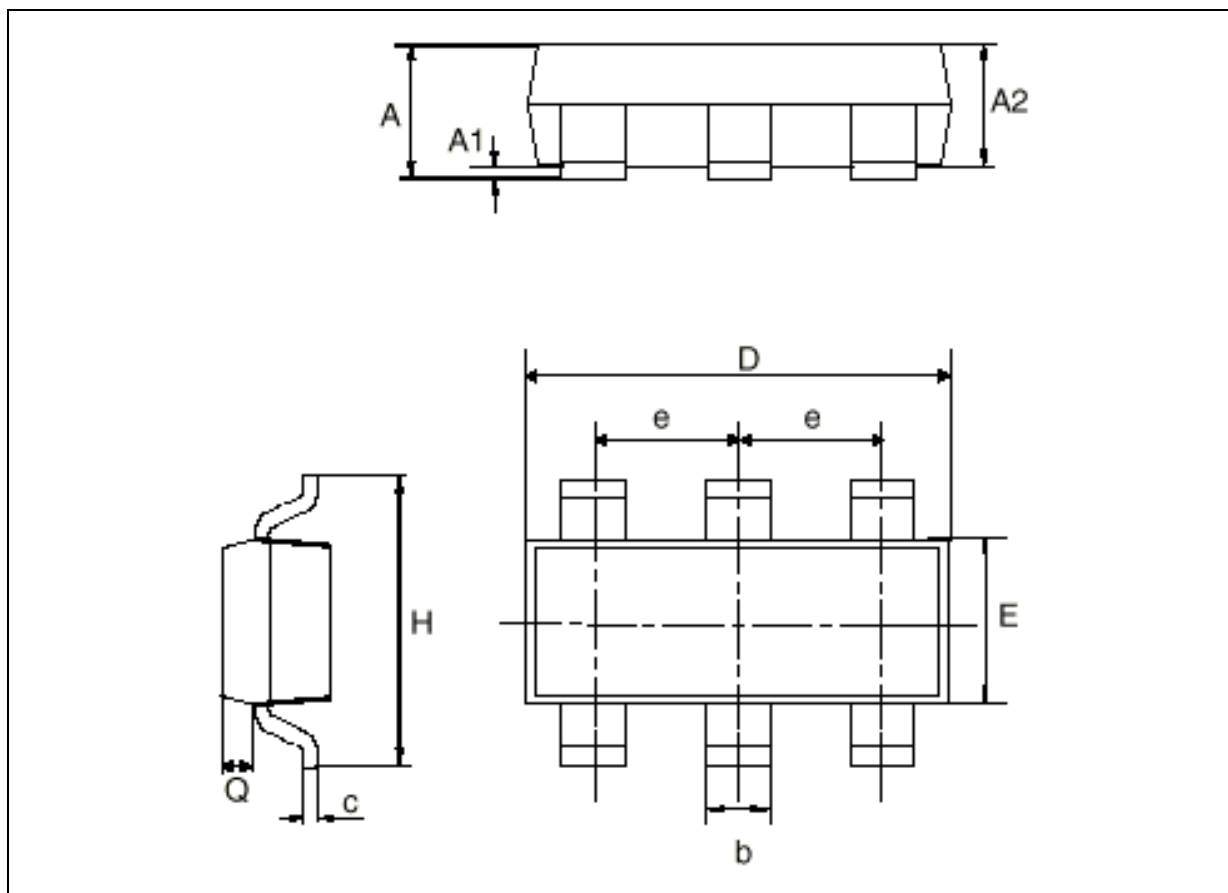


COMMON SOURCE S-PARAMETER (STB7102)(V_{cc} = 2.7V I_c = 4.2mA, Z_s = Z_L = 50Ω, tested in circuit shown in fig.1, unless otherwise specified)

