Double-Pole-Double-Throw (DPDT), Transfer

Failsafe - Standard - SMA - DC to 18 GHz

Features:

- Broadband: DC - 18 GHz
- Extended Life: 2 million cycles
- Excellent Repeatability
- Low Insertion Loss
- High Isolation

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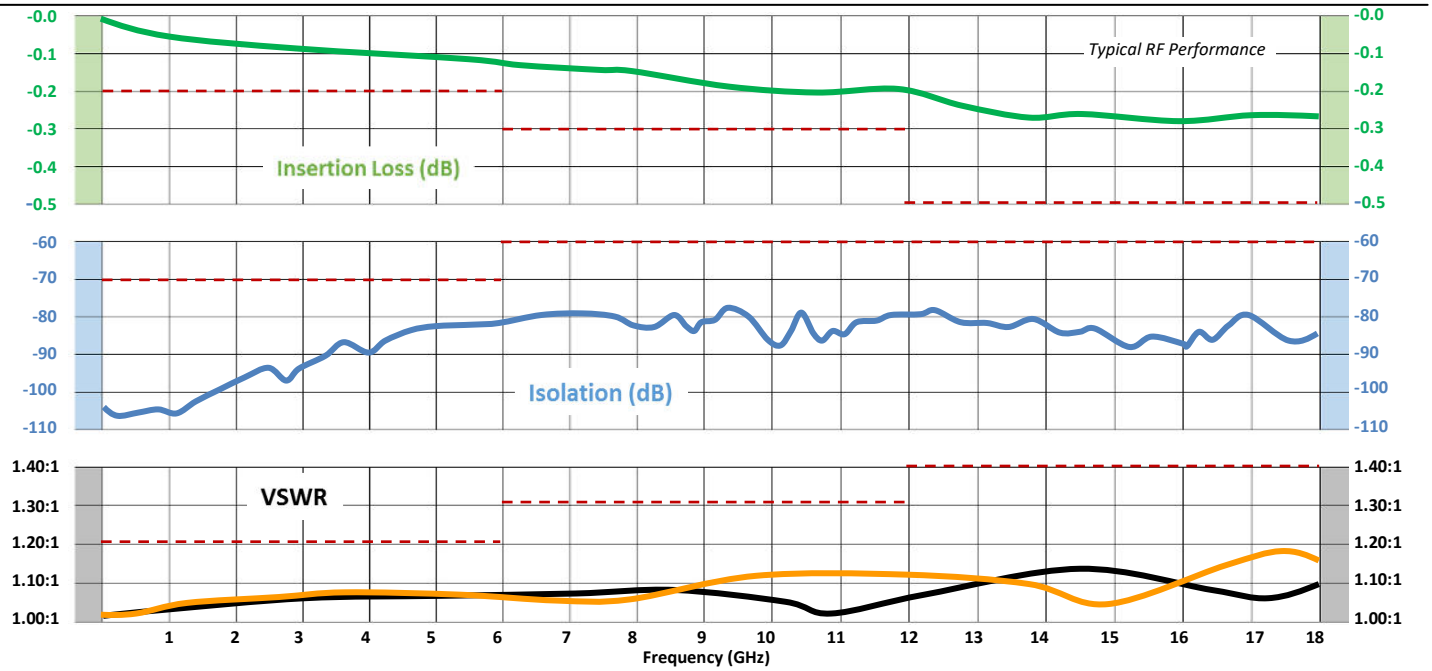
RF Specification:

Frequency, (GHz)	DC-6	6-12	12-18
Ins. Loss dB (max)	0.2	0.3	0.5
Isolation dB (min)	70	60	60
VSWR (max)	1.20:1	1.30:1	1.40:1
Switching Time	20 mS (max)		
Switching Action	Break-Before-Make		
Impedance	50 Ω		

Description:

Repeatability and low insertion loss makes these switches ideal for testing and end product applications. A wide selection of connectors and features are available to meet most requirements. Higher RF power handling designs available. **Applications:** test stations, stand-by switch, antenna diversity switch, bypass switch. **Markets:** defense, telecom, aerospace, enterprise, consumer and IoT.



