

Solid State USB RF SP4T Switch

USB-1SP4T-183

Typical Performance Data

TEST CONDITIONS: @Temperature = 0°C, Pin=8dBm

Frequency (MHz)	Insertion Loss			
	(dB)			
	COM-J1	COM-J2	COM-J3	COM-J4
50	1.34	1.34	1.34	1.34
250	1.54	1.55	1.55	1.55
500	1.70	1.70	1.70	1.70
750	1.82	1.82	1.82	1.82
1000	1.94	1.95	1.94	1.94
1250	2.01	2.00	2.00	2.00
1500	2.06	2.05	2.05	2.05
1750	2.09	2.09	2.09	2.09
2000	2.12	2.12	2.12	2.12
2250	2.15	2.15	2.15	2.15
2500	2.20	2.21	2.21	2.21
2750	2.25	2.26	2.25	2.26
3000	2.30	2.30	2.30	2.31
3500	2.38	2.38	2.38	2.39
4000	2.45	2.45	2.45	2.46
4500	2.52	2.53	2.53	2.53
5000	2.60	2.60	2.60	2.60
5500	2.65	2.65	2.66	2.66
6000	2.71	2.72	2.73	2.73
6500	2.77	2.78	2.79	2.79
7000	2.85	2.86	2.86	2.87
7500	2.96	2.96	2.97	2.98
8000	3.03	3.05	3.06	3.04
8500	3.08	3.10	3.12	3.09
9000	3.12	3.14	3.16	3.14
9500	3.17	3.19	3.20	3.19
10000	3.24	3.27	3.27	3.25
10500	3.32	3.36	3.36	3.34
11000	3.43	3.46	3.46	3.47
11500	3.54	3.55	3.54	3.57
12000	3.60	3.61	3.60	3.62
12500	3.61	3.64	3.63	3.63
13000	3.65	3.68	3.68	3.68
13500	3.76	3.79	3.78	3.79
14000	3.84	3.88	3.87	3.85
14500	3.88	3.93	3.93	3.89
15000	3.90	3.95	3.96	3.93
15500	3.96	4.01	4.01	4.00
16000	4.02	4.08	4.08	4.07
16500	4.09	4.15	4.15	4.16
17000	4.20	4.27	4.24	4.28
17250	4.23	4.30	4.27	4.30
17500	4.25	4.33	4.29	4.32
17750	4.27	4.35	4.31	4.34
18000	4.34	4.42	4.36	4.40
18250	4.40	4.49	4.40	4.45
18500	4.47	4.56	4.45	4.52
18750	4.50	4.60	4.48	4.54
19000	4.51	4.61	4.51	4.55
19250	4.51	4.61	4.54	4.55
19500	4.51	4.62	4.57	4.56
19750	4.52	4.62	4.61	4.58
20000	4.55	4.64	4.65	4.60

Notes

- A. Performance and quality attributes and conditions not expressly stated in this specification document are intended to be excluded and do not form a part of this specification document.
- B. Electrical specifications and performance data contained in this specification document are based on Mini-Circuits' applicable established test performance criteria and measurement instructions.
- C. The parts covered by this specification document are subject to Mini-Circuits' standard limited warranty and terms and conditions (collectively, "Standard Terms"); Purchasers of this part are entitled to the rights and benefits contained therein. For a full statement of the Standard Terms and the exclusive rights and remedies thereunder, please visit Mini-Circuits' website at www.minicircuits.com/MCLStore/terms.jsp



