CCR-39V/CR-39V Series

DC-67 GHz SPnT Latching Coaxial Switch

Highlights:

- SPnT Coax Switch
- 1.85 mm Connectors
- RoHS Compliant
- DC to 67 GHz

Series Identification:

- CCR-39V: Commercial
  - DC TO 67 GHz
  - –25°C to 65°C
- CR-39V: Elite
  - DC TO 67 GHz
  - –55°C to 85°C

TYPICAL RF PERFORMANCE CHARACTERISTICS

Frequency (GHz)	DC - 6	6 - 12.4	12.4 - 18	18 - 26.5	26.5 - 40	40 - 50	50 - 65	65 - 67
Insertion loss (max)	0.3 dB	0.2 dB	0.4 dB	0.5 dB	0.6 dB	1.2 dB	1.4 dB	1.7 dB
Isolation (min)	70 dB	60 dB	60 dB	55 dB	50 dB	50 dB	50 dB	50 dB
VSWR (max)	1.30:1	1.40:1	1.50:1	1.70:1	1.90:1	2.20:1	2.20:1	2.20:1

RF plots on page 4

GENERAL SPECIFICATIONS

ELECTRICAL SPECIFICATIONS						
Actuation Type			Break Before Make			
Frequency Range			DC - 67 GHz			
Characteristic Impedance			50Ω			
Switching Time			20 ms max			
Actuation Voltage (VDC)[1]			12	15	24	28
Actuation Current	**SP4T**	**Set (mA)**	280	250	150	110
		Reset (mA)	1680	1500	900	440
	SP6T	**Set (mA)**	280	250	150	110
		Reset (mA)	1680	1500	900	660
TTL/ Decoder Input[2]	**High Level (Logic 1)**		2.4 ~ 5.5 V		80 µA max at 2.4 V	
	Low Level (Logic 0)		0.0 ~ 0.7 V		3.2 mA max at 0.7 V	
Indicator Contact Rating[3]			30 VDC, 50mA max			
Magnetic Sensitivity			5 Gauss, 0.5 inch max			
ENVIRONMENTAL AND PHYSICAL SPECIFICATIONS						
Storage Temperature			–55°C to 90°C			
Operating Temperature	**CCR-39V**		–25°C to 65°C			
	CR-39V		–55°C to 85°C			
Vibration[4], 10 ~ 2000 Hz, 300 s MIL-STD-202 Method 204, Condition C			10G peak			
Shock, Half-Sine Pulse MIL-STD-202 Method 213, Condition D			500G peak			
Moisture Resistance[5]			95% RH Non-condensing			
Actuation Life			5,000,000 cycles min.			
RF Performance Expected to Degrade After			2,000,000 cycles min.			
Connector Type			1.85mm (V) Female			
Weight			6.35 oz. max (180g)			

1. Actuation voltage @ 20 °C
2. For switches with TTL driver or decoder
3. When indicator option is selected
4. Non-operating
5. When moisture seal option is selected

For additional options modifications please contact the factory

PART NUMBER SCHEME

CCR-39 V _ _ _ _

Series
CCR-39: Commercial
CR-39: Elite

Connector
V: 1.85mm (V) Female

Switch Type and Voltage
6: 28 VDC Latching
7: 15 VDC Latching
8: 12 VDC Latching
9: 24 VDC Latching

Configuration
4: SP4T
6: SP6T

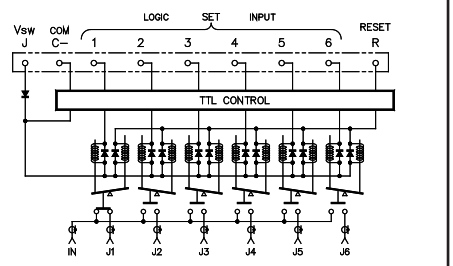
Actuator Type
0: Standard Contacts

Options
D[1]: Transient Suppression Diodes
T: TTL Driver + Diodes
TD: TTL with Decoder + Diodes
R: Positive (+) Common
M: Moisture Seal
S: 9 Pin D-Sub Connector (Male)