Specifications	
Oper Temp	-25° C to +65° C
Oper Temp	-54° C to +85° C (M version)
Storage Temp	-55° C to +100° C
Humidity	Moisture resistant or immersion sealing available
Shock	MIL-STD-202 Method 213, Condition D, 500G (non oper)
Vibration	MIL-STD-202 Method 214, Condition D, 10G RMS (non oper)
Cycle Life	2M cycles (may vary based on selected options)

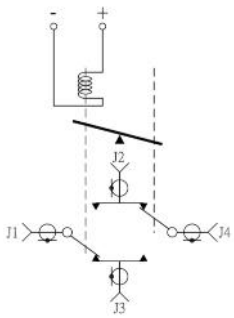
Voltages and Current				
Nominal Voltage, Vdc	12	15	24	28
Voltage Range, Vdc	11-13	14-16	22-26	24-30
Current (mA)*	390	320	220	200

** at nominal voltage and +20°C*

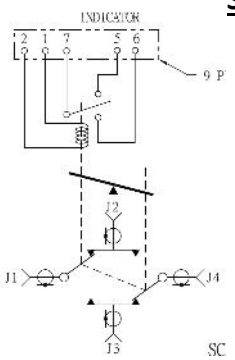
Popular Models	
TRAN-0A-18A	TRAN, SMA, Failsafe, DC-18GHz, 12VDC
TRAN-0A-18A-D	TRAN, SMA, Failsafe, DC-18GHz, 12VDC, TTL
TRAN-0A-18A-S9	TRAN, SMA, Failsafe, DC-18GHz, 12VDC, D-Sub
TRAN-0B-18A	TRAN, SMA, Failsafe, DC-18GHz, 12VDC, Indicator
TRAN-0B-18A-D	TRAN, SMA, Failsafe, DC-18GHz, 12VDC, Indicator, TTL

- See backside for a full list of available features and options
- Contact us for high power and custom designs

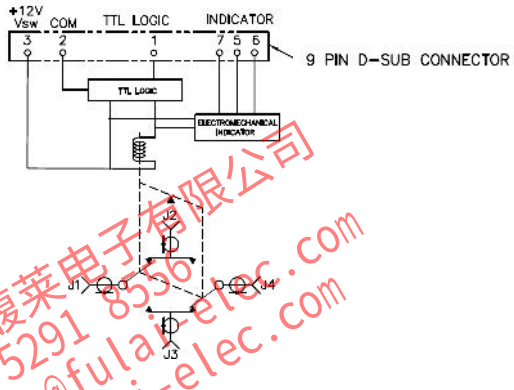
Schematics:



Standard



Indicators



TTL + Indicators

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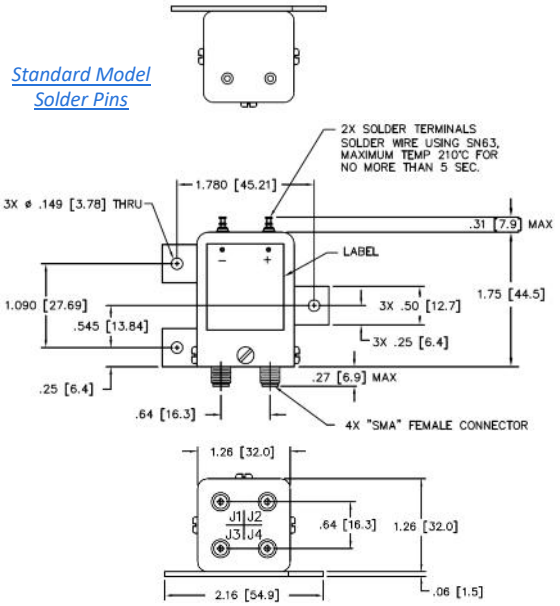
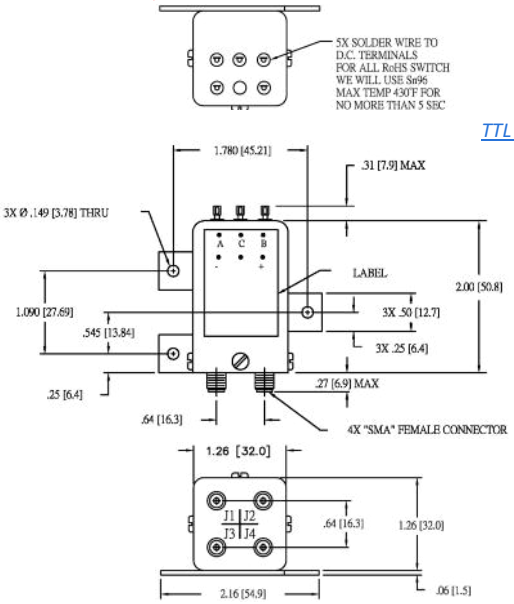
Outline:

