

Typical Performance Data

NOTE: Use PDF Bookmarks to view DATA at required conditions**Definitions:**

Input Return Loss = S11 (dB)

Gain(Power Gain) = S21 (dB)

Reverse Isolation = S12 (dB)

Output Return Loss = S22 (dB)

TEST CONDITIONS: $V_{DD} = +5\text{ V}$, $I_{DD} = 160\text{ mA}$ @ Temperature = +25°C

FREQ	Gain	Isolation	Input Return Loss	Output Return Loss	Stability		1dB Comp. Output	Psat Output	IP-3 Output	Noise Figure
(GHz)	(dB)	(dB)	(dB)	(dB)	K	Measure	(dBm)	(dBm)	(dBm)	(dB)
16.0	20.70	54.34	5.99	15.63	23.01	1.21	21.93	24.43	30.39	6.49
16.5	21.25	53.28	7.91	15.98	22.61	1.13	21.65	24.19	31.19	5.95
17.0	21.51	52.76	9.92	15.48	20.19	1.07	21.41	23.61	30.31	5.54
17.2	21.55	52.52	10.33	15.17	19.46	1.05	21.43	23.52	30.13	5.43
17.4	21.55	52.40	10.75	14.50	19.85	1.04	21.25	23.31	30.32	5.23
17.6	21.55	51.73	11.45	14.11	19.13	1.03	21.18	23.06	30.81	5.15
17.8	21.54	52.05	12.01	13.85	20.76	1.02	21.09	22.87	29.79	5.07
18.0	21.52	51.59	12.33	13.24	20.69	1.02	21.15	22.83	30.12	5.07
18.2	21.51	51.38	12.78	13.08	20.48	1.01	20.99	22.56	30.53	5.08
18.4	21.48	51.22	13.06	12.78	19.37	1.01	20.78	22.34	30.81	4.98
18.6	21.45	51.11	13.51	12.41	20.27	1.00	21.01	22.52	30.39	5.03
18.8	21.39	51.19	14.00	12.44	19.52	1.00	21.03	22.43	29.97	5.01
19.0	21.36	51.50	14.39	12.28	19.51	0.99	20.69	22.09	30.35	4.92
19.2	21.32	51.04	14.77	12.27	19.22	0.98	21.01	22.37	30.42	4.89
19.4	21.27	51.43	15.35	12.39	21.63	0.98	21.04	22.32	29.64	4.87
19.6	21.25	52.11	15.98	12.21	22.09	0.97	20.64	21.96	30.10	4.84
19.8	21.24	52.47	16.49	12.09	23.17	0.97	21.04	22.40	30.05	4.79
20.0	21.24	51.66	17.28	11.99	24.03	0.97	20.86	22.22	29.16	4.74
20.2	21.25	52.49	17.64	11.86	23.75	0.97	20.61	21.98	30.43	4.65
20.4	21.26	52.53	17.85	11.94	25.16	0.97	20.97	22.32	30.39	4.56
20.6	21.30	53.42	17.86	11.87	23.99	0.97	20.95	22.21	30.38	4.50
20.8	21.34	53.52	17.74	11.82	24.93	0.97	20.68	22.04	32.10	4.41
21.0	21.39	53.67	17.80	11.89	27.04	0.97	21.02	22.42	30.93	4.39
21.2	21.42	54.20	17.79	11.82	27.48	0.97	20.92	22.23	32.22	4.26
21.4	21.42	54.69	17.67	12.02	29.54	0.97	21.02	22.27	31.33	4.28
21.6	21.43	54.24	17.45	12.18	28.48	0.97	21.27	22.56	31.04	4.24
21.8	21.43	53.94	17.20	12.08	25.61	0.97	21.12	22.40	32.11	4.24
22.0	21.46	54.37	16.76	12.15	26.18	0.97	21.02	22.29	31.02	4.20
22.2	21.46	54.69	16.56	12.08	27.23	0.98	21.47	22.76	31.45	4.17
22.4	21.45	54.85	16.33	12.08	30.19	0.98	21.14	22.40	31.56	4.16
22.6	21.47	54.97	16.00	12.16	31.14	0.98	20.84	22.22	31.08	4.11
22.8	21.49	56.40	15.60	12.11	33.50	0.98	20.88	22.16	31.92	4.11
23.0	21.50	57.48	15.03	11.83	38.82	0.98	20.87	22.13	32.04	4.08
23.2	21.55	59.43	14.49	11.81	44.90	0.98	20.76	21.96	30.93	4.03
23.4	21.58	60.63	14.01	11.81	51.98	0.98	20.98	22.18	32.42	3.99
23.5	21.60	60.69	13.71	11.84	54.54	0.99	20.99	22.14	32.13	3.98
23.6	21.63	60.13	13.49	11.96	55.08	0.99	21.00	22.12	30.76	3.96
23.8	21.69	61.12	13.10	12.17	63.02	0.99	21.11	22.24	31.46	3.91
24.0	21.75	61.27	12.96	12.18	55.75	0.99	21.32	22.50	32.19	3.81
24.2	21.81	61.85	12.72	12.11	55.64	1.00	21.17	22.30	31.97	3.85
24.4	21.86	61.70	12.52	11.95	61.98	1.00	20.98	22.15	32.43	3.87
24.6	21.90	60.63	12.23	11.76	55.26	1.00	21.45	22.53	32.07	3.88
24.8	21.97	60.87	11.82	11.60	51.72	1.01	21.51	22.52	31.46	3.80
25.0	22.04	60.56	11.49	11.42	47.30	1.01	21.40	22.41	32.42	3.80
25.2	22.10	61.10	11.11	11.14	53.01	1.01	21.68	22.69	31.61	3.71
25.4	22.17	59.85	10.74	10.98	49.35	1.01	21.42	22.38	31.47	3.69
25.6	22.25	59.50	10.44	10.53	49.74	1.01	21.28	22.27	32.16	3.69
25.8	22.31	60.64	10.19	10.35	50.81	1.01	21.70	22.67	31.97	3.62
26.0	22.39	60.38	9.89	10.13	42.29	1.01	21.49	22.40	31.86	3.61
26.2	22.48	59.32	9.60	10.01	36.32	1.00	21.82	22.65	32.19	3.56
26.4	22.55	60.50	9.32	10.03	42.70	1.01	21.84	22.66	31.45	3.54
26.6	22.67	60.94	9.06	10.00	38.87	1.01	22.20	22.86	32.33	3.54
26.8	22.76	60.90	8.85	10.09	36.67	1.02	21.94	22.58	31.54	3.53
27.0	22.86	60.98	8.66	10.40	37.27	1.03	22.34	22.96	32.03	3.40
27.5	23.14	61.16	8.35	11.15	32.05	1.05	22.77	23.20	32.65	3.33
28.0	23.48	58.69	8.66	12.92	33.38	1.07	22.67	23.11	32.36	3.17
28.5	24.02	60.15	9.76	15.45	39.93	1.08	22.44	23.05	32.31	3.19
29.0	24.50	58.16	10.61	19.17	28.51	1.08	22.31	22.81	32.62	3.09
29.5	24.52	57.26	10.93	19.34	24.07	1.07	21.64	22.20	31.89	3.11
30.0	24.06	55.41	9.74	19.67	24.42	1.09	21.46	21.91	31.89	3.07
30.5	22.99	53.84	8.91	20.92	18.93	1.12	21.13	21.54	31.93	3.08
31.0	21.75	51.95	7.73	23.13	15.57	1.16	20.07	20.34	32.31	3.10
31.5	20.17	50.19	7.13	29.87	14.83	1.19	20.01	20.22	30.48	3.16
32.0	18.29	49.27	7.48	24.63	16.05	1.18	18.92	19.31	28.18	3.28
32.5	16.43	48.46	8.09	14.90	23.07	1.14				
33.0	14.58	48.71	9.06	10.93	28.28	1.07				
33.5	12.88	49.01	11.01	8.57	36.76	0.96				
34.0	10.94	49.46	13.19	7.17	42.47	0.87				