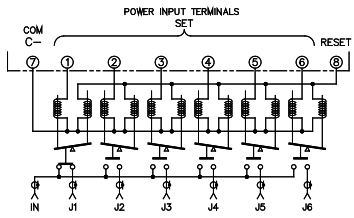
1. Transient suppresion diodes already included in TTL option (T) and Decoder option (TD)

ELECTRICAL SCHEMATIC

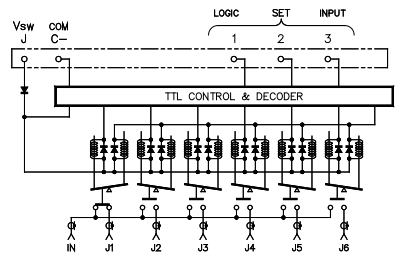
TTL



Standard



TTL + DECODER



D-SUB PINOUT (SEE MECHANICAL OUTLINE FOR PIN ASSIGNMENT)

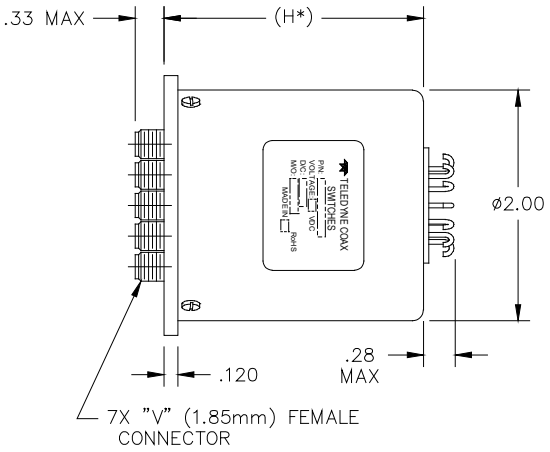
TYPE	PIN ID								
	1	2	3	4	5	6	7	8	9
BASIC	J1 (1)	J2 (2)	J3 (3)	J4 (4)	J5 (5)	J6 (6)	COM (C)	RESET (R)	
TTL	J1 (1)	J2 (2)	J3 (3)	J4 (4)	J5 (5)	J6 (6)	COM (C)	RESET (R)	VSW (J)
TTL + DECODER	LOGIC 1	LOGIC 2	LOGIC 3				COM (C)		VSW (J)

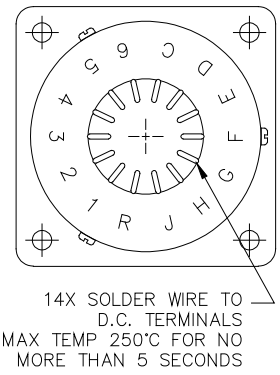
TRUTH TABLE (FOR TLL + DECODER OPTION)

LOGIC INPUT			RF PATH						
1	2	3	J1	J2	J3	J4	J5	J6	RESET
0	0	0	ON	OFF	OFF	OFF	OFF	OFF	OFF
1	0	0	OFF	ON	OFF	OFF	OFF	OFF	OFF
0	1	0	OFF	OFF	ON	OFF	OFF	OFF	OFF
1	1	0	OFF	OFF	OFF	ON	OFF	OFF	OFF
0	0	1	OFF	OFF	OFF	OFF	ON	OFF	OFF
1	0	1	OFF	OFF	OFF	OFF	OFF	ON	OFF
0	1	1	RESET						
1	1	1	COIL OFF						