Solid State USB RF SP4T Switch

USB-1SP4T-183

Typical Performance Data

TEST CONDITIONS: @Temperature = 0°C, Pin=8dBm

Frequency (MHz)	VSWR, Active Ports (:1)					VSWR, Internally Terminated Ports (:1)			
	COM	J1	J2	J3	J4	J1	J2	J3	J4
50	1.21	1.20	1.20	1.20	1.20	1.08	1.09	1.11	1.11
250	1.17	1.15	1.15	1.14	1.14	1.05	1.06	1.08	1.08
500	1.13	1.12	1.12	1.12	1.12	1.06	1.07	1.09	1.09
750	1.10	1.09	1.10	1.10	1.09	1.07	1.07	1.10	1.10
1000	1.08	1.09	1.10	1.08	1.09	1.08	1.08	1.10	1.11
1250	1.09	1.10	1.10	1.09	1.09	1.09	1.08	1.11	1.12
1500	1.10	1.11	1.09	1.09	1.10	1.10	1.08	1.11	1.12
1750	1.09	1.09	1.06	1.06	1.07	1.10	1.08	1.11	1.12
2000	1.06	1.04	1.02	1.02	1.03	1.09	1.07	1.10	1.11
2250	1.05	1.03	1.03	1.02	1.03	1.08	1.06	1.09	1.10
2500	1.07	1.07	1.08	1.07	1.08	1.07	1.05	1.08	1.08
2750	1.10	1.11	1.11	1.10	1.12	1.06	1.04	1.07	1.07
3000	1.12	1.14	1.13	1.12	1.15	1.05	1.03	1.06	1.05
3500	1.13	1.15	1.13	1.14	1.16	1.04	1.02	1.05	1.03
4000	1.12	1.11	1.10	1.11	1.12	1.03	1.01	1.03	1.01
4500	1.14	1.05	1.04	1.04	1.04	1.05	1.02	1.02	1.03
5000	1.16	1.10	1.08	1.07	1.08	1.08	1.05	1.06	1.08
5500	1.07	1.08	1.07	1.07	1.07	1.11	1.09	1.11	1.13
6000	1.08	1.07	1.05	1.07	1.07	1.15	1.12	1.16	1.17
6500	1.15	1.08	1.04	1.07	1.07	1.17	1.14	1.19	1.20
7000	1.13	1.14	1.10	1.09	1.13	1.17	1.15	1.20	1.19
7500	1.18	1.25	1.20	1.21	1.24	1.15	1.14	1.19	1.16
8000	1.20	1.22	1.22	1.25	1.21	1.13	1.14	1.19	1.13
8500	1.15	1.12	1.16	1.21	1.13	1.10	1.13	1.19	1.10
9000	1.10	1.04	1.08	1.14	1.07	1.09	1.14	1.19	1.11
9500	1.08	1.04	1.04	1.07	1.03	1.09	1.14	1.19	1.14
10000	1.11	1.14	1.17	1.15	1.07	1.09	1.13	1.17	1.16
10500	1.19	1.20	1.25	1.24	1.19	1.09	1.10	1.14	1.18
11000	1.29	1.25	1.25	1.24	1.28	1.12	1.09	1.12	1.20
11500	1.31	1.29	1.24	1.22	1.31	1.16	1.11	1.13	1.22
12000	1.21	1.29	1.23	1.21	1.28	1.19	1.15	1.16	1.22
12500	1.08	1.19	1.16	1.15	1.17	1.21	1.18	1.18	1.22
13000	1.11	1.12	1.08	1.07	1.15	1.21	1.18	1.18	1.18
13500	1.23	1.27	1.22	1.19	1.27	1.19	1.16	1.17	1.13
14000	1.26	1.32	1.29	1.27	1.26	1.15	1.13	1.15	1.07
14500	1.18	1.24	1.23	1.25	1.16	1.11	1.09	1.13	1.02
15000	1.12	1.11	1.11	1.17	1.06	1.06	1.04	1.09	1.03
15500	1.15	1.02	1.01	1.09	1.02	1.02	1.01	1.05	1.07
16000	1.16	1.03	1.04	1.09	1.02	1.07	1.08	1.03	1.12
16500	1.16	1.08	1.08	1.09	1.14	1.14	1.16	1.08	1.17
17000	1.26	1.21	1.22	1.16	1.26	1.20	1.23	1.13	1.21
17250	1.25	1.23	1.25	1.17	1.26	1.22	1.25	1.14	1.22
17500	1.18	1.19	1.21	1.13	1.21	1.23	1.26	1.14	1.21
17750	1.08	1.18	1.20	1.09	1.19	1.23	1.27	1.14	1.20
18000	1.08	1.24	1.26	1.13	1.24	1.23	1.26	1.12	1.19
18250	1.17	1.34	1.35	1.19	1.33	1.22	1.25	1.10	1.17
18500	1.24	1.40	1.42	1.24	1.37	1.19	1.22	1.08	1.14
18750	1.25	1.40	1.43	1.24	1.36	1.17	1.19	1.05	1.13
19000	1.24	1.36	1.40	1.21	1.31	1.14	1.16	1.03	1.12
19250	1.21	1.29	1.33	1.18	1.24	1.11	1.13	1.02	1.12
19500	1.19	1.21	1.26	1.17	1.16	1.09	1.11	1.04	1.12
19750	1.17	1.15	1.21	1.18	1.09	1.06	1.09	1.05	1.12
20000	1.17	1.10	1.15	1.19	1.04	1.05	1.08	1.06	1.12

Notes

- A. Performance and quality attributes and conditions not expressly stated in this specification document are intended to be excluded and do not form a part of this specification document.
- B. Electrical specifications and performance data contained in this specification document are based on Mini-Circuits' applicable established test performance criteria and measurement instructions.
- C. The parts covered by this specification document are subject to Mini-Circuits' standard limited warranty and terms and conditions (collectively, "Standard Terms"); Purchasers of this part are entitled to the rights and benefits contained therein. For a full statement of the Standard Terms and the exclusive rights and remedies thereunder, please visit Mini-Circuits' website at www.minicircuits.com/MCLStore/terms.jsp



