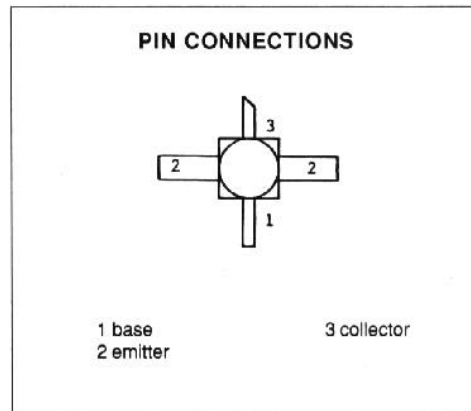
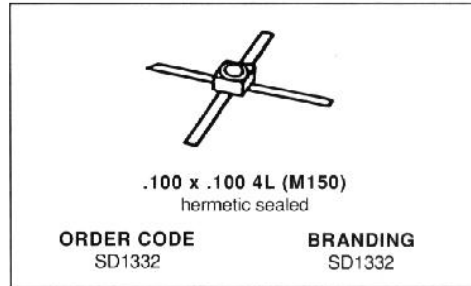


RF & MICROWAVE TRANSISTORS
UHF SMALL SIGNAL

- HIGH FT – 5.5 GHz
- VERY LOW NOISE
- ALL GOLD METALLIZED
- HERMETIC PACKAGE



DESCRIPTION

The SD1332 is an all gold metallized NPN silicon transistor featuring high gain and very low noise. It is suitable for low noise broad band amplifiers such as CATV.

ABSOLUTE MAXIMUM RATINGS ($T_{case} = 25^{\circ}C$)

Symbol	Parameter	Value	Unit
V_{CBO}	Collector - Base Voltage	20.0	V
V_{CEO}	Collector - Emitter Voltage	15.0	V
V_{EBQ}	Emitter - Base Voltage	3.0	V
I_C	Collector Current (max.)	30.0	A
P_{TOT}	Total Device Dissipation at + 25°C	180	W
T_{STG}	Storage Temperature	- 65 to + 200	°C
T_J	Junction Temperature	+ 200	°C

THERMAL DATA

$R_{th(J-C)}$	Junction-case Thermal Resistance	500	°C/W
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SD1332**ELECTRICAL CHARACTERISTICS** ($T_{\text{case}} = 25^{\circ}\text{C}$)

STATIC

Symbol	Test Conditions	Value			Unit
		Min.	Typ.	Max.	
BV_{CBO}	$I_{\text{C}} = 10\mu\text{A}$	20			V
BV_{CEO}	$I_{\text{C}} = 1.0\text{mA}$ $V_{\text{BE}} = 0$	15			V
BV_{EBO}	$I_{\text{E}} = 10\mu\text{A}$	2			V
I_{CEO}	$V_{\text{CE}} = 10\text{V}$ $I_{\text{B}} = 0$			50	nA
h_{FE}	$V_{\text{CE}} = 10\text{V}$ $I_{\text{C}} = 14\text{mA}$	50		300	

DYNAMIC

Symbol	Test Conditions	Value			Unit
		Min.	Typ.	Max.	
F_{T}	$F = 1000\text{MHz}$ $V_{\text{CE}} = 10\text{V}$ $I_{\text{C}} = 14\text{mA}$		5.5		GHz
N. F.	$F = 1000\text{MHz}$ $V_{\text{CE}} = 5\text{V}$ $I_{\text{C}} = 5\text{mA}$		2.5		dB
G max	$F = 1000\text{MHz}$ $V_{\text{CE}} = 10\text{V}$ $I_{\text{C}} = 15\text{mA}$		17		dB
C_{cb}	$F = 1.0\text{MHz}$ $V_{\text{CB}} = 10\text{V}$			0.5	pF