MECHANICAL OUTLINE DRAWING

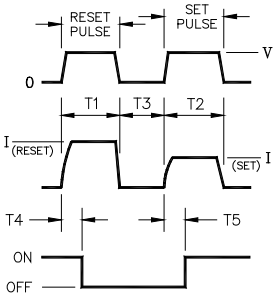
Standard Model



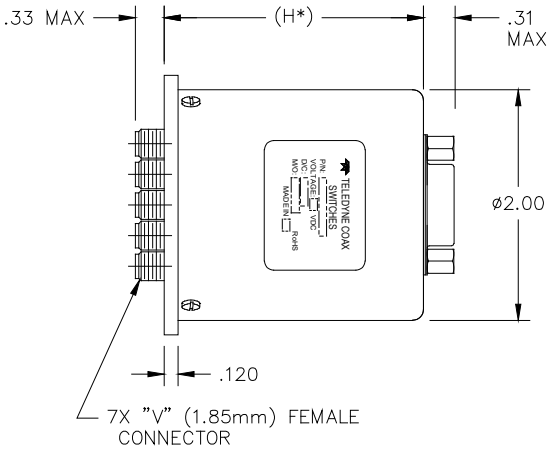


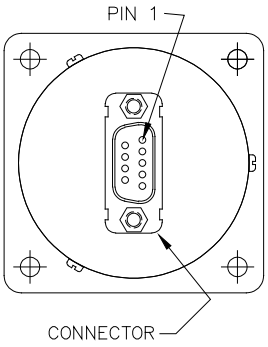
ACTUATION CHARACTERISTICS:

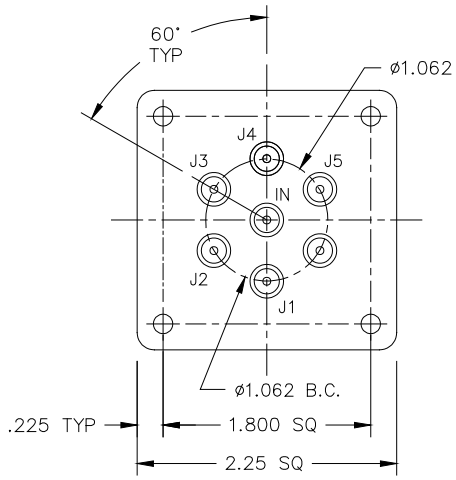
- REQUIRES TWO (2) SEQUENTIAL PULSES (RESET & SET)
- T1 & T2 = 30 mSEC MIN
- T3 = 10 mSEC MIN
- T4 & T5 = 20 mSEC MAX