Solid State USB RF SP4T Switch

USB-1SP4T-183

Typical Performance Data

TEST CONDITIONS: @Temperature = 0°C, Pin=8dBm

Frequency (MHz)	Isolation @ Active states (dB)				Isolation @ Disconnected state (dB)			
	COM-1	COM-2	J2-J3	J3-J4	COM-1	COM-2	J2-J3	J3-J4
50	90.02	103.15	114.03	89.05	107.87	104.68	102.71	101.14
250	84.39	109.53	103.62	86.41	105.78	104.74	107.63	93.91
500	78.18	102.58	107.72	81.96	103.16	111.29	111.55	89.06
750	74.39	101.48	97.77	78.12	104.48	104.82	109.78	85.38
1000	71.78	106.39	104.57	75.85	104.95	107.41	101.42	83.45
1250	69.83	109.85	110.40	74.27	107.43	102.80	109.80	81.90
1500	68.52	110.86	110.39	73.09	106.23	110.87	109.79	80.55
1750	67.41	112.63	115.24	72.05	102.84	113.22	109.23	79.44
2000	66.78	114.23	106.85	71.02	109.63	108.35	107.03	78.29
2250	66.24	120.49	105.74	70.21	109.94	99.77	103.61	77.83
2500	65.75	117.17	105.25	69.37	105.18	106.11	110.58	76.85
2750	65.46	96.19	103.79	68.75	103.75	106.01	107.19	76.38
3000	65.03	109.20	105.29	68.52	110.49	97.89	112.49	75.26
3500	64.41	103.93	101.73	67.85	109.45	112.46	112.59	73.98
4000	64.16	115.06	109.77	67.37	108.15	104.90	114.32	72.68
4500	64.14	108.91	111.48	66.91	109.10	106.92	105.63	71.30
5000	64.13	107.52	103.76	66.79	103.75	111.41	107.39	70.05
5500	63.94	105.13	103.08	66.50	107.40	104.43	109.23	68.84
6000	63.60	116.63	108.95	66.10	105.48	112.23	105.91	67.87
6500	63.18	111.87	116.18	66.03	112.35	114.35	113.84	67.22
7000	62.68	106.75	105.77	66.39	111.52	112.92	109.71	66.93
7500	62.02	111.97	103.11	66.42	102.23	113.90	111.71	67.26
8000	61.39	105.55	104.66	65.77	109.28	111.07	116.03	67.87
8500	60.93	109.12	103.36	65.58	107.71	112.96	107.38	68.94
9000	60.87	102.25	109.22	66.12	108.17	110.16	110.98	70.68
9500	61.17	113.17	111.51	66.64	114.85	109.97	110.34	72.89
10000	61.47	106.10	105.92	66.70	115.89	104.00	116.21	73.70
10500	61.43	104.47	108.25	65.12	107.95	108.36	107.29	74.31
11000	61.45	103.03	101.71	64.62	106.11	102.73	116.73	75.30
11500	61.71	105.04	97.34	63.70	103.14	105.75	115.08	73.90
12000	62.07	104.64	97.57	62.71	112.59	108.34	105.41	73.34
12500	62.19	107.72	95.76	62.53	105.14	107.58	110.33	75.76
13000	62.16	109.24	99.79	61.98	106.49	108.05	114.91	75.39
13500	62.17	115.21	93.31	61.56	100.70	106.03	108.68	74.73
14000	62.32	105.57	95.96	61.88	106.99	103.08	107.25	78.20
14500	62.40	104.79	93.39	61.78	108.04	105.97	110.82	77.60
15000	61.86	109.11	93.02	61.86	101.22	110.10	112.76	75.22
15500	60.99	108.26	97.12	61.87	100.13	97.30	107.01	72.53
16000	60.32	102.45	95.91	61.16	108.71	100.44	111.70	70.54
16500	59.95	100.70	92.60	59.75	95.88	100.40	109.30	69.65
17000	59.51	97.58	96.60	59.20	109.74	96.40	109.08	67.70
17250	59.11	95.71	93.48	59.22	98.24	97.24	108.68	67.35
17500	58.51	104.32	92.95	59.19	102.54	97.67	112.13	66.39
17750	57.80	102.31	96.31	59.20	101.70	98.64	101.97	65.36
18000	57.16	103.19	95.27	59.17	108.42	95.27	109.81	64.99
18250	56.41	97.96	94.63	59.85	97.55	98.00	113.10	67.45
18500	55.80	100.24	91.55	58.76	97.93	99.13	108.40	65.98
18750	55.27	98.39	92.91	57.95	92.19	95.25	107.02	64.98
19000	54.83	97.11	93.68	57.98	96.39	97.57	115.71	65.19
19250	54.50	97.71	92.39	58.03	98.20	96.05	103.22	65.48
19500	54.27	97.79	95.69	57.97	96.00	93.04	108.78	65.73
19750	54.10	94.87	96.63	57.39	95.03	92.10	106.97	65.66
20000	53.87	96.61	99.16	56.59	99.92	92.74	110.89	64.93

Notes

- A. Performance and quality attributes and conditions not expressly stated in this specification document are intended to be excluded and do not form a part of this specification document.
- B. Electrical specifications and performance data contained in this specification document are based on Mini-Circuits' applicable established test performance criteria and measurement instructions.
- C. The parts covered by this specification document are subject to Mini-Circuits' standard limited warranty and terms and conditions (collectively, "Standard Terms"); Purchasers of this part are entitled to the rights and benefits contained therein. For a full statement of the Standard Terms and the exclusive rights and remedies thereunder, please visit Mini-Circuits' website at www.minicircuits.com/MCLStore/terms.jsp



Solid State USB RF SP4T Switch

USB-1SP4T-183

Typical Performance Data

TEST CONDITIONS: @Temperature = +25°C, Pin=8dBm

Frequency (MHz)	Insertion Loss			
	(dB)			
	COM-J1	COM-J2	COM-J3	COM-J4
50	1.43	1.43	1.43	1.43
250	1.64	1.64	1.64	1.64
500	1.80	1.81	1.81	1.81
750	1.93	1.93	1.94	1.94
1000	2.07	2.07	2.07	2.07
1250	2.13	2.13	2.13	2.13
1500	2.19	2.19	2.19	2.20
1750	2.24	2.23	2.24	2.24
2000	2.27	2.27	2.27	2.27
2250	2.30	2.30	2.31	2.31
2500	2.35	2.36	2.36	2.36
2750	2.40	2.40	2.41	2.41
3000	2.46	2.46	2.46	2.47
3500	2.55	2.55	2.56	2.56
4000	2.63	2.63	2.64	2.64
4500	2.71	2.71	2.72	2.71
5000	2.79	2.79	2.80	2.79
5500	2.84	2.85	2.86	2.85
6000	2.91	2.92	2.93	2.93
6500	2.98	2.98	3.00	2.99
7000	3.06	3.06	3.07	3.07
7500	3.18	3.18	3.19	3.19
8000	3.26	3.27	3.29	3.27
8500	3.31	3.34	3.36	3.32
9000	3.36	3.38	3.40	3.38
9500	3.42	3.44	3.45	3.43
10000	3.49	3.52	3.52	3.49
10500	3.57	3.61	3.62	3.59
11000	3.69	3.72	3.72	3.73
11500	3.82	3.82	3.82	3.84
12000	3.89	3.89	3.89	3.90
12500	3.90	3.92	3.92	3.91
13000	3.95	3.97	3.98	3.98
13500	4.05	4.07	4.07	4.08
14000	4.13	4.16	4.16	4.13
14500	4.18	4.22	4.24	4.19
15000	4.22	4.26	4.29	4.24
15500	4.29	4.33	4.34	4.32
16000	4.36	4.41	4.42	4.40
16500	4.44	4.49	4.51	4.51
17000	4.55	4.61	4.60	4.62
17250	4.58	4.64	4.62	4.64
17500	4.61	4.67	4.65	4.66
17750	4.64	4.69	4.67	4.68
18000	4.71	4.77	4.72	4.75
18250	4.79	4.85	4.77	4.82
18500	4.85	4.92	4.82	4.87
18750	4.87	4.96	4.86	4.89
19000	4.88	4.97	4.89	4.90
19250	4.88	4.97	4.91	4.91
19500	4.89	4.98	4.96	4.93
19750	4.91	4.99	4.99	4.95
20000	4.93	5.01	5.04	4.98