Typical Performance Data

NOTE: Use PDF Bookmarks to view DATA at required conditions

Definitions:

Input Return Loss = S11 (dB)

Gain(Power Gain) = S21 (dB)

Reverse Isolation = S12 (dB)

Output Return Loss = S22 (dB)

TEST CONDITIONS: $V_{DD} = +6\text{ V}$, $I_{DD} = 160\text{ mA}$ @ Temperature = +25°C

FREQ	Gain	Isolation	Input Return Loss	Output Return Loss	Stability		1dB Comp. Output	Psat Output	IP-3 Output	Noise Figure
(GHz)	(dB)	(dB)	(dB)	(dB)	K	Measure	(dBm)	(dBm)	(dBm)	(dB)
16.0	20.25	55.11	6.38	18.69	22.37	1.21	23.79	25.60	32.35	6.65
16.5	20.74	53.47	8.46	19.35	19.76	1.12	23.19	25.17	32.34	6.07
17.0	20.95	52.71	10.63	18.57	19.59	1.07	23.06	25.10	31.97	5.70
17.2	20.97	52.72	11.11	18.10	20.25	1.05	22.86	24.82	31.79	5.58
17.4	20.96	52.39	11.59	17.18	19.06	1.04	22.72	24.59	32.16	5.44
17.6	20.94	52.12	12.36	16.58	17.61	1.03	22.70	24.35	32.22	5.32
17.8	20.92	52.21	13.00	16.25	18.51	1.02	22.64	24.30	30.85	5.26
18.0	20.89	52.36	13.38	15.47	18.98	1.02	22.48	24.02	31.43	5.20
18.2	20.86	52.01	13.92	15.25	19.22	1.01	22.31	23.87	31.82	5.21
18.4	20.82	51.39	14.22	14.83	17.87	1.01	22.51	24.07	32.11	5.17
18.6	20.77	51.68	14.71	14.33	18.31	1.00	22.53	23.94	31.59	5.19
18.8	20.70	51.31	15.33	14.32	17.90	0.99	22.19	23.68	31.57	5.17
19.0	20.65	51.36	15.66	14.05	19.59	0.99	22.49	23.95	31.63	5.08
19.2	20.60	51.54	15.96	13.90	18.91	0.98	22.54	23.84	31.82	5.12
19.4	20.54	52.10	16.33	13.83	19.37	0.98	22.11	23.46	30.84	5.04
19.6	20.50	52.16	16.81	13.54	20.92	0.97	22.44	23.77	31.32	5.06
19.8	20.48	52.25	17.13	13.39	22.06	0.97	22.31	23.54	31.16	4.97
20.0	20.46	52.72	17.41	13.17	20.17	0.97	22.03	23.36	30.34	4.86
20.2	20.46	52.56	17.42	12.95	21.88	0.97	22.30	23.61	31.70	4.80
20.4	20.45	53.02	17.23	12.96	21.14	0.97	22.27	23.46	31.29	4.71
20.6	20.47	52.71	17.09	12.73	22.19	0.97	22.04	23.35	31.29	4.63
20.8	20.49	53.26	16.73	12.66	24.06	0.97	22.42	23.82	32.90	4.59
21.0	20.51	53.86	16.51	12.69	25.03	0.97	22.42	23.62	32.09	4.56
21.2	20.51	54.40	16.33	12.54	25.04	0.97	22.40	23.70	33.18	4.51
21.4	20.49	54.45	16.23	12.71	27.42	0.97	22.65	23.96	32.59	4.44
21.6	20.47	54.26	16.07	12.79	26.25	0.98	22.52	23.55	32.04	4.43
21.8	20.45	53.54	15.86	12.63	23.94	0.97	22.42	23.46	33.04	4.35
22.0	20.44	54.26	15.45	12.69	26.73	0.97	22.91	23.99	32.09	4.35
22.2	20.42	55.05	15.30	12.74	29.30	0.97	22.75	23.59	32.53	4.32
22.4	20.39	55.04	15.11	12.62	27.43	0.97	22.50	23.36	32.50	4.29
22.6	20.38	55.74	14.83	12.66	29.93	0.98	22.43	23.41	32.14	4.35
22.8	20.35	55.66	14.54	12.68	30.54	0.98	22.53	23.36	32.99	4.29
23.0	20.33	57.38	14.03	12.51	39.18	0.98	22.34	23.25	32.72	4.28
23.2	20.37	58.51	13.61	12.41	46.26	0.98	22.45	23.36	32.03	4.21
23.4	20.39	60.19	13.16	12.09	52.16	0.98	22.43	23.23	33.62	4.19
23.5	20.41	60.45	12.91	12.12	49.53	0.98	22.44	23.16	32.92	4.18
23.6	20.42	60.89	12.72	12.22	52.66	0.98	22.62	23.25	31.72	4.14
23.8	20.48	61.34	12.35	12.38	59.33	0.99	22.81	23.66	32.51	4.10
24.0	20.55	61.36	12.24	12.37	58.66	0.99	22.64	23.36	32.89	4.11
24.2	20.63	61.31	12.04	12.25	57.68	1.00	22.56	23.20	32.89	4.05
24.4	20.69	61.38	11.88	12.05	55.34	1.01	22.97	23.58	33.87	4.02
24.6	20.74	60.88	11.61	11.82	49.58	1.01	23.04	23.47	32.82	4.05
24.8	20.82	60.81	11.23	11.62	50.52	1.01	22.94	23.39	32.87	3.99
25.0	20.88	60.47	10.93	11.37	45.09	1.00	23.18	23.66	33.08	4.02
25.2	20.94	61.02	10.61	11.29	52.04	1.00	22.94	23.35	32.38	3.97
25.4	21.03	60.89	10.30	11.07	50.24	1.01	22.80	23.26	32.70	3.93
25.6	21.11	60.03	10.03	10.57	49.09	1.00	23.13	23.57	33.05	3.88
25.8	21.20	61.00	9.81	10.25	44.89	1.00	22.93	23.22	33.37	3.88
26.0	21.28	60.49	9.55	9.95	41.32	1.00	23.21	23.48	33.25	3.81
26.2	21.39	60.24	9.28	9.71	36.45	1.00	23.22	23.50	33.37	3.78
26.4	21.49	59.53	9.03	9.64	38.56	1.01	23.46	23.63	32.39	3.75
26.6	21.62	59.61	8.79	9.54	44.60	1.00	23.24	23.45	33.22	3.78
26.8	21.75	61.77	8.57	9.59	49.84	1.01	23.64	23.82	32.31	3.74
27.0	21.88	59.70	8.41	9.77	36.02	1.03	24.11	24.07	32.95	3.71
27.5	22.18	58.61	8.14	10.36	36.85	1.04	24.06	24.00	33.31	3.55
28.0	22.63	58.58	8.49	11.52	28.94	1.06	23.96	24.01	33.34	3.45
28.5	23.33	61.09	9.48	13.28	33.95	1.07	23.79	24.02	33.17	3.41
29.0	23.94	59.73	10.33	15.61	34.82	1.07	23.39	23.64	33.78	3.37
29.5	24.10	57.22	10.59	17.32	26.22	1.07	23.09	23.46	33.57	3.43
30.0	23.79	55.26	9.46	16.75	21.57	1.09	22.97	23.10	33.75	3.39
30.5	22.84	53.03	8.66	16.47	20.10	1.12	21.90	21.94	33.17	3.44
31.0	21.67	51.53	7.54	17.40	17.10	1.15	21.88	21.95	34.33	3.48
31.5	20.12	49.22	7.06	21.04	16.22	1.17	20.90	21.03	33.41	3.54
32.0	18.27	48.70	7.47	33.11	18.58	1.16	21.11	20.37	30.99	3.52
32.5	16.44	49.15	8.12	18.53	22.14	1.14				
33.0	14.62	48.73	9.14	12.63	27.97	1.05				
33.5	12.93	49.64	11.11	9.69	34.29	0.96				
34.0	10.94	50.06	13.20	7.89	43.64	0.86				