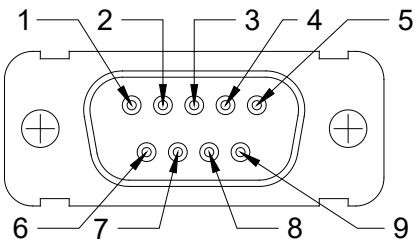


D-Sub Model





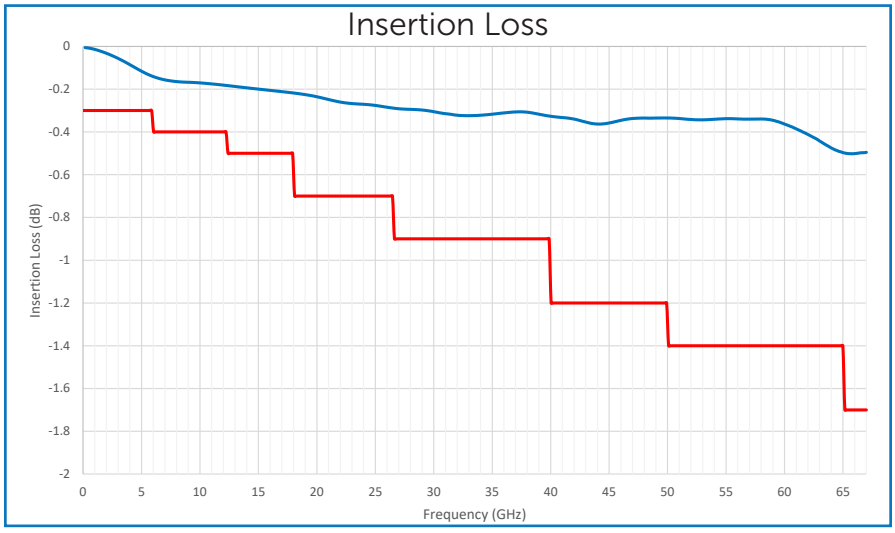


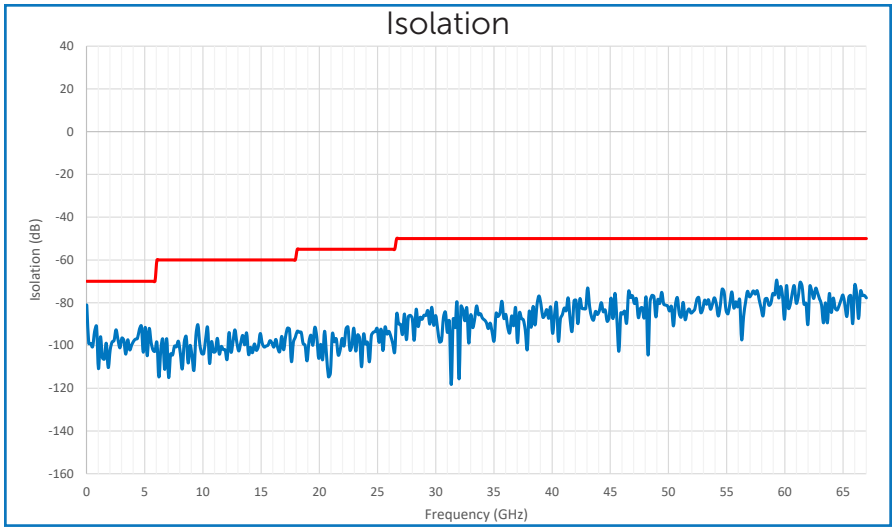


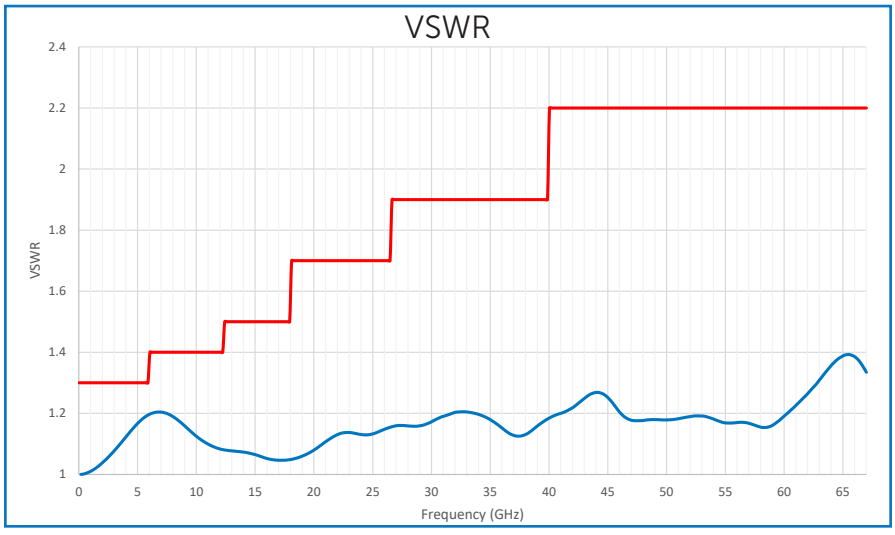
*Height (H) will change based on options selected

H = 2.52 max for standard model & standard model with D-Sub Connector
H = 3.20 max with TTL & TLL + Decoder
H = 3.20 max with TTL & TTL + Decoder with D-Sub Connector
- Contact factory for additional model outlines

