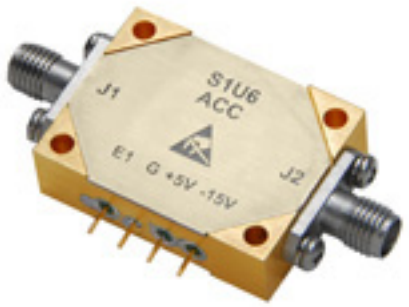
SINGLE-POLE, SINGLE-THROW SWITCHES

The S1 series of single pole, single throw PIN diode switches span the frequency range of 10MHz to 18GHz and are available with absorptive or reflective inputs. The switches are available in a wide variety of standard frequency ranges from cost-effective narrowband to high-performance broadband. Each switch incorporates a TTL-compatible driver for convenient system integration and operates from +5V and -12V to -18V DC power supplies. All switches incorporate DC blocks at the RF ports. Standard screened switches incorporate epoxy sealed lids and undergo a stringent yet cost effective screening cycle. The switches are also available with hermetic seal and high-rel screening for military and aerospace applications.



Applications:

- EW Systems
- Communications Systems
- Modulators
- Test Equipment
- Electronic Simulators

Frequency Range (GHz)	REFLECTIVE SWITCHES Part Number	Insertion Loss (dB max)	VSWR (max)	Isolation (dB min)	ABSORPTIVE SWITCHES Part Number	Insertion Loss (dB max)	VSWR (max)	Isolation (dB min)	Switching Speed (nsec max)	MAX RF (W CW)
0.01 – 0.1	S1H1R	0.8	1.5	75	S1H1	0.9	1.5	80	250	1
0.01 – 0.5	S1H2R	0.9	1.5	75	S1H2	1.0	1.5	80	250	1
0.01 – 1	S1H3R	1.2	1.5	75	S1H3	1.3	1.5	80	250	1
0.01 – 2	S1H4R	1.8	1.6	75	S1H4	1.9	1.6	80	250	1
0.01 – 4	S1H5R	2.5	1.8	75	S1H5	2.6	1.8	80	250	1
0.1 – 0.5	S1V1R	0.9	1.5	80	S1V1	1.0	1.5	80	250	1
0.1 – 1	S1V2R	1.2	1.5	80	S1V2	1.3	1.5	80	250	1
0.1 – 2	S1V3R	1.8	1.6	80	S1V3	1.9	1.6	80	250	1
0.1 – 4	S1V4R	2.5	1.8	75	S1V4	2.8	1.8	80	250	1
0.1 – 8	S1V5R	3.2	2.0	70	S1V5	3.3	2.0	75	250	1
0.1 – 10	S1V6R	3.5	2.0	70	S1V6	3.6	2.0	75	250	1
0.5 – 1	S1U1R	1.0	1.5	80	S1U1	1.1	1.5	80	100	1
0.5 – 2	S1U2R	1.4	1.6	80	S1U2	1.5	1.6	80	100	1
0.5 – 4	S1U3R	2.0	1.8	75	S1U3	2.1	1.8	80	100	1
0.5 – 6	S1U4R	2.2	1.9	70	S1U4	2.3	2.0	75	100	1
0.5 – 12	S1U5R	2.5	2.0	65	S1U5	2.7	2.0	70	100	1
0.5 – 18	S1U6R	2.8	2.0	60	S1U6	3.0	1.9	65	100	0.5
1 – 2	S1L1R	0.8	1.5	80	S1L1	0.9	1.5	85	100	1
1 – 4	S1L2R	1.1	1.6	80	S1L2	1.2	1.6	85	100	1
1 – 8	S1L3R	1.8	1.8	75	S1L3	1.9	1.8	80	100	1
1 – 10	S1L4R	1.9	2.0	70	S1L4	2.0	2.0	75	100	1
1 – 12	S1L5R	2.0	2.0	65	S1L5	2.2	2.0	70	100	1
1 – 14	S1L6R	2.2	2.0	65	S1L6	2.4	2.0	70	100	0.5
1 – 18	S1L7R	2.7	2.0	60	S1L7	3.0	2.0	65	100	0.5
2 – 4	S1S1R	1.0	1.6	70	S1S1	1.1	1.6	75	100	1
2 – 6	S1S2R	1.3	1.7	70	S1S2	1.4	1.7	75	100	1
2 – 8	S1S3R	1.7	1.8	70	S1S3	1.8	1.8	75	100	1
2 – 10	S1S4R	1.8	1.8	70	S1S4	2.0	1.8	70	100	1
2 – 12	S1S5R	2.0	1.9	65	S1S5	2.2	1.9	70	100	1
2 – 16	S1S6R	2.5	2.0	60	S1S6	2.7	2.0	65	100	0.5
2 – 18	S1S7R	2.7	2.0	60	S1S7	3.0	2.0	65	100	0.5
4 – 8	S1C1R	1.1	1.6	70	S1C1	1.8	1.6	75	100	1
4 – 10	S1C2R	1.2	1.7	70	S1C2	2.0	1.7	70	100	1
4 – 12	S1C3R	1.5	1.8	65	S1C3	2.2	1.8	70	100	1
4 – 16	S1C4R	1.9	2.0	60	S1C4	2.7	2.0	65	100	0.5
4 – 18	S1C5R	2.0	2.0	60	S1C5	2.8	2.0	65	100	0.5
6 – 10	S1C6R	1.2	1.7	70	S1C6	2.0	1.7	70	100	1
6 – 12	S1C7R	1.5	1.8	65	S1C7	2.2	1.8	70	100	1
6 – 18	S1C8R	2.0	2.0	60	S1C8	2.8	2.0	65	100	0.5
8 – 10	S1X1R	1.2	1.7	70	S1X1	1.9	1.7	70	100	1
8 – 12	S1X2R	1.5	1.8	65	S1X2	2.2	1.8	70	100	1
8 – 18	S1X3R	2.0	2.0	60	S1X3	2.8	2.0	65	100	0.5
10 – 18	S1K1R	2.0	2.0	60	S1K1	2.8	2.0	65	100	0.5
12 – 18	S1K2R	2.0	2.0	60	S1K2	2.8	2.0	65	100	0.5