Typical Performance Data

NOTE: Use PDF Bookmarks to view DATA at required conditions

Definitions:

Input Return Loss = S11 (dB)

Gain(Power Gain) = S21 (dB)

Reverse Isolation = S12 (dB)

Output Return Loss = S22 (dB)

TEST CONDITIONS: $V_{DD} = +7\text{ V}$, $I_{DD} = 160\text{ mA}$ @ Temperature = $+25^\circ\text{C}$

FREQ	Gain	Isolation	Input Return Loss	Output Return Loss	Stability		1dB Comp. Output	Psat Output	IP-3 Output	Noise Figure
(GHz)	(dB)	(dB)	(dB)	(dB)	K	Measure	(dBm)	(dBm)	(dBm)	(dB)
16.0	19.74	54.31	6.68	21.94	26.11	1.24	26.18	26.72	32.31	6.78
16.5	20.17	53.55	8.91	23.15	25.98	1.16	25.52	26.42	32.92	6.25
17.0	20.37	52.42	11.25	21.70	22.46	1.09	24.62	25.86	32.67	6.08
17.2	20.39	52.76	11.78	21.00	25.63	1.07	24.44	25.76	32.47	5.75
17.4	20.38	52.99	12.28	19.87	24.31	1.05	24.13	25.51	33.27	5.64
17.6	20.36	52.14	13.13	19.03	23.10	1.03	23.94	25.29	33.17	5.58
17.8	20.34	52.44	13.85	18.53	21.91	1.02	23.90	25.15	31.48	5.38
18.0	20.30	52.41	14.26	17.54	21.40	1.02	23.91	25.19	32.16	5.43
18.2	20.28	51.91	14.84	17.33	21.59	1.01	23.74	24.88	32.44	5.34
18.4	20.23	52.25	15.15	16.81	23.30	1.01	23.47	24.70	32.78	5.37
18.6	20.17	51.89	15.66	16.18	21.89	1.00	23.62	24.88	32.44	5.31
18.8	20.10	51.65	16.27	16.16	21.15	1.00	23.67	24.74	32.09	5.31
19.0	20.03	51.71	16.69	15.72	22.39	0.99	23.25	24.59	32.95	5.27
19.2	19.95	51.76	16.77	15.50	22.52	0.99	23.53	24.85	32.94	5.29
19.4	19.88	51.90	16.92	15.24	22.46	0.99	23.63	24.77	31.95	5.18
19.6	19.82	52.49	17.15	14.76	25.53	0.98	23.19	24.55	32.44	5.14
19.8	19.79	52.97	17.05	14.62	25.56	0.98	23.56	24.81	32.12	5.08
20.0	19.75	53.08	16.97	14.22	25.19	0.98	23.43	24.47	31.07	5.00
20.2	19.73	52.94	16.69	13.84	23.11	0.98	23.08	24.27	32.69	4.94
20.4	19.72	52.96	16.54	13.78	25.56	0.98	23.29	24.53	32.49	4.88
20.6	19.71	53.43	16.30	13.41	25.69	0.98	23.30	24.27	31.91	4.83
20.8	19.70	53.96	15.95	13.40	25.52	0.98	22.99	24.22	33.94	4.81
21.0	19.69	53.62	15.66	13.38	26.33	0.98	23.26	24.60	32.43	4.78
21.2	19.66	54.29	15.36	13.02	28.91	0.98	23.20	24.30	34.15	4.78
21.4	19.62	54.49	15.24	13.14	26.76	0.99	23.24	24.51	32.60	4.72
21.6	19.58	54.07	15.17	13.11	28.18	0.99	23.39	24.75	32.84	4.68
21.8	19.53	53.71	14.98	12.96	26.51	1.00	23.40	24.44	33.68	4.74
22.0	19.51	53.84	14.63	12.92	30.68	1.00	23.34	24.43	32.77	4.68
22.2	19.45	54.22	14.50	12.90	31.36	1.00	23.75	24.89	33.01	4.51
22.4	19.40	55.04	14.31	12.86	32.49	1.00	23.55	24.42	33.11	4.62
22.6	19.38	55.20	14.04	13.00	33.49	1.01	23.28	24.23	32.49	4.68
22.8	19.33	56.01	13.81	12.78	41.15	1.00	23.10	24.25	33.25	4.54
23.0	19.29	57.62	13.37	12.75	40.91	1.00	23.14	24.05	33.17	4.47
23.2	19.32	58.87	12.95	12.60	46.54	1.00	23.00	23.90	32.06	4.38
23.4	19.33	60.53	12.57	12.18	66.78	1.00	22.94	23.93	33.22	4.36
23.5	19.33	60.50	12.34	12.05	60.34	1.00	22.94	23.73	32.93	4.33
23.6	19.35	61.01	12.16	12.15	64.99	1.00	22.95	23.68	31.98	4.31
23.8	19.39	61.20	11.85	12.26	57.64	1.00	23.21	23.94	32.80	4.33
24.0	19.46	60.13	11.75	12.22	71.56	1.01	23.38	24.10	33.32	4.22
24.2	19.54	60.69	11.57	12.09	59.92	1.01	23.25	23.68	33.19	4.23
24.4	19.59	60.98	11.42	11.87	57.24	1.01	23.18	23.59	33.64	4.25
24.6	19.65	59.77	11.16	11.62	61.41	1.01	23.59	23.98	33.24	4.18
24.8	19.75	60.98	10.81	11.38	61.50	1.01	23.57	23.86	32.41	4.15
25.0	19.82	60.49	10.54	11.10	54.98	1.01	23.49	23.81	33.06	4.19
25.2	19.89	60.88	10.26	11.05	58.88	1.00	23.67	24.00	32.67	4.15
25.4	19.98	59.55	9.95	10.93	51.52	1.00	23.32	23.67	32.32	4.13
25.6	20.06	59.89	9.71	10.39	48.56	1.00	23.35	23.65	32.51	4.07
25.8	20.14	60.23	9.51	10.05	57.75	1.00	23.61	23.96	33.36	4.06
26.0	20.23	60.62	9.27	9.72	50.46	1.00	23.33	23.56	32.59	3.99
26.2	20.32	61.87	9.02	9.33	58.56	1.00	23.68	23.86	32.80	4.00
26.4	20.42	60.22	8.80	9.22	41.13	1.00	23.63	23.83	32.02	4.02
26.6	20.53	62.12	8.56	9.06	37.64	1.00	23.52	23.81	32.50	3.96
26.8	20.62	61.46	8.38	9.04	54.88	1.01	23.54	23.72	31.99	4.05
27.0	20.74	59.64	8.20	9.10	43.19	1.03	23.73	24.01	32.21	3.89
27.5	21.15	59.67	7.95	9.65	51.58	1.05	24.38	24.46	32.70	3.77
28.0	21.70	59.59	8.27	10.49	39.16	1.08	24.34	24.26	32.68	3.77
28.5	22.48	61.66	9.24	11.79	46.93	1.09	24.32	24.37	32.19	3.67
29.0	23.17	58.66	10.08	13.37	32.31	1.08	24.41	24.37	32.08	3.65
29.5	23.37	57.28	10.35	14.54	33.49	1.08	24.12	24.16	31.73	3.67
30.0	23.06	56.11	9.27	15.11	29.34	1.10	24.02	24.11	31.08	3.70
30.5	22.30	53.42	8.50	13.83	18.52	1.14	23.87	23.96	31.06	3.67
31.0	21.18	50.73	7.44	14.28	20.64	1.17	22.81	22.84	31.46	3.70
31.5	19.72	48.98	7.05	16.57	19.16	1.19	22.82	22.84	31.11	3.69
32.0	18.01	48.49	7.54	22.61	19.15	1.18	21.89	21.87	30.25	4.00
32.5	16.22	49.01	8.18	23.61	24.37	1.14				
33.0	14.41	49.00	9.24	14.48	31.47	1.09				
33.5	12.68	49.33	11.16	10.75	39.79	0.99				
34.0	10.64	49.76	13.26	8.58	56.06	0.89				