Notes

- A. Performance and quality attributes and conditions not expressly stated in this specification document are intended to be excluded and do not form a part of this specification document.
- B. Electrical specifications and performance data contained in this specification document are based on Mini-Circuits' applicable established test performance criteria and measurement instructions.
- C. The parts covered by this specification document are subject to Mini-Circuits' standard limited warranty and terms and conditions (collectively, "Standard Terms"); Purchasers of this part are entitled to the rights and benefits contained therein. For a full statement of the Standard Terms and the exclusive rights and remedies thereunder, please visit Mini-Circuits' website at www.minicircuits.com/MCLStore/terms.jsp



Solid State USB RF SP4T Switch

USB-1SP4T-183

Typical Performance Data

TEST CONDITIONS: @Temperature = +25°C, Pin=8dBm

Frequency (MHz)	VSWR, Active Ports (:1)					VSWR, Internally Terminated Ports (:1)			
	COM	J1	J2	J3	J4	J1	J2	J3	J4
50	1.22	1.21	1.21	1.21	1.21	1.07	1.08	1.10	1.10
250	1.18	1.16	1.16	1.16	1.16	1.05	1.06	1.08	1.08
500	1.14	1.13	1.14	1.13	1.13	1.06	1.06	1.09	1.09
750	1.11	1.10	1.11	1.10	1.10	1.07	1.07	1.09	1.10
1000	1.09	1.09	1.10	1.09	1.09	1.08	1.07	1.10	1.11
1250	1.09	1.10	1.10	1.09	1.09	1.09	1.08	1.11	1.12
1500	1.10	1.11	1.09	1.09	1.10	1.09	1.08	1.11	1.12
1750	1.09	1.09	1.06	1.06	1.07	1.09	1.08	1.11	1.12
2000	1.06	1.04	1.02	1.02	1.02	1.08	1.07	1.09	1.10
2250	1.04	1.03	1.04	1.03	1.03	1.07	1.06	1.08	1.09
2500	1.07	1.08	1.08	1.08	1.08	1.06	1.04	1.07	1.07
2750	1.10	1.12	1.12	1.11	1.12	1.06	1.04	1.06	1.06
3000	1.13	1.15	1.14	1.13	1.16	1.05	1.03	1.06	1.05
3500	1.14	1.16	1.14	1.15	1.17	1.04	1.02	1.04	1.03
4000	1.13	1.12	1.11	1.12	1.13	1.04	1.01	1.02	1.01
4500	1.14	1.06	1.05	1.06	1.06	1.05	1.03	1.01	1.03
5000	1.16	1.10	1.08	1.07	1.08	1.08	1.05	1.06	1.07
5500	1.07	1.09	1.08	1.08	1.07	1.12	1.09	1.12	1.13
6000	1.09	1.08	1.06	1.08	1.08	1.15	1.13	1.17	1.18
6500	1.16	1.08	1.05	1.07	1.07	1.18	1.15	1.20	1.20
7000	1.15	1.15	1.11	1.10	1.15	1.18	1.15	1.20	1.19
7500	1.18	1.26	1.21	1.22	1.25	1.15	1.14	1.18	1.16
8000	1.19	1.22	1.21	1.24	1.21	1.12	1.12	1.17	1.11
8500	1.15	1.11	1.15	1.20	1.12	1.09	1.12	1.17	1.09
9000	1.10	1.03	1.07	1.14	1.07	1.08	1.13	1.18	1.10
9500	1.08	1.06	1.06	1.08	1.01	1.09	1.14	1.18	1.13
10000	1.12	1.15	1.19	1.16	1.08	1.08	1.12	1.16	1.14
10500	1.18	1.19	1.24	1.23	1.18	1.08	1.08	1.13	1.16
11000	1.28	1.23	1.23	1.22	1.26	1.12	1.08	1.12	1.19
11500	1.30	1.30	1.24	1.23	1.32	1.17	1.12	1.14	1.22
12000	1.20	1.31	1.25	1.22	1.29	1.21	1.16	1.17	1.23
12500	1.06	1.20	1.16	1.14	1.18	1.23	1.18	1.18	1.23
13000	1.11	1.15	1.10	1.09	1.17	1.22	1.18	1.17	1.19
13500	1.21	1.28	1.23	1.19	1.27	1.19	1.15	1.15	1.13
14000	1.22	1.31	1.28	1.26	1.25	1.14	1.12	1.13	1.07
14500	1.17	1.24	1.24	1.26	1.17	1.10	1.09	1.12	1.02
15000	1.13	1.12	1.12	1.19	1.08	1.06	1.05	1.10	1.03
15500	1.17	1.01	1.01	1.09	1.02	1.01	1.01	1.06	1.06
16000	1.19	1.04	1.04	1.10	1.02	1.06	1.08	1.02	1.11
16500	1.20	1.08	1.08	1.11	1.15	1.13	1.15	1.07	1.16
17000	1.28	1.21	1.22	1.16	1.25	1.19	1.21	1.11	1.19
17250	1.26	1.20	1.22	1.14	1.23	1.20	1.22	1.12	1.19
17500	1.19	1.16	1.19	1.10	1.18	1.22	1.24	1.13	1.19
17750	1.11	1.17	1.18	1.07	1.17	1.23	1.25	1.13	1.19
18000	1.13	1.25	1.26	1.13	1.24	1.22	1.24	1.11	1.18
18250	1.21	1.35	1.36	1.20	1.33	1.21	1.24	1.10	1.16
18500	1.26	1.41	1.43	1.24	1.37	1.19	1.22	1.08	1.14
18750	1.26	1.41	1.44	1.25	1.35	1.18	1.20	1.06	1.13
19000	1.22	1.36	1.40	1.22	1.30	1.15	1.18	1.04	1.11
19250	1.19	1.29	1.34	1.20	1.24	1.12	1.15	1.03	1.10
19500	1.18	1.23	1.29	1.19	1.18	1.11	1.14	1.03	1.10
19750	1.18	1.18	1.24	1.19	1.12	1.09	1.12	1.04	1.10
20000	1.17	1.13	1.18	1.20	1.07	1.07	1.12	1.05	1.09