RF PERFORMANCE CHARTS





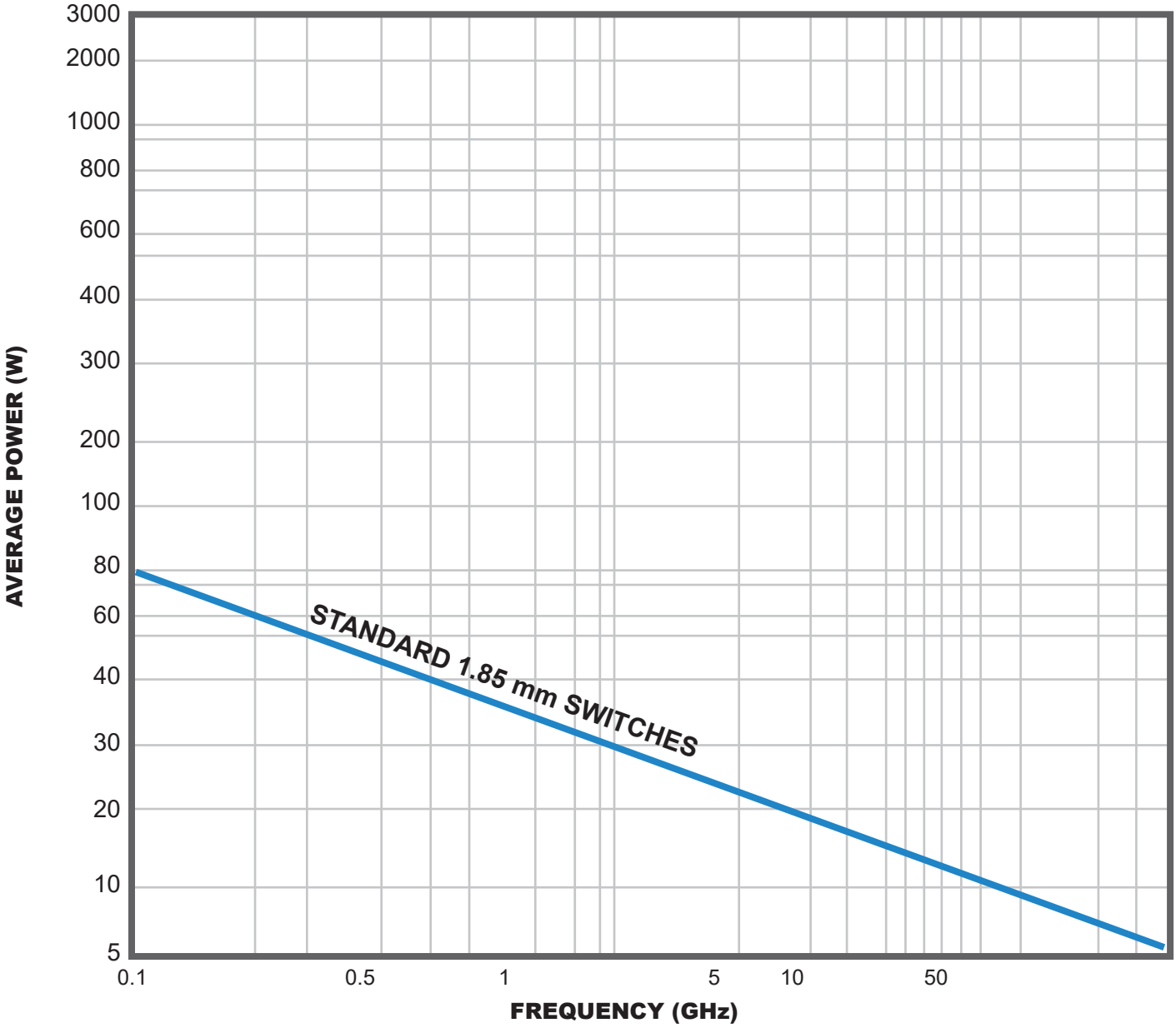


TYPICAL

MAXIMUM TEST LIMIT

RF POWER HANDLING

Power Handling vs. Frequency



Estimates based on the following reference conditions:
- Ambient temperature of 40°C or less
- Sea level operation
- Load VSWR of 1.20:1 maximum
- No high-power (hot) switching

Please contact Teledyne Coax Switches for derating factors when applications do not meet the foregoing reference conditions.