



Series		RF522	CCR-33M	CCR-33	CCR-33
<b>Configuration</b>		DPDT	SPDT	SPDT	SPDT
<b>Switch Function</b>		Latching	Failsafe & Latching	Failsafe & Latching	Failsafe & Latching
<b>Frequency</b>		DC to 10 GHz	DC to 3 GHz	DC to 18 GHz DC to 22 GHz	DC to 18 GHz DC to 22 GHz
<b>Coil Voltage</b>		5, 12	12, 15, 28	12, 15, 28	12, 15, 28
<b>Connector</b>		SMT	SMB	SMA	SMA
<b>Temperature Range</b>	<b>Commercial Model</b>	-55°C to +85°C	-25°C to +65°C	-25°C to +65°C	-25°C to +65°C
	<b>Elite Model</b>	—	—	-54°C to +85°C	-54°C to +85°C
<b>Special Feature</b>		Miniature SMT Lead Free	75-Ohm Impedance	Compact package	50-Ohm Termination
<b>Typical Contact Life</b>		1,000,000 cycles	5,000,000 cycles	5,000,000 cycles	5,000,000 cycles
<b>Typical RF Performance</b>	<b>VSWR (max)</b>	See Figure 13	DC-1 GHz to 1.20:1 1-3 GHz to 1.30:1 See Figure 14	DC-6 GHz to 1.25:1 6-12 GHz to 1.40:1 12-18 GHz to 1.50:1 See Figure 15	DC-6 GHz to 1.25:1 6-12 GHz to 1.40:1 12-18 GHz to 1.50:1 See Figure 15
	<b>Insertion Loss (max)</b>	See Figure 13	DC-1 GHz to 0.20 dB 1-3 GHz to 0.30 dB See Figure 14	DC-6 GHz to 0.20 dB 6-12 GHz to 0.40 dB 12-18 GHz to 0.50 dB See Figure 15	DC-6 GHz to 0.20 dB 6-12 GHz to 0.40 dB 12-18 GHz to 0.50 dB See Figure 15
	<b>Isolation (min)</b>	See Figure 13	DC-1 GHz to 80 dB 1-3 GHz to 70 dB See Figure 14	DC-6 GHz to 70.0 dB 6-12 GHz to 60.0 dB 12-18 GHz to 60.0 dB See Figure 15	DC-6 GHz to 70.0 dB 6-12 GHz to 60.0 dB 12-18 GHz to 60.0 dB See Figure 15
<b>Options</b>	<b>Self Cutoff (Latching Only)</b>	—	✓	✓	✓
	<b>Indicator Contacts</b>	—	✓	✓	✓
	<b>Self Cutoff and Indicator Contacts (Latching Only)</b>	—	✓	✓	✓
	<b>TTL Interface</b>	—	✓	✓	✓
	<b>TTL Interface with Decoder</b>	—	—	—	—
	<b>Moisture Seal</b>	—	✓	✓	✓
	<b>Narrow Body</b>	—	—	✓	—
<b>Typical Mechanical Outline</b>		.709 x .709 x .349 in. 18 x 18 x 8.86 mm See Figure 1	1.50 x 1.92 x .52 in. 38.1 x 48.8 x 13.2 mm See Figure 2	1.50 x 1.82 x .52 in. 38.1 x 46.2 x 13.2 mm See Figure 3	2.06 x 2.27 x .56 in. 52.3 x 57.7 x 14.2 mm See Figure 4
<b>Shock</b>		Direction of Contact/Drive Motion: 20 g's, 4 msec, half-sine Transverse Directions: 40 g's, 6 msec, half-sine	MIL-STD-202 Method 213, Condition D (500G Non Operating)	MIL-STD-202 Method 213, Condition D (500G Non Operating)	MIL-STD-202 Method 213, Condition D (500G Non Operating)
<b>Vibration</b>		Lesser of 0.06" double-amplitude or 10 g's, 10-2000 Hz	MIL-STD-202 Method 214, Condition D (10G RMS Non Operating)	MIL-STD-202 Method 214, Condition D (10G RMS Non Operating)	MIL-STD-202 Method 214, Condition D (10G RMS Non Operating)

## Model Number

This guide shows the model numbers for Teledyne Relays switches. For technical support or custom switches for specific applications, call (800) 284-7007.