Notes

- A. Performance and quality attributes and conditions not expressly stated in this specification document are intended to be excluded and do not form a part of this specification document.
- B. Electrical specifications and performance data contained in this specification document are based on Mini-Circuits' applicable established test performance criteria and measurement instructions.
- C. The parts covered by this specification document are subject to Mini-Circuits' standard limited warranty and terms and conditions (collectively, "Standard Terms"); Purchasers of this part are entitled to the rights and benefits contained therein. For a full statement of the Standard Terms and the exclusive rights and remedies thereunder, please visit Mini-Circuits' website at www.minicircuits.com/MCLStore/terms.jsp

REV. A
USB-1SP4T-183
220220
Page 5 of 9

Solid State USB RF SP4T Switch

USB-1SP4T-183

Typical Performance Data

TEST CONDITIONS: @Temperature = +25°C, Pin=8dBm

Frequency (MHz)	Isolation @ Active states (dB)				Isolation @ Disconnected state (dB)			
	COM-1	COM-2	J2-J3	J3-J4	COM-1	COM-2	J2-J3	J3-J4
50	88.59	106.13	113.97	87.76	100.67	104.84	112.77	101.77
250	83.42	115.54	100.28	85.42	120.01	114.45	115.55	94.72
500	77.77	117.10	106.26	81.16	103.34	107.04	103.33	89.18
750	74.36	106.72	114.37	77.73	101.97	108.15	117.45	86.36
1000	71.46	107.21	110.54	75.16	104.74	109.39	110.14	83.17
1250	69.43	105.84	113.59	73.87	105.93	106.89	106.42	81.74
1500	68.22	110.42	107.33	72.50	105.90	106.27	105.84	80.81
1750	67.16	106.33	112.09	71.56	110.11	103.98	111.12	79.81
2000	66.37	105.90	109.50	70.37	104.04	104.33	111.76	78.58
2250	65.76	101.18	110.95	69.63	112.97	111.50	115.36	77.67
2500	65.20	108.07	106.38	68.71	106.83	99.50	110.38	76.71
2750	64.92	102.99	103.00	68.30	111.19	105.62	105.83	75.76
3000	64.52	106.34	108.44	67.73	113.58	104.30	108.64	75.33
3500	63.89	108.03	107.49	67.14	108.41	104.45	105.66	74.20
4000	63.79	114.18	108.94	66.56	109.93	110.33	114.92	73.17
4500	63.74	106.04	104.69	66.31	116.73	107.11	106.56	71.60
5000	63.67	107.19	112.62	66.25	105.25	101.14	106.67	70.34
5500	63.60	111.00	120.42	65.96	111.29	111.70	108.53	69.32
6000	63.23	107.15	106.16	65.60	107.44	107.44	111.60	68.38
6500	62.89	110.94	112.70	65.57	119.33	103.53	113.98	67.70
7000	62.53	108.04	108.71	66.01	114.11	113.04	104.30	67.49
7500	62.03	106.73	108.87	65.89	105.19	112.36	105.59	67.67
8000	61.48	110.11	105.69	65.33	107.92	105.29	108.43	68.45
8500	61.06	107.16	104.64	65.47	112.96	110.11	105.69	69.47
9000	61.02	110.02	103.51	66.63	107.30	110.36	113.40	71.23
9500	61.19	111.15	114.14	67.55	108.01	113.07	108.14	73.31
10000	61.50	108.39	103.99	67.35	107.97	112.39	112.91	74.77
10500	61.59	105.70	102.82	66.40	108.41	117.77	107.72	77.34
11000	61.64	115.40	107.37	66.20	103.99	109.67	106.89	80.06
11500	61.92	108.99	102.14	65.36	106.53	108.92	108.81	80.63
12000	62.25	115.83	98.00	64.25	102.51	102.91	109.11	80.37
12500	62.58	106.66	100.45	63.84	107.08	106.64	106.51	84.05
13000	62.64	100.21	97.18	63.48	105.39	110.29	102.34	83.45
13500	62.75	103.39	102.59	63.04	99.62	105.09	115.73	79.44
14000	62.96	108.83	97.56	63.27	104.95	106.05	112.86	79.71
14500	63.16	107.79	95.18	63.03	106.09	107.23	103.36	77.03
15000	62.68	104.04	96.04	63.04	104.02	106.32	110.91	74.66
15500	61.91	104.13	97.96	62.97	104.88	104.17	104.88	72.35
16000	61.12	100.77	97.70	62.10	102.52	97.96	107.70	70.78
16500	60.70	103.32	97.31	60.63	97.97	101.30	104.83	69.96
17000	60.22	98.40	96.73	60.36	105.37	96.98	105.36	68.60
17250	59.72	103.04	97.56	60.43	102.31	101.09	110.97	68.57
17500	59.14	104.23	99.04	60.34	103.02	99.39	111.49	67.49
17750	58.42	114.05	97.97	60.45	99.48	109.56	101.98	66.43
18000	57.72	100.86	97.02	60.31	107.32	97.85	109.21	66.15
18250	57.10	96.01	94.63	61.10	103.45	96.38	104.79	69.10
18500	56.45	98.98	97.94	59.94	100.04	97.01	105.28	67.64
18750	55.88	97.84	93.80	59.22	95.53	95.46	103.87	66.43
19000	55.41	97.41	96.49	59.46	98.93	96.27	104.50	67.07
19250	55.10	99.60	96.21	59.64	97.61	99.33	113.22	67.79
19500	54.87	97.01	100.35	59.27	95.93	93.64	102.94	67.68
19750	54.68	102.64	97.74	58.40	99.07	94.81	112.25	67.29
20000	54.46	94.67	101.31	57.59	95.63	93.10	107.59	66.59