Typical Performance Data

Definitions:

Input Return Loss = S11 (dB)

Gain(Power Gain) = S21 (dB)

Reverse Isolation = S12 (dB)

Output Return Loss = S22 (dB)

TEST CONDITIONS: $V_{DD} = +6\text{ V}$, $I_{DD} = 160\text{ mA}$ @ Temperature = -55°C

FREQ	Gain	Isolation	Input Return Loss	Output Return Loss	Stability		1dB Comp. Output	Psat Output	IP-3 Output	Noise Figure
(GHz)	(dB)	(dB)	(dB)	(dB)	K	Measure	(dBm)	(dBm)	(dBm)	(dB)
16.0	21.14	54.34	5.65	21.83	18.37	1.26	25.11	26.33	32.41	5.54
16.5	21.65	53.34	7.73	22.77	17.70	1.16	23.70	25.78	31.94	4.81
17.0	21.83	52.76	10.13	21.42	17.59	1.09	23.61	25.48	31.47	4.40
17.2	21.84	52.82	11.20	20.93	18.12	1.07	23.62	25.42	31.31	4.31
17.4	21.83	51.95	12.07	20.11	16.64	1.05	23.33	25.24	32.20	4.34
17.6	21.78	51.68	12.66	19.58	16.36	1.04	23.20	25.02	30.49	4.24
17.8	21.73	52.27	13.06	19.42	17.73	1.04	23.01	24.75	31.03	4.14
18.0	21.66	51.19	13.43	18.66	15.83	1.03	22.93	24.72	31.10	4.15
18.2	21.59	51.31	13.76	18.11	16.23	1.02	22.84	24.42	31.05	4.11
18.4	21.51	52.16	13.92	17.59	18.06	1.02	22.42	23.98	31.10	3.98
18.6	21.43	51.04	14.08	16.83	16.01	1.02	22.62	24.23	30.46	3.97
18.8	21.32	51.06	14.61	16.40	16.31	1.01	22.63	24.10	30.13	3.90
19.0	21.20	50.97	15.03	15.54	16.35	1.00	22.16	23.67	31.32	3.86
19.2	21.11	50.95	15.26	14.81	16.43	0.99	22.59	24.11	30.15	3.79
19.4	20.98	51.12	15.68	14.21	16.98	0.99	22.80	24.15	30.28	3.87
19.6	20.89	51.75	16.09	13.41	18.36	0.98	22.48	23.85	30.18	3.91
19.8	20.82	52.95	15.99	12.85	21.11	0.97	22.98	24.36	30.03	3.84
20.0	20.76	52.46	16.06	12.51	19.98	0.97	23.04	24.17	30.21	3.83
20.2	20.71	52.22	15.76	12.16	19.41	0.96	22.82	23.99	30.29	3.74
20.4	20.69	52.26	15.39	12.15	19.53	0.97	23.04	24.32	29.83	3.71
20.6	20.70	53.20	15.08	11.93	21.63	0.97	23.24	24.15	30.95	3.61
20.8	20.74	53.37	14.92	12.12	22.04	0.97	22.81	23.87	30.52	3.47
21.0	20.78	53.42	15.03	12.46	22.20	0.97	23.04	24.19	31.23	3.41
21.2	20.83	53.53	15.11	12.66	22.44	0.98	23.04	23.87	32.14	3.30
21.4	20.88	54.10	15.07	13.02	23.96	0.98	22.66	23.60	30.75	3.30
21.6	20.92	53.45	15.19	13.59	22.26	0.99	22.84	23.82	31.46	3.15
21.8	20.95	53.44	15.33	13.64	22.26	0.99	22.75	23.51	32.21	3.21
22.0	20.97	54.21	15.08	13.60	24.22	0.99	22.44	23.41	30.70	3.20
22.2	20.97	54.69	14.66	13.29	25.48	0.99	23.03	24.08	31.99	3.19
22.4	20.96	53.69	14.42	12.79	22.58	0.98	22.89	23.76	31.93	3.14
22.6	20.94	54.50	13.79	12.56	24.67	0.99	22.72	23.63	31.49	3.30
22.8	20.88	55.96	13.05	12.25	29.02	0.99	22.70	23.75	31.97	3.28
23.0	20.82	56.24	12.44	11.92	29.81	0.99	22.96	23.76	30.83	3.23
23.2	20.79	59.29	11.98	11.91	42.24	1.00	22.84	23.65	31.78	3.25
23.4	20.77	59.74	11.57	11.75	44.23	1.00	22.97	23.91	32.14	3.20
23.5	20.75	58.19	11.40	11.76	37.00	1.00	23.13	23.81	31.04	3.22
23.6	20.75	58.87	11.16	11.87	39.87	1.01	23.15	23.76	31.01	3.14
23.8	20.76	60.55	10.77	12.03	48.18	1.02	23.08	23.75	32.42	3.05
24.0	20.81	60.66	10.69	12.08	48.52	1.02	23.17	23.94	32.98	3.14
24.2	20.87	61.82	10.70	12.22	55.35	1.02	23.16	23.61	31.28	2.95
24.4	20.91	60.08	10.44	12.16	44.86	1.02	22.73	23.41	32.75	2.92
24.6	20.98	59.12	10.36	11.84	39.62	1.02	23.19	23.84	31.76	3.02
24.8	21.07	60.37	10.37	11.77	45.33	1.02	23.32	23.76	32.04	2.94
25.0	21.11	59.27	10.08	11.13	39.04	1.01	22.95	23.57	32.56	2.94
25.2	21.17	60.31	9.82	10.46	42.86	1.01	23.38	24.00	31.87	3.01
25.4	21.22	59.15	9.51	10.12	36.69	1.00	23.24	23.70	32.04	3.03
25.6	21.27	60.51	9.16	9.54	41.55	1.00	23.18	23.58	32.77	2.96
25.8	21.34	59.71	8.91	9.09	36.85	0.99	23.70	24.12	31.94	2.98
26.0	21.43	59.65	8.52	8.82	35.39	0.99	23.70	23.91	33.43	2.88
26.2	21.52	59.58	8.15	8.54	34.00	0.99	24.07	24.16	32.97	2.82
26.4	21.65	59.47	8.09	8.48	32.92	0.99	24.02	24.23	32.41	2.79
26.6	21.79	60.11	7.98	8.41	34.72	0.99	24.51	24.44	33.35	2.72
26.8	21.94	64.40	7.67	8.44	55.22	1.00	24.06	24.01	32.34	2.69
27.0	22.10	60.94	7.56	8.77	36.77	1.02	24.46	24.43	32.79	2.62
27.5	22.55	57.18	7.58	9.35	23.21	1.03	24.72	24.54	32.25	2.62
28.0	23.00	57.90	7.76	10.37	24.80	1.06	24.77	24.45	32.41	2.61
28.5	23.79	59.42	8.26	11.85	28.37	1.07	24.39	24.59	33.61	2.63
29.0	24.62	59.61	9.13	13.19	27.66	1.07	24.21	24.77	33.20	2.46
29.5	25.35	58.67	9.85	15.20	23.82	1.07	23.48	24.17	33.82	2.50
30.0	25.79	56.80	9.51	16.86	18.41	1.09	23.22	23.82	34.50	2.41
30.5	25.66	56.59	7.98	16.14	17.24	1.13	23.07	23.49	34.38	2.44
31.0	24.80	52.43	6.11	13.85	10.39	1.20	22.43	22.52	32.79	2.65
31.5	23.36	49.37	4.99	13.25	7.68	1.26	22.50	22.62	34.67	2.69
32.0	21.81	48.12	5.22	16.86	8.46	1.28	21.26	21.54	33.46	2.55
32.5	19.98	48.76	6.32	21.80	12.62	1.22				
33.0	18.08	48.65	8.08	14.84	16.65	1.12				
33.5	16.22	48.99	9.74	10.84	21.51	1.01				
34.0	14.30	49.00	10.84	9.08	26.41	0.95				