611 Industrial Way West, Eatontown, NJ 07724 tel: 732-460-0212 fax: 732-460-0214 sales@advanced-control.com www.advanced-control.com

NOTES:

DC Bias:	+5V +/-0.5V @ 50mA max
(Standard)	-15V +/-3V @ 50mA max
DC Bias:	+5V +/-0.5V @ 60mA max
(-5 option)	-5V +/-0.5V @ 60mA max
DC Bias:	+15V +/-3V @ 50mA max
(-12 option)	-15V +/-3V @ 50mA max
Control:	TTL 0 = Low Loss
	TTL 1 = Isolation

Absorptive switch: 50Ω terminations at both RF ports (in isolation mode).

Switching speed is defined as 50%TTL to 90% (t-on) and 50%TTL to 10%RF (t-off).

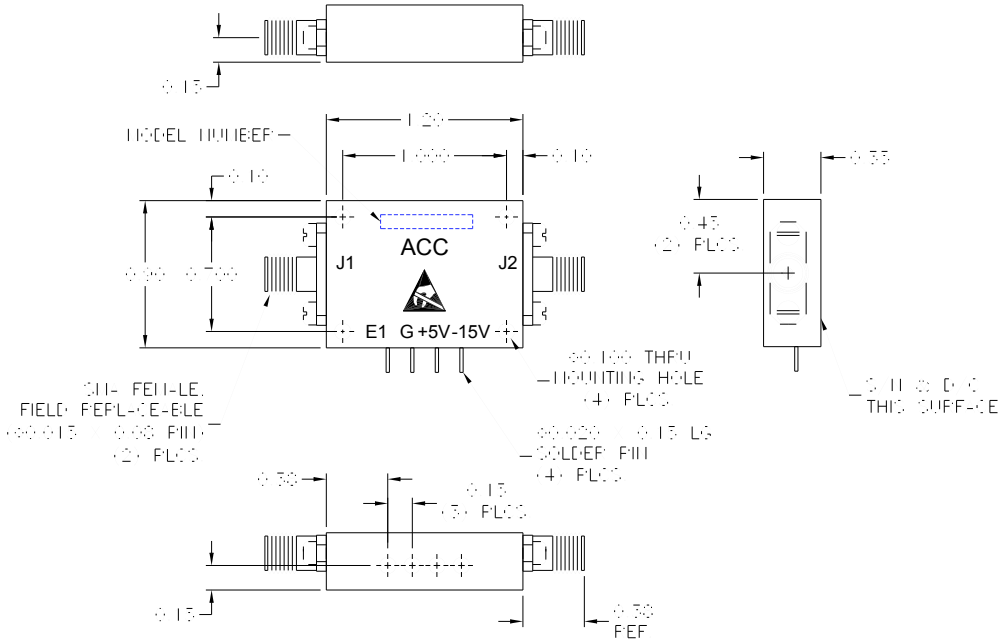
MECHANICAL SPECIFICATIONS:
Case Style: S1 Outline
Finish: Gold Plate per MIL-G-45204, Chem film per MIL-C-5541
Bias & Control Pins: ø0.02" x 0.15" long
Weight: 20g max
Mounting: ø0.10" through holes (4) places

ENVIRONMENTAL SPECIFICATIONS:
MIL-E-5400, MIL-STD-202, MIL-E-16400
Operating Temp: -55°C to +85°C
Storage Temp: -65°C to +125°C
Humidity: MIL-STD-202F, M103, Cond B
Shock: MIL-STD-202F, M213, Cond B
Altitude: MIL-STD-202F, M105, Cond B
Vibration : MIL-STD-202F, M204, Cond B
Thermal Shock: MIL-STD-202F, M107, Cond A
Temperature Cycle: MIL-STD-202F, M105C, Cond D

SCREENING:
Internal Visual per MIL-STD-883, Method 2017
Temperature Cycle: -65°C to +100°C, 10 cycles

Hermetically-sealed switches are fine and gross leak checked per MIL-STD-883, Method 1014.

Optional High-Rel screening available upon request.
Contact the factory to discuss your screening requirements.



OUTLINE CASE STYLE S1

PART NUMBER ORDERING INFORMATION:

- Add "-RC" suffix: RoHS-compliant
- Add "-5" suffix: +/-5V DC supplies
- Add "-5-RC" suffix: +/-5V DC supplies, RoHS-compliant
- Add "-12" suffix: +/-12V to 18V DC supplies
- Add "-12-RC" suffix: +/-12V to 18V DC supplies, RoHS-compliant
- Add "-H" suffix: Hermetic seal (does not apply to RoHS-compliant models)

CUSTOM OPTIONS – CONTACT FACTORY:

- Gray epoxy paint per MIL-C-22750
- Video transient suppression
- GPO connectors
- ECL logic input
- Phase and amplitude matching
- Other frequency ranges available from 1MHz to 26GHz
- Reversed logic
- Available without SMA connectors for drop-in applications
- High rel screening

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