Notes

- A. Performance and quality attributes and conditions not expressly stated in this specification document are intended to be excluded and do not form a part of this specification document.
- B. Electrical specifications and performance data contained in this specification document are based on Mini-Circuits' applicable established test performance criteria and measurement instructions.
- C. The parts covered by this specification document are subject to Mini-Circuits' standard limited warranty and terms and conditions (collectively, "Standard Terms"); Purchasers of this part are entitled to the rights and benefits contained therein. For a full statement of the Standard Terms and the exclusive rights and remedies thereunder, please visit Mini-Circuits' website at www.minicircuits.com/MCLStore/terms.jsp



Solid State USB RF SP4T Switch

USB-1SP4T-183

Typical Performance Data

TEST CONDITIONS: @Temperature = +50°C, Pin=8dBm

Frequency (MHz)	Insertion Loss			
	(dB)			
	COM-J1	COM-J2	COM-J3	COM-J4
50	1.50	1.50	1.50	1.50
250	1.71	1.71	1.71	1.71
500	1.88	1.88	1.88	1.88
750	2.01	2.01	2.01	2.01
1000	2.15	2.15	2.15	2.14
1250	2.21	2.21	2.21	2.21
1500	2.28	2.28	2.28	2.28
1750	2.33	2.32	2.32	2.32
2000	2.36	2.36	2.36	2.35
2250	2.40	2.39	2.40	2.39
2500	2.44	2.44	2.45	2.44
2750	2.50	2.49	2.50	2.49
3000	2.55	2.55	2.55	2.55
3500	2.65	2.64	2.65	2.65
4000	2.73	2.73	2.74	2.73
4500	2.81	2.81	2.82	2.81
5000	2.89	2.89	2.90	2.89
5500	2.95	2.95	2.96	2.95
6000	3.02	3.02	3.04	3.02
6500	3.09	3.08	3.10	3.08
7000	3.17	3.16	3.17	3.17
7500	3.29	3.28	3.29	3.29
8000	3.38	3.38	3.40	3.37
8500	3.43	3.45	3.47	3.43
9000	3.49	3.50	3.52	3.49
9500	3.54	3.55	3.57	3.54
10000	3.61	3.63	3.64	3.60
10500	3.70	3.73	3.74	3.70
11000	3.83	3.84	3.85	3.85
11500	3.96	3.95	3.96	3.97
12000	4.04	4.02	4.03	4.03
12500	4.05	4.05	4.07	4.05
13000	4.10	4.10	4.12	4.11
13500	4.20	4.21	4.22	4.21
14000	4.28	4.30	4.31	4.27
14500	4.34	4.36	4.39	4.33
15000	4.38	4.41	4.44	4.39
15500	4.45	4.47	4.49	4.46
16000	4.52	4.56	4.58	4.55
16500	4.61	4.64	4.67	4.66
17000	4.72	4.76	4.76	4.77
17250	4.75	4.79	4.78	4.79
17500	4.78	4.82	4.81	4.81
17750	4.81	4.85	4.83	4.84
18000	4.89	4.93	4.89	4.91
18250	4.96	5.00	4.93	4.97
18500	5.02	5.07	4.98	5.02
18750	5.04	5.10	5.02	5.04
19000	5.05	5.12	5.05	5.05
19250	5.05	5.12	5.08	5.06
19500	5.07	5.14	5.12	5.08
19750	5.08	5.15	5.16	5.10
20000	5.11	5.17	5.20	5.13

Notes

- A. Performance and quality attributes and conditions not expressly stated in this specification document are intended to be excluded and do not form a part of this specification document.
- B. Electrical specifications and performance data contained in this specification document are based on Mini-Circuits' applicable established test performance criteria and measurement instructions.
- C. The parts covered by this specification document are subject to Mini-Circuits standard limited warranty and terms and conditions (collectively, "Standard Terms"); Purchasers of this part are entitled to the rights and benefits contained therein. For a full statement of the Standard Terms and the exclusive rights and remedies thereunder, please visit Mini-Circuits' website at www.minicircuits.com/MCLStore/terms.jsp