XXX-XX    X    X    X    X - X    X    X - X  
 ①          ②    ③    ④    ⑤    ⑥    ⑦    ⑧    ⑨  
                                 Multi-throw  
                                 Only

Example: CCR-33S1O-T (Commercial SPDT, S=SMA, 28 Vdc, Failsafe, TTL)

①	<b>Switch Model Series Type and Description</b>
	See tables on pages 1-5 for series name.
②	<b>Connector Type</b>
M	Mini SMB
N	N Female
S	SMA Female
T	TCN Female
③	<b>Actuator Voltage</b>
1	28 Vdc – Failsafe (Normally Open if single-pole multi-throw)
2	15 Vdc – Failsafe (Normally Open if single-pole multi-throw)
3	12 Vdc – Failsafe (Normally Open if single-pole multi-throw)
6	28 Vdc – Latching*
7	15 Vdc – Latching*
8	12 Vdc – Latching*
④	<b>Number Positions for Multi-throw</b>
3-8	Indicates number of positions on multi-throw switches (skip this number if not single-pole multi-throw)
⑤	<b>Actuator Type</b>
O	No cutoff or indicator contacts
C	Indicator contacts only
D	Self cutoff only
E	Self cutoff and indicator contacts
⑥	<b>TTL Driver*</b>
T	TTL driver with diodes
TD	Decoders and TTL driver with diodes
⑦	<b>Polarity</b>
R	Positive + Common
⑧	<b>Narrow Body</b>
N	SP2T switch only
⑨	<b>Custom Part Number</b>
	Assigned by Engineering

\* Polarity sensitive – contact factory  
 Note: Normally Open terminated switches are polarity sensitive

**RF522**

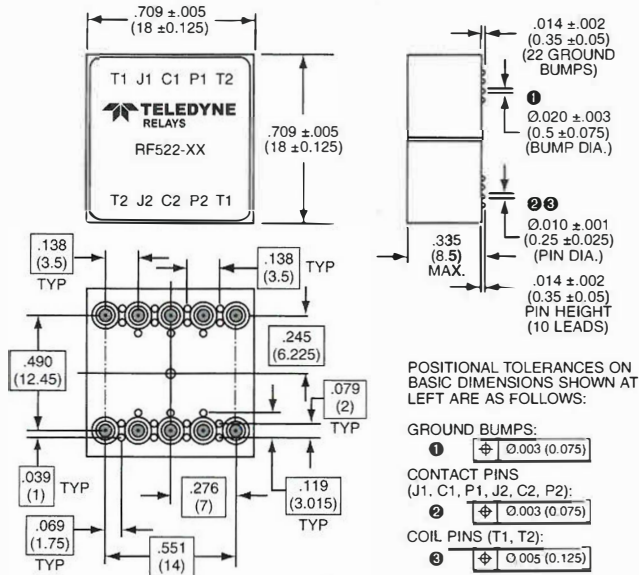


Figure 1

**CCR-33M**

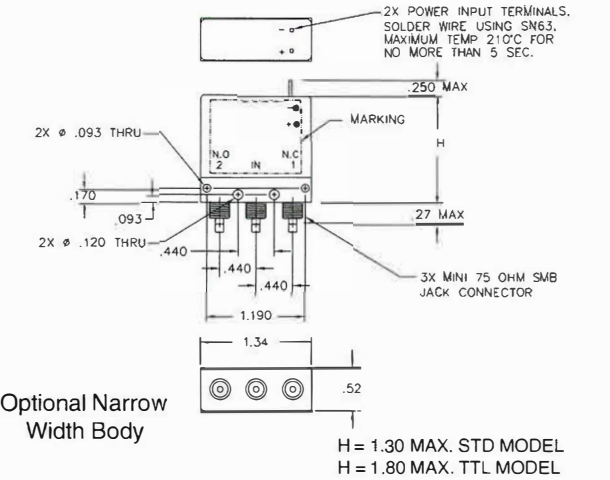
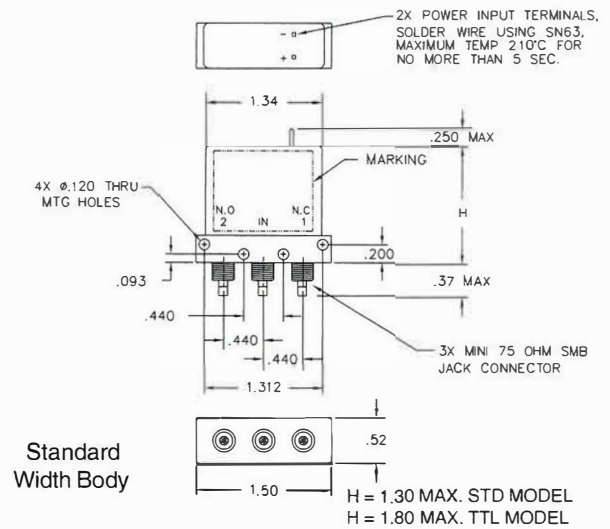