Standard Model Solder Pins



TTL + Indicators with Solder Pins



Model Numbering System

Example: TRAN-0A-18A-D

(TRAN, SMA Connector, Failsafe without indicator, DC-18GHz, 12VDC, TTL Driver, Pin Terminal Control)

T R A N - 0 A - 1 8 A - D - __

Connector Type	
0: SMA	6: SMB
1: N	7: 7/16 DIN
2: TNC	8: BNC
3: RF PIN	9: K (2.92mm)
4: F (75Ω)	10: Mini DIN
5: SC	

Actuator Type
A : Failsafe without Indicator
B : Failsafe with Indicator

Frequency Range
03 : DC-3GHz
08 : DC-8GHz
12 : DC-12GHz
18 : DC-18GHz

Actuator Voltage	
A : 12VDC	E : 20VDC
B : 15VDC	F : 5VDC
C : 28VDC	G: 18VDC
D : 24VDC	H: 48VDC

Options
D : TTL Driver
E : Decoder
H : High Power
I : Suppression Diodes
Y : Moisture Seal
C: Custom

Control Options
Default : Pin Terminal Control
S9 : 9 Pins D-Sub
S15 : 15 Pins D-Sub

RoHS Compliant

ISO 9001

* Solder pins are standard for TRAN, no designation on model number needed

Double-Pole-Double-Throw (DPDT), Transfer

Failsafe - Standard - 2.92mm - DC to 30 GHz

EPX microwave inc.

Features:

- Broadband: DC - 30 GHz
- Extended Life: 2 million cycles
- Excellent Repeatability
- Low Insertion Loss
- High Isolation

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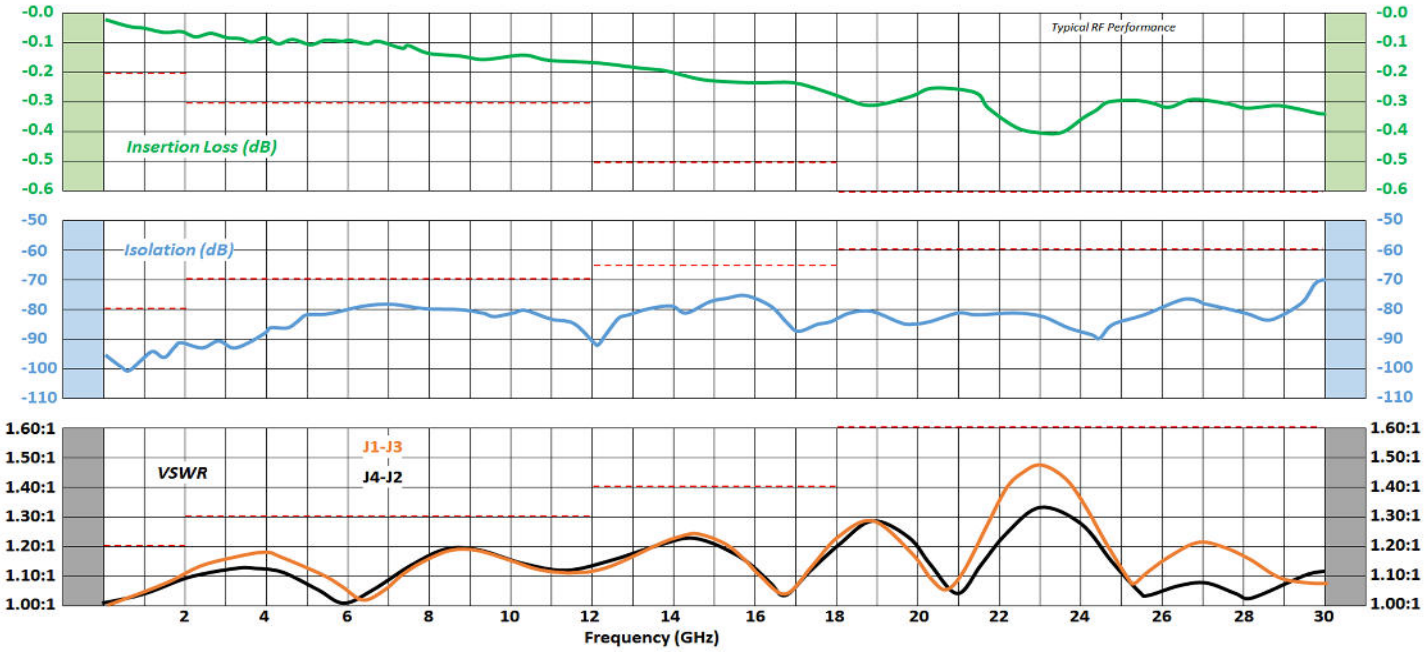
RF Specification:

Frequency, (GHz)	DC-6	6-12	12-18	18-30
Ins. Loss dB (max)	0.2	0.3	0.5	0.8
Isolation dB (min)	80	70	65	60
VSWR (max)	1.20:1	1.30:1	1.40:1	1.60:1
Switching Time	20 mS (max)			
Switching Action	Break-Before-Make			
Impedance	50 Ω			

Description:

Repeatability and low insertion loss makes these switches ideal for testing and end product applications. A wide selection of connectors and features are available to meet most requirements. Higher RF power handling designs available. **Applications:** test stations, stand-by switch, antenna diversity switch, bypass switch. **Markets:** defense, telecom, aerospace, enterprise, consumer and IoT.



Specifications	
Oper Temp	-25° C to +65° C
Oper Temp	-54° C to +85° C (M version)
Storage Temp	-55° C to +100° C
Humidity	Moisture resistant or immersion sealing available
Shock	MIL-STD-202 Method 213, Condition D, 500G (non oper)
Vibration	MIL-STD-202 Method 214, Condition D, 10G RMS (non oper)
Cycle Life	2M cycles (may vary based on selected options)

Voltages and Current				
Nominal Voltage, Vdc	12	15	24	28
Voltage Range, Vdc	11-13	14-16	22-26	24-30
Current (mA)*	390	320	220	200

** at nominal voltage and +20°C*

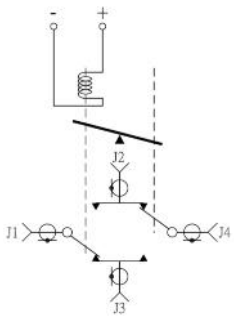
Popular Models	
TRAN-9A-30A	TRAN, K, Failsafe, DC-30GHz, 12VDC
TRAN-9A-30A-D	TRAN, K Failsafe, DC-30GHz, 12VDC, TTL
TRAN-9A-30A-S9	TRAN, K, Failsafe, DC-30GHz, 12VDC, D-Sub
TRAN-9B-30A	TRAN, K, Failsafe, DC-30GHz, 12VDC, Indicator
TRAN-9B-30A-D	TRAN, K, Failsafe, DC-30GHz, 12VDC, Indicator, TTL

- See backside for a full list of available features and options
- Contact us for high power and custom designs

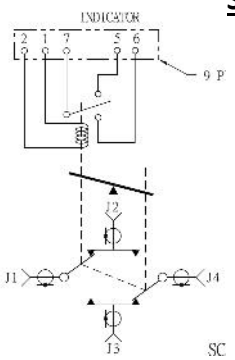
ISO 9001 RoHS Compliant

Disclaimer: Subject to change without notice @2016

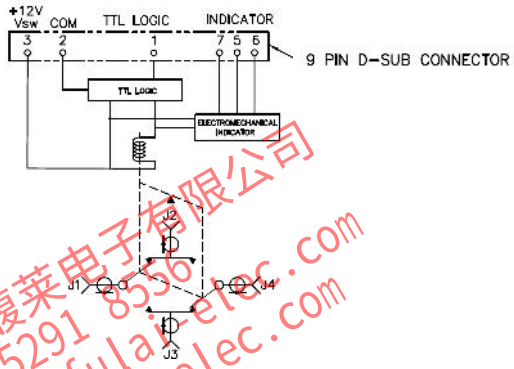
Schematics:



Standard



Indicators



TTL + Indicators

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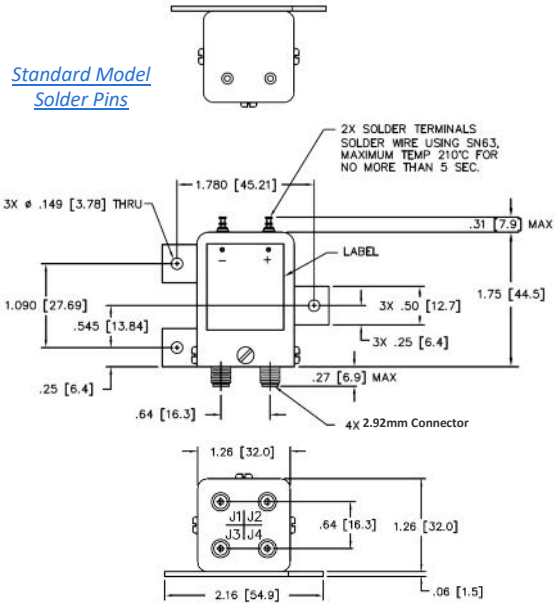
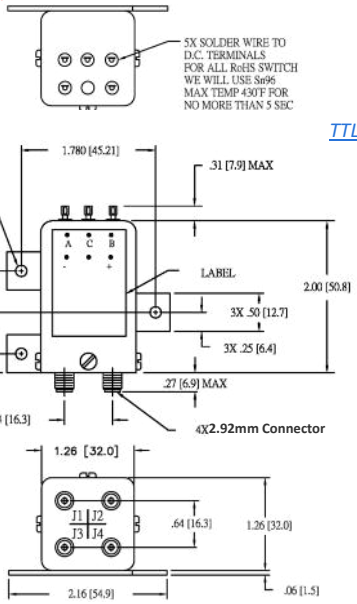
Outline:

Standard Model Solder Pins





TTL + Indicators with Solder Pins

Model Numbering System

Example: TRAN-9A-30A-D

(TRAN, K Connector, Failsafe without indicator, DC-30GHz, 12VDC, TTL Driver, Pin Terminal Control)

T R A N - 9 A - 3 0 A - D - __

Connector Type	
0: SMA	6: SMB
1: N	7: 7/16 DIN
2: TNC	8: BNC
3: RF PIN	9: K (2.92mm)
4: F (75Ω)	10: Mini DIN
5: SC	

Control Options
Default : Pin Terminal Control
S9 : 9 Pins D-Sub
S15 : 15 Pins D-Sub

Actuator Type
A : Failsafe without Indicator
B : Failsafe with Indicator

Frequency Range	
03 : DC-3GHz	22 : DC-22GHz
08 : DC-8GHz	26 : DC-26.5GHz
12 : DC-12GHz	30 : DC-30GHz
18 : DC-18GHz	

Actuator Voltage	
A : 12VDC	E : 20VDC
B : 15VDC	F : 5VDC
C : 28VDC	G: 18VDC
D : 24VDC	H: 48VDC

Options
D : TTL Driver
E : Decoder
H : High Power
I : Suppression Diodes
Y : Moisture Seal
C: Custom

RoHS Compliant

ISO 9001

* Solder pins are standard for TRAN, no designation on model number needed

Double-Pole-Double-Throw (DPDT), Transfer

Failsafe - Standard - Type N - DC to 12 GHz

Features:

- Broadband: DC - 12 GHz
- Extended Life: 2 million cycles
- High Power Handling: >1kW
- Low Insertion Loss
- High Isolation

RF Specification:

Frequency, (GHz)	DC-2	2-4	4-8	8-12
Ins. Loss dB (max)	0.2	0.4	0.5	0.7
Isolation dB (min)	80	80	70	60
VSWR (max)	1.20:1	1.40:1	1.50:1	1.70:1
Switching Time	20 mS (max)			
Switching Action	Break-Before-Make			
Impedance	50 Ω			
RF Power Handling	>1kW CW designs available			

Description:

Excellent high RF power handling with reliability and low loss performance makes these switches ideal for testing and end product applications. A wide selection of connectors and features are available to meet most requirements. Higher RF power designs available. **Applications:** test stations, stand-by switch, antenna diversity switch, bypass switch. **Markets:** defense, telecom, aerospace, enterprise, consumer and IoT.