Input Power : - 33.00dBm

Test Cond. (Volts/Amps)	Freq. (Hz)	S11 (Mag/angle)	S21 (dB/angle)	S12 (Mag/angle)	S22 (Mag/angle)
TYPICAL DEVICE					
5.00/4.92m	100.00M	753.17m -33.72	22.27 158.81	17.22m 73.55	963.08m -11.57
	200.00M	682.71m -61.06	21.08 143.83	29.84m 61.83	886.63m -20.19
	300.00M	632.22m -82.55	19.85 132.64	38.68m 54.15	816.20m -26.57
	400.00M	602.34m -99.27	18.67 123.89	45.25m 49.01	758.18m -31.51
	500.00M	583.74m -112.28	17.56 116.88	50.10m 45.52	713.51m -35.47
	600.00M	569.11m -122.57	16.51 111.00	53.97m 43.23	677.29m -38.66
	700.00M	556.71m -131.20	15.56 105.93	57.23m 41.33	648.71m -41.27
	800.00M	546.55m -138.83	14.67 101.55	59.89m 40.16	624.68m -43.36
	900.00M	537.79m -145.80	13.86 97.48	62.64m 39.10	605.05m -45.18
	1.00G	532.67m -152.15	13.14 93.74	64.81m 38.34	588.72m -46.82
	1.20G	536.46m -163.06	11.81 86.03	68.74m 37.55	565.07m -49.94
	1.40G	547.67m -171.29	10.59 79.77	72.76m 36.83	547.77m -52.63
	1.60G	548.34m -177.09	9.65 74.71	75.72m 37.31	535.14m -54.32
	1.80G	540.96m 177.01	8.76 69.74	78.67m 37.41	520.37m -56.13
	2.00G	538.89m 170.09	7.83 65.24	81.89m 37.93	498.78m -58.03
	2.20G	557.07m 163.97	6.97 61.20	85.45m 37.67	475.30m -68.99
	2.40G	582.10m 159.87	6.28 56.53	88.19m 37.55	459.02m -65.28
	2.60G	602.02m 157.15	5.60 51.71	90.64m 38.45	457.06m -69.85
	2.80G	612.13m 152.32	4.96 47.95	95.04m 39.49	459.15m -72.90
	3.00G	595.91m 144.68	4.59 46.62	100.21m 38.40	448.31m -74.19
5.00/10.80m	100.00M	648.48m -49.52	26.82 151.87	15.36m 68.52	915.43m -16.88
	200.00M	605.46m -86.07	24.92 133.32	24.76m 55.75	782.42m -27.05
	300.00M	584.72m -110.35	23.02 121.18	30.11m 48.94	684.20m -32.68
	400.00M	575.93m -126.59	21.34 112.65	33.85m 45.87	617.49m -36.32
	500.00M	570.37m -138.81	19.87 106.30	36.81m 44.74	573.26m -39.01
	600.00M	564.23m -146.67	18.57 101.19	39.31m 44.45	542.74m -40.97
	700.00M	558.64m -153.62	17.43 96.90	41.79m 44.53	521.73m -42.54
	800.00M	553.35m -159.66	16.41 93.25	44.24m 44.98	505.68m -43.85
	900.00M	549.90m -165.17	15.49 89.97	46.72m 45.29	493.14m -45.00
	1.00G	550.25m -170.21	14.68 86.89	49.03m 45.75	483.57m -46.23
	1.20G	558.65m -178.44	13.22 80.43	54.05m 46.55	471.20m -48.67
	1.40G	569.09m 175.45	11.90 75.05	59.20m 47.03	463.09m -50.91
	1.60G	566.76m 170.94	10.89 70.59	63.58m 48.34	458.71m -52.13
	1.80G	559.77m 165.77	9.97 66.10	68.08m 48.82	450.96m -53.65
	2.00G	561.44m 159.82	9.01 62.17	72.99m 49.50	435.13m -55.23
	2.20G	582.59m 154.82	8.15 58.63	78.05m 49.06	416.18m -57.92
	2.40G	608.24m 151.85	7.42 54.59	82.28m 48.98	402.20m -62.24
	2.60G	624.92m 149.93	6.75 50.14	86.39m 49.32	401.77m -67.06
	2.80G	637.90m 145.58	6.09 46.67	92.19m 49.94	406.49m -70.16
	3.00G	623.18m 137.64	5.71 44.99	98.23m 48.32	399.05m -71.14