Figure 2

**CCR-33, CCR-53**

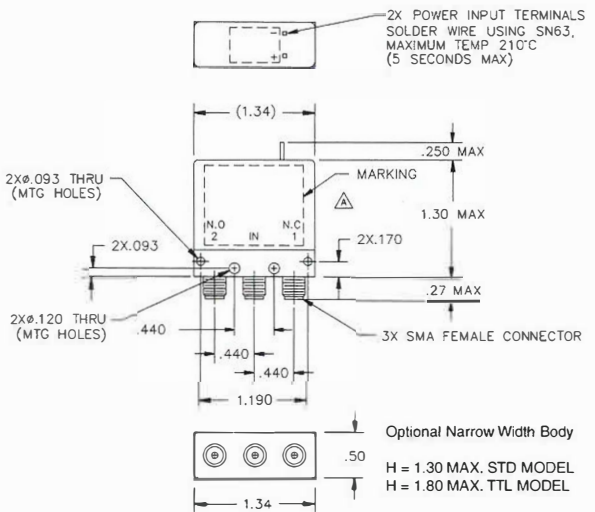
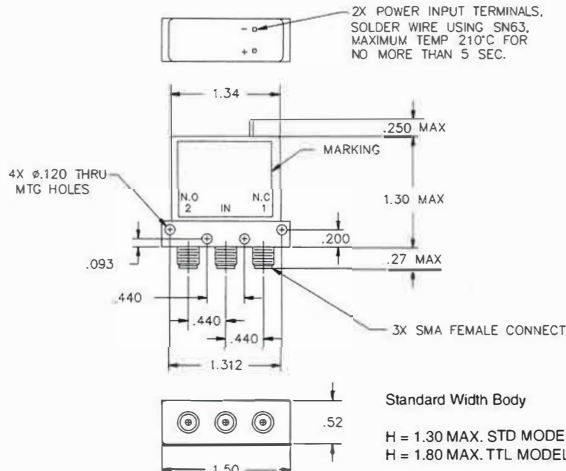


Figure 3

**CCRT-33, CCRT-53**

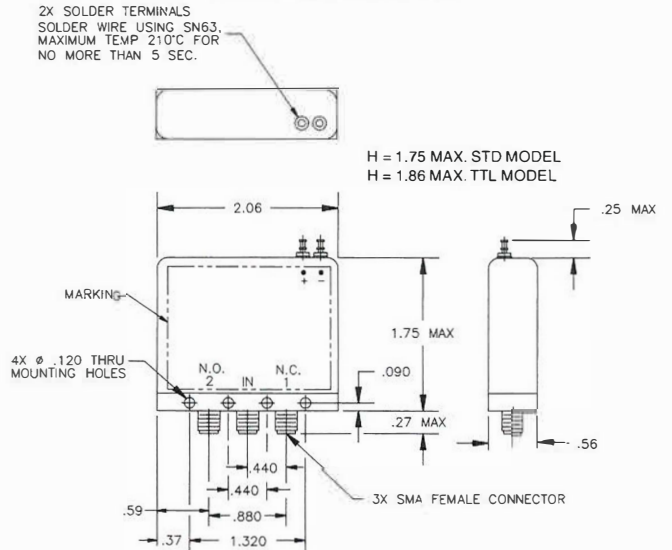


Figure 4

CCR-33M

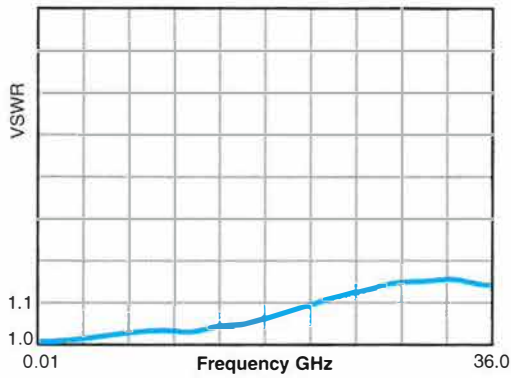
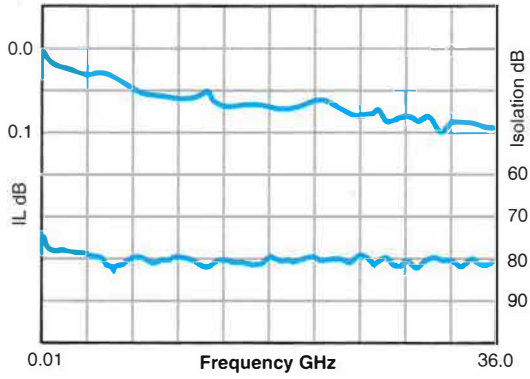