Typical Performance Data

Definitions:

Input Return Loss = S11 (dB)

Gain(Power Gain) = S21 (dB)

Reverse Isolation = S12 (dB)

Output Return Loss = S22 (dB)

TEST CONDITIONS: $V_{DD} = +6\text{ V}$, $I_{DD} = 160\text{ mA}$ @ Temperature = +85°C

FREQ	Gain	Isolation	Input Return Loss	Output Return Loss	Stability		1dB Comp. Output	Psat Output	IP-3 Output	Noise Figure
(GHz)	(dB)	(dB)	(dB)	(dB)	K	Measure	(dBm)	(dBm)	(dBm)	(dB)
16.0	18.36	54.51	5.85	16.01	25.45	1.23	21.30	23.94	30.63	7.60
16.5	18.90	53.16	7.44	16.18	22.64	1.15	21.04	23.55	30.55	6.92
17.0	19.19	52.42	9.15	16.11	21.50	1.09	20.67	22.85	30.15	6.52
17.2	19.26	52.68	9.80	15.74	22.32	1.07	20.70	22.79	30.42	6.40
17.4	19.30	51.86	10.35	15.55	20.48	1.06	20.48	22.54	30.70	6.30
17.6	19.30	51.70	10.70	15.08	20.20	1.05	20.46	22.36	29.95	6.19
17.8	19.29	51.94	10.83	14.67	20.77	1.04	20.49	22.32	30.18	6.16
18.0	19.27	51.96	11.01	14.23	20.85	1.04	20.60	22.43	30.34	6.08
18.2	19.25	51.20	11.14	13.64	19.07	1.03	20.51	22.23	30.28	6.09
18.4	19.25	51.36	11.34	13.46	19.48	1.02	20.35	22.10	30.74	6.01
18.6	19.22	50.59	11.64	13.19	17.92	1.01	20.56	22.32	30.17	6.01
18.8	19.17	51.69	11.95	12.88	20.42	1.01	20.61	22.24	29.77	5.95
19.0	19.14	51.25	12.49	12.74	19.59	1.00	20.27	21.98	30.94	5.92
19.2	19.11	50.79	13.15	12.61	18.71	0.99	20.62	22.27	30.22	5.88
19.4	19.07	51.48	13.62	12.48	20.38	0.98	20.65	22.21	29.79	5.84
19.6	19.06	51.95	14.27	12.38	21.62	0.98	20.26	21.86	29.81	5.71
19.8	19.06	51.84	14.97	12.25	21.37	0.97	20.65	22.20	30.25	5.72
20.0	19.05	51.84	15.68	12.24	21.45	0.96	20.47	21.97	30.56	5.60
20.2	19.06	52.04	16.47	12.20	21.98	0.96	20.17	21.70	30.57	5.57
20.4	19.07	52.19	16.96	12.10	22.29	0.96	20.49	22.02	30.64	5.45
20.6	19.09	52.63	17.63	12.08	23.42	0.95	20.47	21.92	31.12	5.36
20.8	19.11	52.96	18.25	11.99	24.25	0.95	20.26	21.74	30.57	5.33
21.0	19.12	53.72	18.33	11.81	26.30	0.95	20.64	22.14	30.88	5.28
21.2	19.12	53.05	18.64	11.86	24.33	0.95	20.57	22.01	31.47	5.21
21.4	19.12	54.13	18.91	11.79	27.53	0.95	20.56	22.01	30.86	5.15
21.6	19.12	53.88	18.61	11.77	26.68	0.95	20.83	22.30	31.20	5.18
21.8	19.13	54.22	18.26	11.82	27.66	0.95	20.68	22.10	31.21	5.22
22.0	19.11	54.01	18.17	11.70	26.95	0.95	20.58	21.99	30.20	5.13
22.2	19.11	54.38	17.70	11.72	28.08	0.95	21.08	22.51	31.07	5.13
22.4	19.09	54.37	17.01	11.76	27.98	0.95	20.83	22.22	30.85	5.06
22.6	19.07	54.74	16.57	11.75	29.13	0.95	20.59	21.95	31.60	5.13
22.8	19.05	55.68	16.02	11.91	32.49	0.96	20.52	21.90	32.15	5.06
23.0	19.04	58.41	15.62	11.96	44.41	0.96	20.62	21.96	30.39	4.96
23.2	19.04	58.86	15.17	11.93	46.56	0.96	20.48	21.76	31.47	4.98
23.4	19.04	60.02	14.44	12.13	53.05	0.97	20.63	21.92	31.37	4.92
23.5	19.05	60.36	14.27	12.16	55.10	0.97	20.62	21.88	30.12	4.95
23.6	19.06	59.64	14.14	12.14	50.59	0.98	20.68	21.94	30.64	4.91
23.8	19.11	60.97	13.82	12.06	58.52	0.98	20.86	22.09	32.14	4.83
24.0	19.16	62.03	13.38	12.11	65.54	0.98	21.14	22.38	32.20	4.87
24.2	19.21	61.80	13.18	11.98	63.42	0.98	21.02	22.20	31.57	4.82
24.4	19.27	60.73	13.03	11.84	55.54	0.98	20.94	22.12	32.33	4.71
24.6	19.35	60.80	12.79	11.66	55.26	0.98	21.40	22.57	31.16	4.82
24.8	19.44	60.77	12.55	11.30	54.20	0.98	21.44	22.55	32.47	4.70
25.0	19.52	61.16	12.30	11.12	55.94	0.98	21.31	22.43	32.46	4.66
25.2	19.60	60.47	12.13	10.80	50.83	0.97	21.53	22.65	32.49	4.70
25.4	19.67	61.49	11.85	10.37	56.06	0.97	21.26	22.31	32.88	4.63
25.6	19.76	61.94	11.48	10.10	57.84	0.97	21.10	22.12	32.89	4.55
25.8	19.85	58.71	11.03	9.75	38.90	0.96	21.40	22.41	32.32	4.56
26.0	19.95	59.79	10.74	9.42	43.02	0.96	21.22	22.13	33.85	4.51
26.2	20.06	59.42	10.40	9.27	40.43	0.96	21.53	22.38	32.45	4.50
26.4	20.17	60.64	10.00	9.04	45.43	0.96	21.56	22.39	32.71	4.49
26.6	20.29	61.20	9.72	9.04	47.70	0.97	21.88	22.59	33.84	4.42
26.8	20.44	64.63	9.42	9.06	69.58	0.97	21.66	22.33	32.04	4.45
27.0	20.57	57.86	9.30	9.07	31.50	0.98	22.04	22.68	33.69	4.36
27.5	21.00	56.60	9.33	9.95	27.09	1.00	22.52	22.97	32.67	4.20
28.0	21.50	60.77	9.95	11.74	44.30	1.03	22.36	22.86	32.92	4.18
28.5	22.24	60.50	11.57	14.53	42.79	1.03	22.01	22.62	33.73	4.19
29.0	22.76	59.91	13.06	18.21	40.07	1.03	21.84	22.38	33.12	3.89
29.5	22.86	57.43	13.52	20.06	30.65	1.03	21.29	21.77	33.67	4.16
30.0	22.32	56.99	12.36	19.12	30.97	1.04	21.09	21.55	35.46	4.09
30.5	21.26	54.74	10.34	19.41	26.28	1.08	20.66	21.10	34.84	4.17
31.0	19.82	53.46	8.76	21.93	25.91	1.13	19.50	19.87	35.33	4.17
31.5	18.23	50.89	7.89	37.18	22.63	1.16	19.32	19.74	33.18	4.37
32.0	16.46	49.11	7.98	20.45	22.72	1.15	18.40	18.85	31.52	4.49
32.5	14.64	49.97	9.04	13.45	31.41	1.07				
33.0	12.77	48.36	10.59	9.85	31.84	0.97				
33.5	10.89	49.67	12.94	7.79	44.45	0.88				
34.0	8.92	50.82	16.14	6.78	61.70	0.81				

Typical Performance Data

Definitions:

Input Return Loss = -S11 (dB)

Gain(Power Gain) = S21 (dB)

Reverse Isolation = -S12 (dB)

Output Return Loss = -S22 (dB)

TEST CONDITIONS: $V_{DD} = +6\text{ V}$, $I_{DD} = 160\text{ mA}$ @ Temperature = $+25^{\circ}\text{C}$