S-PARAMETERS

SD1332

Input Power : -33.00dBm

Test Cond. (Volts/Amps)	Freq. (Hz)	S11 (Mag/angle)	S21 (dB/angle)	S12 (Mag/angle)	S22 (Mag/angle)
TYPICAL DEVICE (continued)					
5.00/29.99m	100.00M	587.73m-106.85	29.12 133.14	10.44m 56.91	775.27m -20.28
	200.00M	576.33m-139.23	25.32 113.69	14.40m 49.22	631.24m -23.53
	300.00M	600.62m-153.92	22.45 104.10	16.73m 49.58	572.86m -24.15
	400.00M	612.21m-162.35	20.25 97.89	19.24m 51.42	545.82m -25.16
	500.00M	617.24m-168.20	18.48 93.25	21.73m 53.96	532.77m -26.64
	600.00M	619.68m-172.72	17.00 89.45	24.28m 55.84	526.89m -28.21
	700.00M	619.85m-176.52	15.73 86.08	26.78m 57.21	523.97m -29.91
	800.00M	620.88m 179.97	14.62 83.26	29.33m 58.73	523.03m -31.52
	900.00M	623.23m 176.69	13.64 80.57	32.00m 59.00	522.44m -33.17
	1.00G	628.19m 173.59	12.78 78.01	34.60m 59.58	523.15m -34.89
	1.20G	640.61m 168.54	11.24 72.37	39.64m 60.97	525.53m -38.45
	1.40G	650.90m 164.60	9.85 67.59	44.58m 60.72	527.03m -41.91
	1.60G	648.90m 161.06	8.78 63.52	49.38m 62.36	529.98m -44.55
	1.80G	646.69m 156.68	7.81 59.07	53.83m 62.36	526.64m -47.34
	2.00G	655.82m 151.74	6.82 55.38	58.93m 63.36	513.55m -50.16
	2.20G	682.91m 148.03	5.92 52.14	63.73m 62.75	496.14m -53.90
	2.40G	707.22m 145.91	5.19 48.27	68.36m 63.04	484.02m -58.86
	2.60G	720.85m 144.51	4.45 44.10	72.72m 63.99	483.39m -64.12
	2.80G	737.97m 140.55	3.75 40.81	78.76m 64.31	487.66m -67.83
	3.00G	739.80m 132.34	3.34 39.29	85.36m 63.15	478.55m -69.83

Input Power : -33.00dBm

Test Cond. (Volts/Amps)	Freq. (Hz)	S11 (Mag/angle)	S21 (dB/angle)	S12 (Mag/angle)	S22 (Mag/angle)
TYPICAL DEVICE					
10.00/4.92m	100.00M	768.75m -32.35	22.17 159.15	15.11m 73.99	969.12m -10.13
	200.00M	693.05m -58.58	21.03 144.40	26.20m 62.70	901.18m -17.69
	300.00M	638.14m -79.43	19.83 133.29	34.17m 55.50	839.18m -23.25
	400.00M	604.02m -95.83	18.68 124.48	40.15m 50.39	787.83m -27.62
	500.00M	581.42m-108.85	17.60 117.34	44.73m 47.19	745.82m -31.16
	600.00M	564.52m-119.23	16.57 111.35	48.28m 44.77	714.31m -33.98
	700.00M	550.54m-127.92	15.62 106.09	51.19m 42.85	688.83m -36.29
	800.00M	537.97m-135.71	14.74 101.59	53.78m 41.97	667.60m -38.19
	900.00M	527.77m-142.82	13.93 97.46	56.34m 40.82	650.25m -39.86
	1.00G	522.12m-149.43	13.20 93.58	58.36m 40.19	636.26m -41.46
	1.20G	524.19m-160.64	11.88 85.66	62.13m 39.24	615.82m -44.45
	1.40G	534.21m-169.03	10.65 79.24	66.11m 38.62	601.76m -47.21
	1.60G	534.75m-174.96	9.71 74.12	68.61m 39.05	591.09m -49.06
	1.80G	526.71m 179.05	8.81 69.01	71.35m 39.17	578.14m -51.05
	2.00G	524.17m 172.08	7.85 64.38	74.15m 39.75	557.50m -53.19
	2.20G	541.47m 165.72	6.97 60.16	77.56m 39.57	535.43m -56.11
	2.40G	567.69m 161.59	6.28 55.35	79.80m 39.33	519.96m -60.28
	2.60G	589.14m 158.80	5.61 50.35	82.22m 40.32	516.76m -64.75
	2.80G	599.08m 153.93	4.95 46.53	86.30m 41.33	518.61m -67.82
	3.00G	581.90m 146.27	4.50 45.47	90.66m 40.58	507.20m -69.33

S-PARAMETERS

Input Power : - 33.00dBm

Test Cond. (Volts/Amps)	Freq. (Hz)	S11 (Mag/angle)	S21 (dB/angle)	S12 (Mag/angle)	S22 (Mag/angle)
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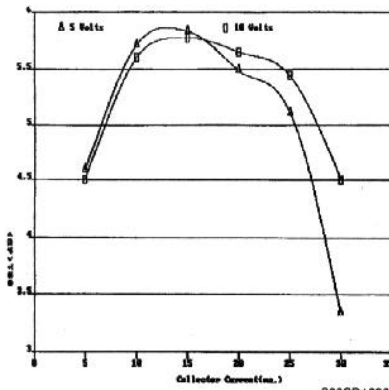
TYPICAL DEVICE (continued)