Figure 14

CCR-33, CCRT-33, CCRS-33

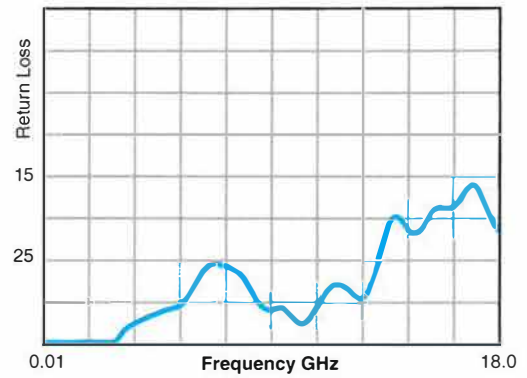
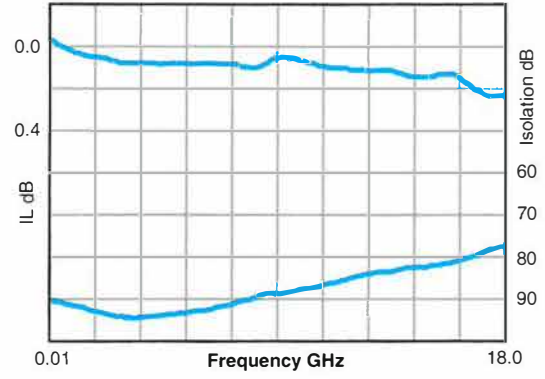


Figure 15

CCR-53, CCRT-53, CCRS-53

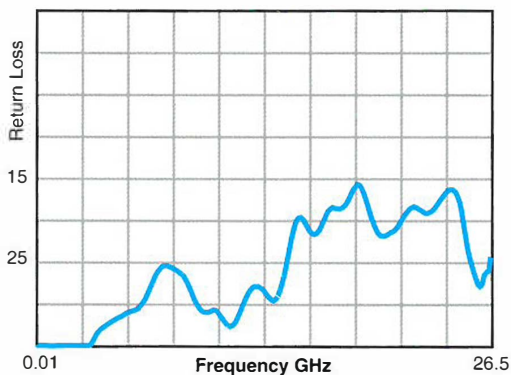
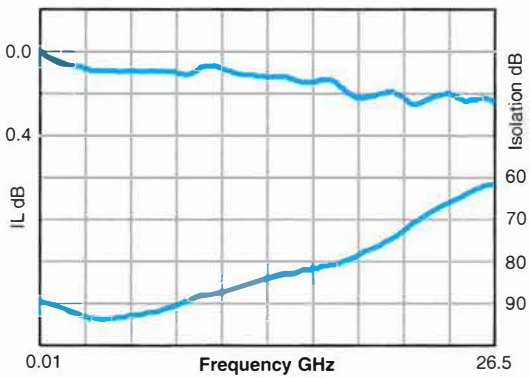


Figure 16

CCS-32, CCS-18

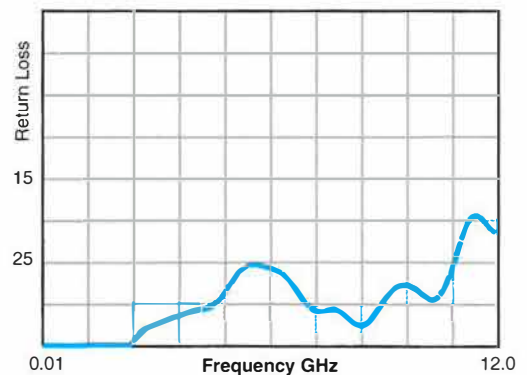
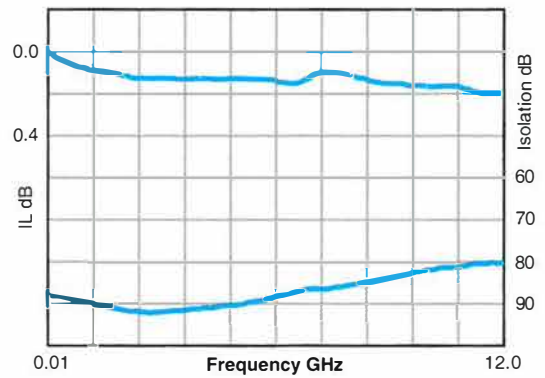


Figure 17