Power	P_{OUT} (@17 GHz)	P_{OUT} (@24 GHz)	P_{OUT} (@30 GHz)	P_{OUT} (@32 GHz)	I_{DD} (@17 GHz)	I_{DD} (@24 GHz)	I_{DD} (@30 GHz)	I_{DD} (@32 GHz)	Gain (@17 GHz)	Gain (@24 GHz)	Gain (@30 GHz)	Gain (@32 GHz)
(dBm)	(dBm)	(dBm)	(dBm)	(dBm)	(mA)	(mA)	(mA)	(mA)	(dBm)	(dBm)	(dBm)	(dBm)
-10	8.6	8.91	10.76	5.68	162.54	162.46	162.67	160.74	20.92	20.80	23.82	18.25
-9	9.62	9.92	11.78	6.65	163.1	163.04	163.47	160.91	20.92	20.79	23.83	18.23
-8	10.61	10.93	12.79	7.63	163.82	163.75	164.49	161.18	20.91	20.80	23.84	18.22
-7	11.61	11.94	13.8	8.61	164.72	164.64	165.83	161.54	20.91	20.80	23.86	18.21
-6	12.61	12.93	14.83	9.61	165.91	165.81	167.56	162	20.90	20.79	23.88	18.21
-5	13.62	13.92	15.86	10.6	167.42	167.28	169.78	162.62	20.90	20.78	23.91	18.21
-4	14.61	14.91	16.91	11.59	169.36	169.16	172.6	163.56	20.89	20.78	23.94	18.20
-3	15.6	15.91	18	12.58	171.8	171.5	176.11	164.87	20.88	20.78	24.02	18.19
-2	16.59	16.92	19.13	13.59	174.9	174.39	180.58	166.71	20.88	20.80	24.13	18.17
-1	17.6	17.95	20.29	14.57	178.77	177.93	186.19	168.98	20.89	20.85	24.24	18.15
0	18.63	19	21.4	15.54	183.48	182.17	193.31	171.92	20.92	20.91	24.33	18.12
1	19.67	20.16	22.34	16.5	189.13	187.75	203.02	175.82	20.95	20.98	24.23	18.09
1.2	19.88	20.38	22.49	16.69	190.39	188.87	205.35	176.78	20.95	20.99	24.17	18.09
1.4	20.08	20.58	22.62	16.88	191.68	190.01	207.77	177.79	20.94	20.99	24.10	18.08
1.6	20.28	20.78	22.74	17.08	193.01	191.17	210.3	178.85	20.93	20.99	24.02	18.08
1.8	20.53	20.97	22.84	17.27	194.72	192.36	212.9	179.97	20.91	20.98	23.92	18.07
2	20.73	21.16	22.93	17.47	196.11	193.6	215.61	181.18	20.89	20.96	23.81	18.07
2.2	20.91	21.33	23.01	17.67	197.54	194.86	218.37	182.44	20.85	20.93	23.69	18.07
2.4	21.09	21.5	23.08	17.87	198.94	196.16	221.19	183.75	20.81	20.90	23.56	18.07
2.6	21.27	21.66	23.14	18.08	200.35	197.5	224.06	185.11	20.77	20.86	23.42	18.08
2.8	21.44	21.81	23.19	18.28	201.7	198.87	226.99	186.55	20.72	20.80	23.27	18.08
3	21.59	21.95	23.24	18.48	203.04	200.29	229.92	188.1	20.66	20.74	23.11	18.09
3.2	21.74	22.08	23.28	18.69	204.31	201.79	232.78	189.75	20.60	20.66	22.96	18.10
3.4	21.89	22.2	23.31	18.9	205.6	203.34	235.5	191.49	20.52	20.59	22.79	18.11
3.6	22.03	22.31	23.35	19.11	206.89	204.98	238.06	193.36	20.44	20.50	22.55	18.12
3.8	22.16	22.42	23.38	19.31	208.25	206.71	240.43	195.37	20.36	20.40	22.32	18.12
4	22.29	22.51	23.41	19.51	209.67	208.53	242.6	197.48	20.27	20.29	21.77	18.12
4.2	22.41	22.61		19.7	211.17	210.47		199.7	20.18	20.17		18.11
4.4	22.53	22.69		19.88	212.81	212.51		201.97	20.10	20.05		18.09
4.6	22.64	22.77		20.04	214.58	214.69		203.89	20.01	19.93		18.05
4.8	22.75	22.85		20.17	216.45	216.97		205.61	19.92	19.80		17.99
5	22.86	22.92		20.29	218.44	219.39		207.3	19.83	19.67		17.91
5.2	22.97	22.99		20.38	220.52	221.93		208.96	19.73	19.54		17.81
5.4	23.07	23.05		20.46	222.69	224.63		210.58	19.63	19.47		17.69
5.6	23.17	23.11		20.53	224.95	227.47		212.13	19.53	19.22		17.56
5.8	23.26			20.66	227.29			213.67	19.42			17.48
6	23.35			20.70	229.69			215.32	19.31			17.32
6.2				20.73				216.91				17.15
6.4				20.69				217.86				16.93
6.6				20.91				219.35				17.01
6.8				20.71				221.31				16.59
7												16.41
7.2												16.08

Typical Performance Data

TEST CONDITIONS: $V_{DD} = +6\text{ V}$, $I_{DD} = 160\text{ mA}$ @ Temperature = $+25^{\circ}\text{C}$

FREQ	OIP3 @ 0 dBm/Tone	OIP3 @ +3 dBm/Tone	OIP3 @ +6 dBm/Tone	OIP3 @ +9 dBm/Tone	OIP3 @ +12 dBm/Tone
(GHz)	(dBm)	(dBm)	(dBm)	(dBm)	(dBm)
16.0	30.77	31.92	32.35	32.35	31.61
17.0	30.68	31.62	31.97	32.01	31.40
18.0	30.81	31.27	31.43	31.33	30.75
19.0	30.79	31.41	31.63	31.59	30.92
20.0	29.90	30.09	30.34	29.68	28.74
21.0	31.17	32.08	32.09	31.41	30.27
22.0	31.30	32.26	32.09	31.60	30.18
23.0	32.34	33.20	32.72	32.21	30.88
24.0	33.07	32.94	32.89	32.71	31.51
25.0	32.10	32.80	33.08	32.22	30.66
26.0	32.51	33.34	33.25	32.04	29.89
27.0	31.02	32.37	32.95	32.04	30.07
28.0	31.86	32.52	33.34	32.56	30.68
29.0	32.43	34.98	33.78	32.64	30.50
30.0	31.28	33.37	33.75	32.23	30.11
31.0	31.57	34.08	34.33	33.87	31.98
32.0	30.74	30.88	30.99	33.81	30.79
P _{OUT} /Tone (dBm)	@17 GHz	@20 GHz	@24 GHz	@27 GHz	@30 GHz
0	30.68	29.90	33.07	31.02	31.28
3	31.62	30.09	32.94	32.37	33.37
6	31.97	30.34	32.89	32.95	33.75
9	32.01	29.68	32.71	32.04	32.23
12	31.40	28.74	31.51	30.07	30.11

Typical Performance Data

TEST CONDITIONS: $V_{DD} = +6\text{ V}$, $I_{DD} = 160\text{ mA}$, 200 mA , 250 mA @ Temperature = $+25^\circ\text{C}$