10.00/15.00m	100.00M	622.94m -56.61	28.47 148.35	12.68m 66.45	899.33M -16.75
	200.00M	587.97m -95.37	26.17 128.59	19.59m 53.90	758.53m -25.09
	300.00M	573.10m -119.12	23.98 116.49	23.48m 48.82	666.68m -28.75
	400.00M	567.79m -134.33	22.11 108.26	26.48m 46.99	610.33m -30.80
	500.00M	563.38m -144.81	20.52 182.19	28.92m 47.15	576.89m -32.38
	600.00M	557.84m -152.67	19.14 97.34	31.32m 48.33	555.78m -33.72
	700.00M	552.92m -158.92	17.94 93.27	33.35m 48.63	542.47m -34.89
	800.00M	548.77m -164.42	16.87 89.83	35.82m 49.68	533.02m -36.83
	900.00M	546.85m -169.48	15.92 86.68	38.30m 50.53	526.88m -37.11
	1.00G	546.76m -174.06	15.07 83.79	40.66m 50.96	522.34m -38.27
	1.20G	556.55m 178.53	13.58 77.52	45.40m 52.22	518.08m -40.85
	1.40G	567.41m 173.04	12.22 72.39	50.26m 52.42	515.28m -43.41
	1.60G	565.11m 168.88	11.18 68.14	54.49m 53.68	515.49m -45.13
	1.80G	557.73m 163.98	10.21 63.76	58.94m 53.98	511.47m -47.09
	2.00G	562.37m 158.25	9.24 59.81	63.45m 54.63	498.02m -49.06
	2.20G	583.82m 153.56	8.34 56.24	68.40m 54.20	480.58m -51.93
	2.40G	610.61m 150.85	7.61 52.25	72.44m 54.25	467.83m -56.20
	2.60G	627.71m 149.13	6.94 47.91	76.16m 54.72	466.88m -60.95
	2.80G	640.68m 144.94	6.25 44.30	81.51m 55.21	472.01m -64.21
	3.00G	628.69m 136.84	5.77 43.00	87.13m 53.82	464.52m -65.64
10.00/25.00m	100.00M	554.27m -75.51	30.18 141.35	11.14m 63.04	847.61m -19.30
	200.00M	562.91m -115.73	27.11 120.68	16.25m 51.54	686.88m -25.65
	300.00M	569.30m -136.41	24.50 189.34	18.98m 49.16	604.62m -27.27
	400.00M	574.17m -148.69	22.40 101.95	21.51m 49.11	562.19m -28.87
	500.00M	575.49m -156.95	20.67 96.55	23.80m 50.55	539.64m -29.05
	600.00M	574.09m -163.19	19.19 92.23	26.24m 52.44	528.13m -30.05
	700.00M	571.61m -168.22	17.93 88.62	28.57m 53.71	521.86m -31.15
	800.00M	569.55m -172.71	16.81 85.51	30.91m 54.91	518.42m -32.28
	900.00M	570.29m -176.90	15.82 82.66	33.57m 55.62	516.77m -33.54
	1.00G	572.67m 179.35	14.95 80.04	36.01m 56.22	516.35m -34.84
	1.20G	584.37m 173.20	13.41 74.26	40.94m 57.38	517.39m -37.76
	1.40G	594.27m 168.59	12.01 69.37	45.77m 57.52	519.10m -48.62
	1.60G	592.00m 164.88	10.95 65.39	50.23m 58.69	522.80m -42.68
	1.80G	587.33m 160.32	9.96 61.17	54.63m 59.10	520.62m -44.99
	2.00G	593.91m 154.98	8.97 57.25	59.38m 59.49	508.56m -47.27
	2.20G	618.55m 150.78	8.06 53.90	64.17m 59.09	492.63m -50.41
	2.40G	644.54m 148.54	7.34 50.10	68.27m 58.85	480.79m -54.86
	2.60G	660.17m 146.97	6.63 45.87	72.38m 59.86	480.31m -59.76
	2.80G	675.73m 142.85	5.91 42.38	77.80m 60.39	485.24m -63.23
	3.00G	668.10m 134.80	5.44 41.07	83.65m 58.74	478.23m -64.86