Solid State USB RF SP4T Switch

USB-1SP4T-183

Typical Performance Data

TEST CONDITIONS: @Temperature = +50°C, Pin=8dBm

Frequency (MHz)	VSWR, Active Ports (:1)					VSWR, Internally Terminated Ports (:1)			
	COM	J1	J2	J3	J4	J1	J2	J3	J4
50	1.24	1.23	1.23	1.23	1.23	1.07	1.08	1.10	1.10
250	1.20	1.17	1.17	1.17	1.17	1.05	1.06	1.08	1.08
500	1.16	1.14	1.15	1.14	1.14	1.05	1.06	1.08	1.08
750	1.12	1.11	1.12	1.11	1.11	1.07	1.07	1.09	1.09
1000	1.09	1.10	1.11	1.09	1.09	1.07	1.07	1.10	1.10
1250	1.09	1.10	1.10	1.09	1.09	1.08	1.08	1.11	1.11
1500	1.10	1.10	1.09	1.08	1.09	1.09	1.08	1.11	1.12
1750	1.09	1.08	1.06	1.06	1.07	1.09	1.08	1.11	1.11
2000	1.06	1.04	1.01	1.02	1.02	1.08	1.07	1.09	1.10
2250	1.05	1.03	1.04	1.03	1.03	1.07	1.06	1.08	1.09
2500	1.07	1.08	1.09	1.08	1.09	1.06	1.05	1.07	1.08
2750	1.11	1.12	1.12	1.12	1.13	1.06	1.04	1.06	1.06
3000	1.13	1.16	1.15	1.14	1.16	1.05	1.03	1.05	1.05
3500	1.15	1.17	1.15	1.16	1.18	1.04	1.02	1.04	1.03
4000	1.14	1.13	1.11	1.13	1.14	1.04	1.02	1.02	1.00
4500	1.15	1.07	1.06	1.06	1.07	1.06	1.03	1.02	1.03
5000	1.16	1.10	1.08	1.07	1.08	1.08	1.06	1.06	1.08
5500	1.07	1.09	1.08	1.08	1.07	1.12	1.10	1.12	1.13
6000	1.09	1.08	1.06	1.08	1.08	1.15	1.13	1.17	1.18
6500	1.17	1.08	1.04	1.07	1.07	1.18	1.15	1.20	1.20
7000	1.15	1.15	1.11	1.10	1.15	1.18	1.15	1.20	1.19
7500	1.18	1.26	1.22	1.22	1.25	1.15	1.14	1.18	1.16
8000	1.19	1.23	1.21	1.24	1.22	1.12	1.12	1.16	1.11
8500	1.15	1.11	1.15	1.20	1.12	1.09	1.11	1.16	1.08
9000	1.10	1.03	1.07	1.13	1.06	1.08	1.12	1.18	1.10
9500	1.08	1.06	1.06	1.07	1.01	1.08	1.13	1.18	1.12
10000	1.11	1.16	1.19	1.16	1.08	1.07	1.11	1.15	1.14
10500	1.18	1.20	1.25	1.23	1.18	1.07	1.08	1.12	1.16
11000	1.28	1.23	1.23	1.23	1.27	1.11	1.08	1.12	1.19
11500	1.31	1.30	1.26	1.24	1.33	1.17	1.13	1.15	1.23
12000	1.20	1.32	1.26	1.23	1.31	1.21	1.17	1.17	1.24
12500	1.06	1.21	1.17	1.15	1.20	1.24	1.19	1.18	1.23
13000	1.11	1.15	1.11	1.09	1.18	1.22	1.18	1.16	1.19
13500	1.20	1.28	1.23	1.19	1.27	1.19	1.15	1.15	1.13
14000	1.21	1.32	1.28	1.26	1.25	1.15	1.12	1.14	1.07
14500	1.16	1.25	1.24	1.26	1.17	1.11	1.09	1.12	1.02
15000	1.12	1.13	1.13	1.19	1.08	1.06	1.05	1.10	1.03
15500	1.17	1.01	1.01	1.09	1.03	1.02	1.01	1.06	1.07
16000	1.19	1.03	1.04	1.09	1.03	1.06	1.08	1.03	1.12
16500	1.20	1.08	1.09	1.11	1.15	1.13	1.15	1.07	1.16
17000	1.28	1.21	1.22	1.16	1.25	1.19	1.21	1.11	1.19
17250	1.26	1.21	1.23	1.15	1.24	1.21	1.23	1.12	1.19
17500	1.20	1.17	1.19	1.10	1.19	1.22	1.24	1.12	1.19
17750	1.11	1.17	1.18	1.07	1.17	1.23	1.25	1.12	1.18
18000	1.13	1.25	1.26	1.13	1.24	1.23	1.24	1.11	1.17
18250	1.20	1.35	1.36	1.20	1.32	1.22	1.24	1.10	1.16
18500	1.25	1.40	1.42	1.23	1.36	1.19	1.21	1.08	1.13
18750	1.24	1.40	1.43	1.24	1.34	1.18	1.20	1.06	1.12
19000	1.21	1.35	1.39	1.22	1.29	1.15	1.17	1.04	1.11
19250	1.18	1.29	1.34	1.20	1.23	1.13	1.15	1.03	1.10
19500	1.18	1.24	1.29	1.20	1.18	1.11	1.14	1.04	1.10
19750	1.18	1.18	1.24	1.19	1.12	1.09	1.13	1.04	1.10
20000	1.17	1.14	1.19	1.20	1.07	1.08	1.12	1.05	1.09

Notes

- A. Performance and quality attributes and conditions not expressly stated in this specification document are intended to be excluded and do not form a part of this specification document.
- B. Electrical specifications and performance data contained in this specification document are based on Mini-Circuits' applicable established test performance criteria and measurement instructions.
- C. The parts covered by this specification document are subject to Mini-Circuits' standard limited warranty and terms and conditions (collectively, "Standard Terms"); Purchasers of this part are entitled to the rights and benefits contained therein. For a full statement of the Standard Terms and the exclusive rights and remedies thereunder, please visit Mini-Circuits' website at www.minicircuits.com/MCLStore/terms.jsp