FREQ	Gain @ 160 mA	Gain @ 200 mA	Gain @ 250 mA	1dB Comp. Output @ 160 mA	1dB Comp. Output @ 200 mA	1dB Comp. Output @ 250 mA	OIP3 @ 160 mA	OIP3 @ 200 mA	OIP3 @ 250 mA	Noise Figure @ 160 mA	Noise Figure @ 200 mA	Noise Figure @ 250 mA
(GHz)	(dB)	(dB)	(dB)	(dBm)	(dBm)	(dBm)	(dBm)	(dBm)	(dBm)	(dB)	(dB)	(dB)
16.0	20.25	21.09	21.64	25.44	25.00	24.65	32.35	30.77	28.41	6.65	6.77	6.97
16.5	20.74	21.53	22.07	23.79	24.36	24.12	32.34	31.16	28.83	6.07	6.21	6.41
17.0	20.95	21.70	22.22	23.19	23.70	23.53	31.97	30.65	28.20	5.70	5.78	6.04
17.2	20.97	21.70	22.22	23.06	23.55	23.46	31.79	30.44	28.15	5.58	5.60	5.89
17.4	20.96	21.67	22.18	22.86	23.43	23.20	32.16	30.78	28.43	5.44	5.51	5.77
17.6	20.94	21.64	22.14	22.72	23.22	23.04	32.22	31.10	28.56	5.32	5.38	5.67
17.8	20.92	21.60	22.09	22.70	23.07	22.99	30.85	29.86	27.44	5.26	5.34	5.57
18.0	20.89	21.56	22.04	22.64	23.13	23.23	31.43	30.20	27.63	5.20	5.32	5.55
18.2	20.86	21.52	21.99	22.48	22.90	22.99	31.82	30.45	28.02	5.21	5.27	5.54
18.4	20.82	21.46	21.92	22.31	22.77	22.88	32.11	30.64	28.01	5.17	5.26	5.49
18.6	20.77	21.39	21.84	22.51	23.05	23.26	31.59	29.92	27.33	5.19	5.29	5.51
18.8	20.70	21.30	21.74	22.53	23.00	23.17	31.57	30.16	27.52	5.17	5.27	5.45
19.0	20.65	21.24	21.66	22.19	22.76	22.96	31.63	30.52	27.88	5.08	5.23	5.45
19.2	20.60	21.16	21.58	22.49	23.12	23.34	31.82	30.19	27.50	5.12	5.20	5.44
19.4	20.54	21.07	21.48	22.54	23.15	23.29	30.84	29.70	27.02	5.04	5.19	5.42
19.6	20.50	21.01	21.41	22.11	22.76	22.90	31.32	29.70	26.92	5.06	5.20	5.36
19.8	20.48	20.98	21.36	22.44	23.12	23.38	31.16	29.61	26.90	4.97	5.06	5.31
20.0	20.46	20.94	21.31	22.31	22.87	23.10	30.34	28.97	26.24	4.86	5.02	5.20
20.2	20.46	20.93	21.29	22.03	22.58	22.79	31.70	29.84	27.10	4.80	4.92	5.14
20.4	20.45	20.90	21.26	22.30	22.86	23.09	31.29	29.96	27.05	4.71	4.86	5.09
20.6	20.47	20.92	21.27	22.27	22.72	22.86	31.29	29.43	26.78	4.63	4.81	4.96
20.8	20.49	20.93	21.26	22.04	22.58	22.76	32.90	31.08	28.15	4.59	4.73	4.98
21.0	20.51	20.93	21.26	22.42	23.00	23.16	32.09	30.11	27.07	4.56	4.66	4.95
21.2	20.51	20.92	21.24	22.42	22.85	22.94	33.18	31.47	28.54	4.51	4.61	4.85
21.4	20.49	20.88	21.19	22.40	22.93	23.13	32.59	30.18	27.13	4.44	4.65	4.83
21.6	20.47	20.86	21.16	22.65	23.16	23.34	32.04	30.28	27.32	4.43	4.57	4.80
21.8	20.45	20.82	21.12	22.52	22.89	23.07	33.04	31.30	28.32	4.35	4.60	4.86
22.0	20.44	20.80	21.09	22.42	22.74	22.86	32.09	30.02	26.97	4.35	4.53	4.75
22.2	20.42	20.76	21.04	22.91	23.25	23.40	32.53	30.57	27.36	4.32	4.52	4.66
22.4	20.39	20.72	20.99	22.75	22.99	23.14	32.50	30.65	27.62	4.29	4.47	4.72
22.6	20.38	20.71	20.97	22.50	22.83	22.91	32.14	29.95	26.66	4.35	4.52	4.70