S-PARAMETERS

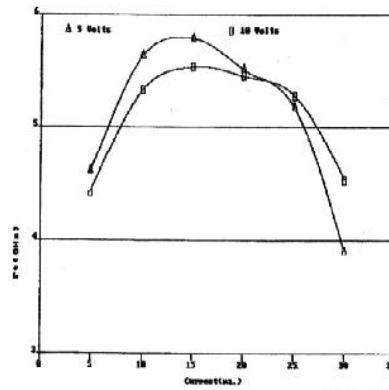
SD1332

1332 S21 VS. COLLECTOR CURRENT AT 30HZ



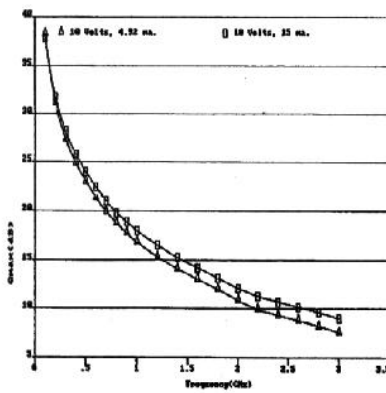
S88SD1332-01

1332 FT. VS. CURRENT AT 1GHZ

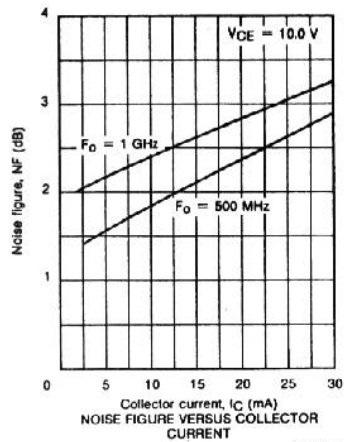


S88SD1332-02

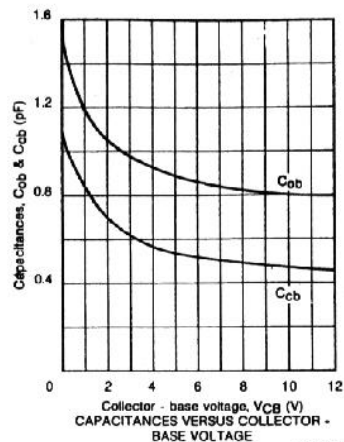
1332 GMAX VS. FREQUENCY



S88SD1332-03



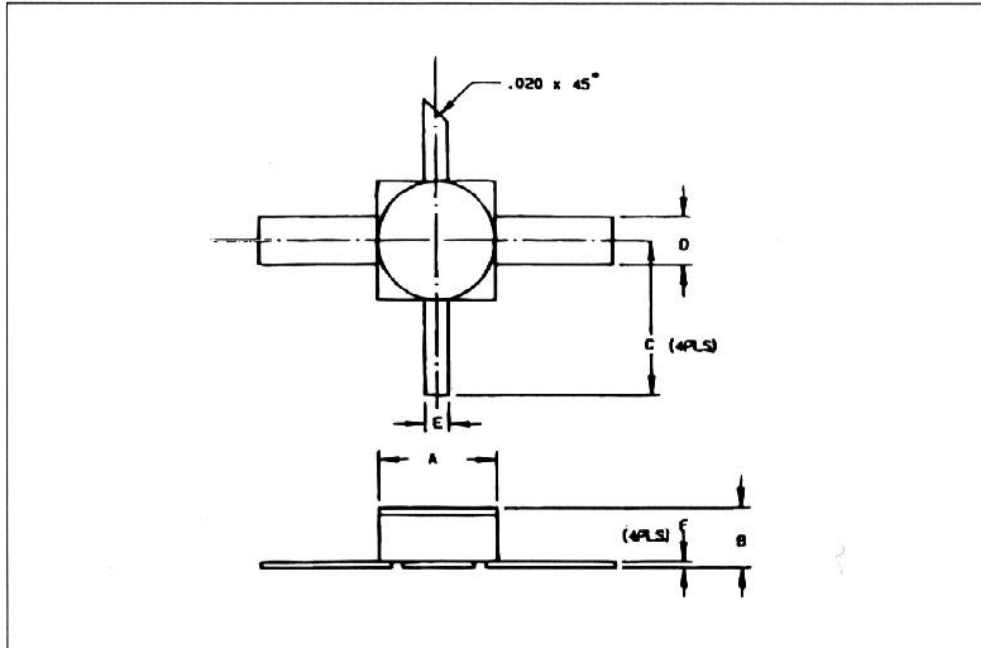
S88SD1332-04



S88SD1332-05

PACKAGE MECHANICAL DATA

.100 x .100 4L



	Minimum Inches/mm	Maximum Inches/mm
A	.090/2.29	.105/2.67
B	.035/0.89	.055/1.40
C		.340/8.64
D	.035/0.89	.043/1.09
E	.016/0.41	.024/0.61
F	.003/0.08	.006/0.15