Solid State USB RF SP4T Switch

USB-1SP4T-183

Typical Performance Data

TEST CONDITIONS: @Temperature = +50°C, Pin=8dBm

Frequency (MHz)	Isolation @ Active states (dB)				Isolation @ Disconnected state (dB)			
	COM-1	COM-2	J2-J3	J3-J4	COM-1	COM-2	J2-J3	J3-J4
50	86.99	100.29	103.50	88.10	108.27	110.40	115.07	95.20
250	83.16	113.35	108.45	83.99	110.13	106.77	103.10	92.53
500	77.85	103.54	100.15	80.90	109.49	105.37	114.91	88.93
750	73.98	111.76	103.31	77.05	107.38	107.32	103.62	85.63
1000	71.25	104.41	112.33	74.72	103.13	105.74	103.31	82.43
1250	69.30	105.55	105.85	73.27	106.59	105.25	120.26	81.60
1500	67.72	109.52	111.74	71.97	106.63	104.91	106.08	80.50
1750	66.78	101.06	103.09	70.90	108.12	107.21	102.73	79.54
2000	66.01	108.36	110.81	70.13	109.35	111.14	109.03	78.06
2250	65.33	101.84	113.13	69.10	101.70	121.64	103.66	77.42
2500	64.84	103.44	113.02	68.23	102.60	103.89	104.88	76.91
2750	64.40	104.56	103.02	67.38	113.80	96.77	104.24	76.49
3000	64.16	108.22	102.18	67.17	107.85	110.29	104.13	75.30
3500	63.53	107.74	102.36	66.57	103.60	104.09	109.67	74.31
4000	63.28	109.63	103.47	66.03	107.64	113.72	104.28	73.10
4500	63.26	110.68	103.67	65.71	111.48	107.44	110.83	71.87
5000	63.21	109.39	107.54	65.70	100.38	110.84	105.94	70.53
5500	63.12	102.18	108.83	65.40	107.96	104.98	113.84	69.49
6000	62.90	111.15	103.38	65.04	112.90	108.48	110.40	68.59
6500	62.59	104.81	110.71	65.07	108.33	115.52	111.71	67.88
7000	62.33	116.08	110.31	65.36	107.36	109.26	105.22	67.66
7500	61.90	117.41	109.47	65.22	112.67	109.11	115.80	68.01
8000	61.51	107.66	106.68	64.76	110.42	109.10	103.82	68.44
8500	61.07	119.45	105.34	65.13	109.58	120.67	103.99	69.41
9000	61.04	107.73	108.94	66.69	105.49	111.85	111.39	70.89
9500	61.23	108.30	103.96	67.99	109.15	105.95	112.23	73.01
10000	61.51	109.52	105.08	67.90	108.43	110.49	110.48	74.55
10500	61.49	105.27	108.46	67.37	104.13	109.98	106.08	77.95
11000	61.56	106.06	105.17	67.26	105.81	105.35	112.81	82.93
11500	61.83	108.56	103.32	66.38	103.85	113.68	112.27	89.21
12000	62.24	108.72	97.61	65.24	104.91	109.02	103.56	92.68
12500	62.54	112.62	98.33	64.76	103.14	110.07	119.84	87.47
13000	62.72	101.66	98.88	64.45	103.14	108.48	112.17	85.40
13500	62.94	101.77	94.09	63.84	114.06	107.89	114.49	79.11
14000	63.40	107.60	93.71	64.08	106.77	103.90	109.39	77.25
14500	63.70	115.12	96.82	63.89	113.62	113.98	110.85	75.52
15000	63.48	105.04	94.36	63.91	98.94	97.20	108.93	74.06
15500	62.74	101.99	95.90	63.75	104.21	114.81	107.25	72.36
16000	62.01	108.03	97.17	63.01	101.61	101.83	108.30	71.31
16500	61.59	103.47	94.11	61.34	100.93	105.02	112.72	70.26
17000	60.97	96.88	96.83	61.46	103.09	104.13	106.88	69.48
17250	60.47	101.99	95.47	61.51	105.14	99.70	107.89	69.85
17500	59.77	104.14	96.82	61.30	102.41	101.59	121.06	68.31
17750	59.00	99.82	95.15	61.51	103.50	101.70	101.10	67.56
18000	58.33	98.92	96.54	61.55	103.19	101.20	102.05	67.44
18250	57.63	101.60	93.15	62.17	95.75	99.50	112.14	70.52
18500	56.99	101.81	95.79	61.05	98.09	100.14	104.73	68.88
18750	56.41	100.64	96.65	60.30	95.71	96.00	111.65	67.47
19000	55.98	101.82	92.79	60.85	97.54	102.54	107.64	68.78
19250	55.64	102.46	93.14	61.00	95.93	96.83	105.69	69.57
19500	55.43	95.59	94.21	60.51	99.68	94.25	111.48	69.34
19750	55.20	95.95	94.76	59.55	97.66	98.33	109.38	68.93
20000	54.95	96.99	95.91	58.79	94.37	94.57	100.86	67.92

Notes

- A. Performance and quality attributes and conditions not expressly stated in this specification document are intended to be excluded and do not form a part of this specification document.
- B. Electrical specifications and performance data contained in this specification document are based on Mini-Circuits' applicable established test performance criteria and measurement instructions.
- C. The parts covered by this specification document are subject to Mini-Circuits' standard limited warranty and terms and conditions (collectively, "Standard Terms"); Purchasers of this part are entitled to the rights and benefits contained therein. For a full statement of the Standard Terms and the exclusive rights and remedies thereunder, please visit Mini-Circuits' website at www.minicircuits.com/MCLStore/terms.jsp