22.8	20.35	20.67	20.94	22.43	22.78	22.92	32.99	30.90	27.66	4.29	4.45	4.73
23.0	20.33	20.65	20.92	22.53	22.67	22.83	32.72	30.71	27.33	4.28	4.41	4.67
23.2	20.37	20.67	20.93	22.34	22.54	22.70	32.03	29.59	26.54	4.21	4.39	4.66
23.4	20.39	20.69	20.94	22.45	22.63	22.80	33.62	31.01	27.66	4.19	4.35	4.61
23.5	20.41	20.70	20.96	22.43	22.57	22.71	32.92	30.61	27.26	4.18	4.36	4.61
23.6	20.42	20.72	20.97	22.44	22.52	22.66	31.72	29.06	25.79	4.14	4.35	4.59
23.8	20.48	20.77	21.02	22.62	22.80	22.88	32.51	30.15	27.00	4.10	4.27	4.59
24.0	20.55	20.84	21.07	22.81	22.98	23.07	32.89	31.06	27.71	4.11	4.25	4.51
24.2	20.63	20.92	21.15	22.64	22.81	22.88	32.89	30.33	26.86	4.05	4.22	4.51
24.4	20.69	20.97	21.20	22.56	22.74	22.77	33.87	31.29	27.95	4.02	4.23	4.53
24.6	20.74	21.03	21.27	22.97	23.15	23.26	32.82	31.01	27.54	4.05	4.23	4.52
24.8	20.82	21.13	21.36	23.04	23.19	23.23	32.87	30.25	26.69	3.99	4.19	4.48
25.0	20.88	21.19	21.43	22.94	23.11	23.05	33.08	30.92	27.37	4.02	4.15	4.54
25.2	20.94	21.26	21.51	23.18	23.37	23.26	32.38	29.96	26.62	3.97	4.15	4.44
25.4	21.03	21.35	21.61	22.94	23.09	22.92	32.70	29.90	26.60	3.93	4.10	4.38
25.6	21.11	21.43	21.68	22.80	22.93	22.86	33.05	30.96	27.36	3.88	4.10	4.36
25.8	21.20	21.51	21.78	23.13	23.27	23.30	33.37	30.57	26.95	3.88	4.07	4.38
26.0	21.28	21.61	21.90	22.93	22.98	23.07	33.25	30.29	26.84	3.81	4.00	4.35
26.2	21.39	21.72	22.02	23.21	23.32	23.41	33.37	30.90	27.25	3.78	3.97	4.31
26.4	21.49	21.84	22.15	23.22	23.30	23.35	32.39	29.47	26.01	3.75	4.02	4.33
26.6	21.62	21.98	22.29	23.46	23.53	23.56	33.22	30.83	27.02	3.78	3.96	4.21
26.8	21.75	22.12	22.46	23.24	23.35	23.36	32.31	30.11	26.48	3.74	4.02	4.27
27.0	21.88	22.26	22.61	23.64	23.74	23.68	32.95	30.30	26.64	3.71	3.88	4.24
27.5	22.18	22.61	23.02	24.11	24.21	24.05	33.31	30.71	27.31	3.55	3.85	4.10
28.0	22.63	23.13	23.60	24.06	24.07	24.04	33.34	30.66	27.02	3.45	3.73	4.06
28.5	23.33	23.94	24.52	23.96	23.81	23.80	33.17	30.31	26.56	3.41	3.71	4.03
29.0	23.94	24.69	25.39	23.79	23.72	23.75	33.78	30.44	26.39	3.37	3.68	3.95
29.5	24.10	25.07	26.03	23.39	23.21	23.22	33.57	29.81	25.90	3.43	3.66	4.00
30.0	23.79	24.96	26.17	23.09	23.16	23.16	33.75	29.31	25.44	3.39	3.68	4.01
30.5	22.84	24.13	25.52	22.97	22.90	22.85	33.17	29.11	24.79	3.44	3.71	4.08
31.0	21.67	23.02	24.49	21.90	21.81	21.79	34.33	30.07	25.40	3.48	3.79	4.12
31.5	20.12	21.45	22.91	21.88	21.83	21.85	33.41	29.99	25.29	3.54	3.79	4.20
32.0	18.27	19.52	20.89	20.90	20.85	20.94	30.99	29.31	24.75	3.52	3.79	4.26
32.5	16.44	17.61	18.90									
33.0	14.62	15.74	16.95									
33.5	12.93	14.00	15.14									
34.0	10.94	11.94	12.99									