

# S6K1/S6K1R PIN Diode Switch

Single Pole, Six Throw  
Absorptive/Reflective

**COBHAM**

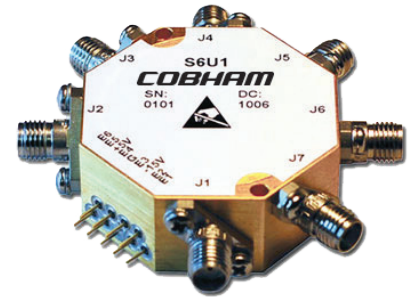
Data Sheet Revision Date: 12/11/2015

The most important thing we build is trust

## DESCRIPTION:

The S6 series of single pole, six 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.

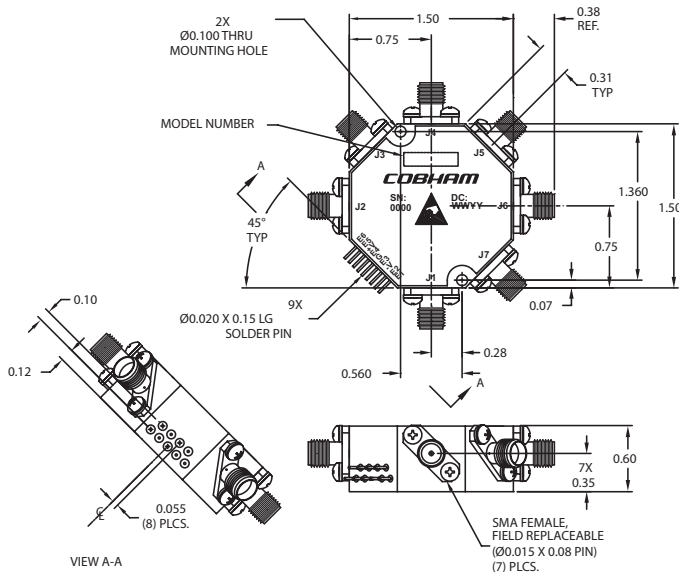


## SPECIFICATIONS:

Parameter	Absorptive	Reflective	Unit of Measure
Frequency Range	10 – 18	10 – 18	GHz
Insertion Loss (max)	3.9	3.6	dB
VSWR (max) (50 ohms)	2.0	2.0	ratio
Isolation (min)	65	60	dB
Switching Speed (max)	100	100	nsec
CW RF Power, Survival	30	30	dBm
P1dB*	27	27	dBm

\*Standard bias configuration

## OUTLINE DRAWING:



OUTLINE CASE STYLE S6

## FEATURES:

- TTL-compatible drivers for convenient system integration
- Operates on +5V or +15V and -5V or -15V DC power supplies (see ordering information)
- DC blocks at all RF ports
- Ruggedized construction
- Hermetic versions available
- All parts receive internal visual (per MIL-STD-883) and temp cycle (-65 °C to +100 °C, 10 cycles)
- Hi-Rel screening available upon request
- 30-day lead time on some configurations (contact factory for details)

# S6K1/S6K1R PIN Diode Switch

Single Pole, Six Throw, Absorptive/Reflective



## NOTES:

DC Bias: (Standard)	+5 V +/- 0.5 V @ 240 mA max -15 V +/- 3 V @ 50 mA max
DC Bias: (-5 option)	+5 V +/- 0.5 V @ 300 mA max -5 V +/- 0.5 V @ 60 mA max
DC Bias: (-12 option)	+15 V +/- 3 V @ 240 mA max -15 V +/- 3 V @ 50 mA max
Control:	TTL 0 = Low Loss E1 controls J2 – J1 TTL 1 = Isolation E2 controls J3 – J1 E3 controls J4 – J1 E4 controls J5 – J1 E5 controls J6 – J1 E6 controls J7 – J1

Three Bit Control: (-3 option)	E3	E2	E1	Low Loss Path
	0	0	0	J2 – J1
	0	0	1	J3 – J1
	0	1	0	J4 – J1
	0	1	1	J5 – J1
	1	0	0	J6 – J1
	1	0	1	J7 – J1
	1	1	0	ALL OFF
	1	1	1	ALL OFF

Absorptive Switch: 50 ohm termination present at J2, J3, J4, J5, J6 and J7 (in isolation mode).

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

Finish: Gold Plate per MIL-G-45204  
Chem film per MIL-C-5541

Weight: 65g (max)

## PART NUMBER ORDERING INFORMATION:

Add "-RC" suffix: RoHS-compliant  
Add "-H" suffix: Hermetic seal  
Add "-5" suffix: +/-5 V DC supplies  
Add "-5-RC" suffix: +/-5 V DC supplies, RoHS-compliant  
Add "-5-H" suffix: +/-5 V DC supplies, Hermetic seal  
Add "-12" suffix: +/-15 V DC supplies  
Add "-12-RC" suffix: +/-15 V DC supplies, RoHS-compliant  
Add "-12-H" suffix: +/-15 V DC supplies, Hermetic seal  
Add "-3" suffix: Three bit logic control  
Add "-3-RC" suffix: Three bit logic control, RoHS-compliant

## 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

\* Compliant by design, verification optional

Add "-3-H" suffix: Three bit logic control, Hermetic seal  
Add "-3-5" suffix: Three bit logic control, +/-5 V DC supplies  
Add "-3-5-RC" suffix: Three bit logic control, +/-5 V DC supplies, RoHS-compliant  
Add "-3-5-H" suffix: Three bit logic control, +/-5 V DC supplies, Hermetic seal  
Add "-3-12" suffix: Three bit logic control, +/-15 V DC supplies  
Add "-3-12-RC" suffix: Three bit logic control, +/-15 V DC supplies, RoHS-compliant  
Add "-3-12-H" suffix: Three bit logic control, +/-15 V DC supplies, Hermetic seal

## ISO 9001:2008 and AS9100 certified

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