Freq(MHz)	S11		S12		S21		S22	
	IS11I	∠φ	IS12I	∠φ	IS21I	∠φ	IS22I	∠φ
500	0.7912	90.9	0.000192	40.06	2.262	-27.69	0.9397	-67.03
510	0.7765	89.33	0.000273	27.05	2.414	-31.76	0.9263	-70.03
520	0.7547	85.05	0.000276	-43.97	2.568	-35.64	0.9264	-71.69
530	0.7465	82.78	0.000844	-109.3	2.728	-38.14	0.92	-74.28
540	0.7209	79.53	0.00054	7.166	2.897	-41.26	0.9137	-75.42
550	0.7048	77.57	0.000437	-69.6	3.123	-44.58	0.8944	-78
560	0.6785	74.6	0.000997	-124.6	3.409	-48.06	0.8932	-80.71
570	0.6627	70.54	0.000798	-34.62	3.667	-52.3	0.8842	-81.71
580	0.6434	67.66	0.00156	-75.32	3.946	-56.58	0.8677	-84.91
590	0.6198	63.94	0.000455	-59.17	4.256	-61.42	0.8573	-87.04
600	0.5941	61.33	0.00135	-59.89	4.549	-66.16	0.836	-90.02
610	0.5626	58.46	0.000952	-122.5	4.822	-70.9	0.8297	-92.17
620	0.5472	53.85	0.000799	-109.7	5.104	-75.35	0.8075	-95.13
630	0.525	49.87	0.001212	-72.49	5.369	-79.73	0.7831	-97.98
640	0.4935	47.15	0.001282	-112	5.652	-84.81	0.7623	-101.1
650	0.4675	42.76	0.000999	-99.19	5.957	-90.02	0.7474	-104
660	0.4408	39.3	0.001742	-77.05	6.263	-95.07	0.723	-106.7
670	0.4201	35.43	0.002513	-89.24	6.507	-100	0.6867	-110.7
680	0.3979	29.57	0.002513	-97.66	6.748	-104.8	0.6618	-114.2
690	0.3674	26.32	0.00273	-102	7.071	-110	0.625	-117.7
700	0.3378	21.19	0.003051	-117.4	7.346	-115.4	0.5966	-121.9
710	0.3165	14.83	0.002636	-121	7.556	-119.9	0.5618	-125.8
720	0.2998	10.23	0.003889	-117	7.77	-125	0.5164	-128.9
730	0.2707	4.143	0.003778	-120.6	8.001	-130.4	0.4715	-133.4
740	0.251	-2.216	0.003436	-122.7	8.244	-135.6	0.4224	-136.8
750	0.2231	-9.044	0.004452	-127.6	8.403	-141.4	0.3795	-142.1
760	0.2107	-16.21	0.004496	-132.6	8.515	-146.8	0.3339	-145.9
770	0.194	-24.35	0.004715	-136.5	8.607	-152.2	0.2836	-151.2
780	0.2001	-37.21	0.006679	-114.7	8.668	-157.4	0.2089	-156
790	0.1674	-44.27	0.005471	-150	8.733	-162.6	0.184	-161.1
800	0.1555	-52.61	0.004955	-152.6	8.692	-167.8	0.1354	-171.5
810	0.1525	-64.59	0.005907	-158	8.622	-172.5	0.09359	180
820	0.1622	-75.56	0.005453	-155.7	8.573	-177.5	0.04243	157.3
830	0.1548	-89.1	0.006083	-169.2	8.567	177.7	0.03485	82.42
840	0.1606	-98.91	0.006532	-169.2	8.483	173.6	0.06089	39.79
850	0.1681	-108.3	0.007722	-175.9	8.34	168.3	0.09718	21.64
860	0.1777	-114.9	0.007444	179.6	8.189	164	0.1387	14.58
870	0.1896	-122.4	0.007546	179.4	8.123	159.6	0.1817	7.319
880	0.1942	-128.9	0.00696	172	7.966	155.9	0.2193	4.383
890	0.1989	-136.6	0.007551	175.6	7.766	152.7	0.2524	0.6495
900	0.2118	-139.5	0.008557	170.9	7.578	149.3	0.2841	-3.914
910	0.2265	-142.7	0.008454	158	7.52	145.2	0.3192	-8.427
920	0.2332	-147.9	0.008281	155.8	7.461	141.8	0.3502	-11.25
930	0.2408	-154.2	0.008946	150.9	7.301	138.2	0.3756	-14.23
940	0.2568	-158.3	0.009578	155.6	7.083	134	0.3942	-16.57
950	0.2699	-160.9	0.009597	149.1	6.88	129.9	0.4138	-18.81
960	0.2769	-163.5	0.009091	144.4	6.683	127	0.4371	-21.63
970	0.2822	-167.1	0.009159	139.4	6.476	124.8	0.464	-23.52
980	0.2864	-171.7	0.01024	137	6.239	122	0.485	-25.77
990	0.2967	-173.5	0.01024	134.7	6.065	119.9	0.4971	-28.35
1000	0.3016	-173.9	0.01079	129.8	5.998	118	0.5211	-31.14

SOT323-6L MECHANICAL DATA

DIM.	mm			Inch		
	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.
A	0.8		1.1	0.031		0.043
A1	0		0.1	0		0.004
A2	0.8		1	0.0031		0.039
b	0.15		0.3	0.006		0.012
c	0.1		0.18	0.004		0.007
D	1.8		2.2	0.071		0.088
E	1.15		1.35	0.045		0.59
e		0.65			0.025	
H	1.8		2.4	0.071		0.094
Q	0.1		0.4	0.004		0.016



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