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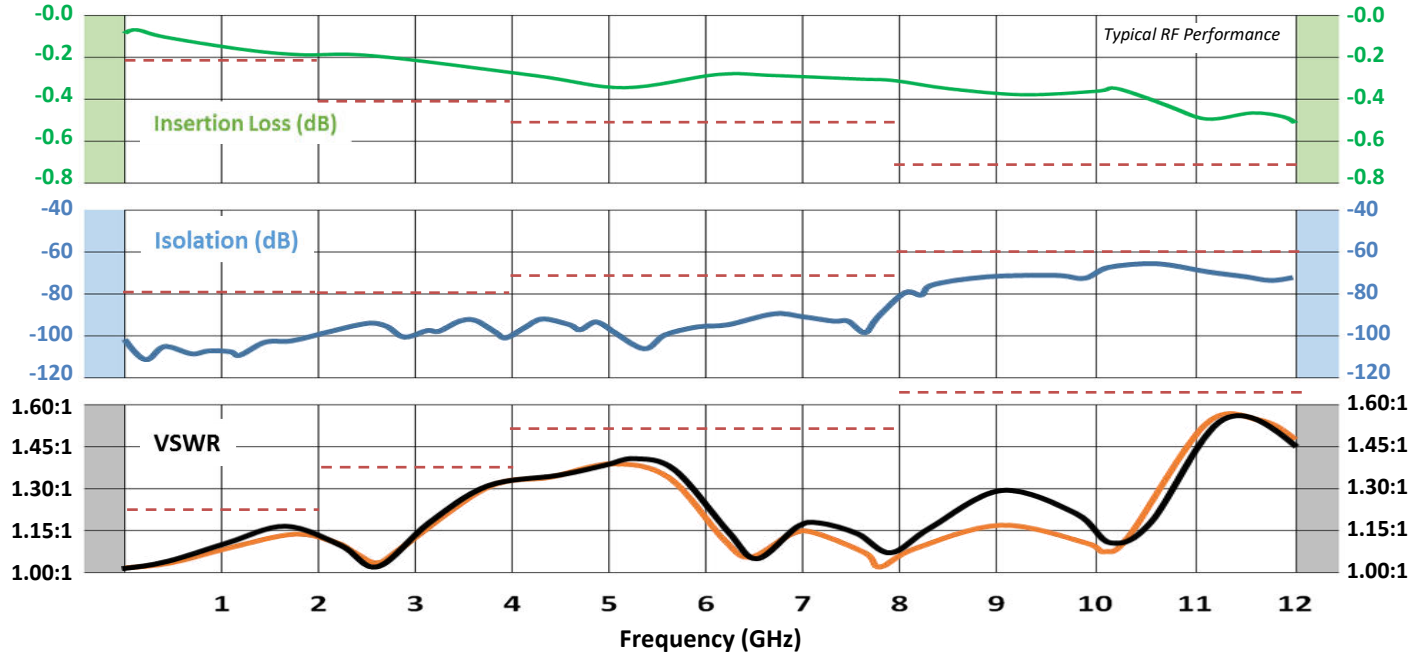


Specifications	
Oper Temp	-25° C to +65° C
Oper Temp	-54° C to +85° C (M version)
Storage Temp	-55° C to +100° C
Humidity	Moisture resistant or immersion sealing available
Shock	MIL-STD-202 Method 213, Condition D, 500G (non oper)
Vibration	MIL-STD-202 Method 214, Condition D, 10G RMS (non oper)
Cycle Life	2M cycles (may vary based on selected options)

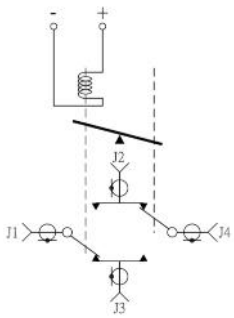
Voltages and Current				
Nominal Voltage, Vdc	12	15	24	28
Voltage Range, Vdc	11-13	14-16	22-26	24-30
Current (mA)*	800	500	300	270

** at nominal voltage and +20°C*

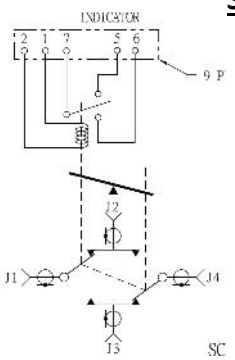
Popular Models	
TRAN-1A-12A	TRAN, N, Failsafe, DC-12GHz, 12VDC
TRAN-1A-12A-D	TRAN, N, Failsafe, DC-12GHz, 12VDC, TTL
TRAN-1A-12A-S9	TRAN, N, Failsafe, DC-12GHz, 12VDC, D-Sub
TRAN-1B-12A	TRAN, N, Failsafe, DC-12GHz, 12VDC, Indicator
TRAN-1B-12A-D	TRAN, N, Failsafe, DC-12GHz, 12VDC, Indicator, TTL

- See backside for a full list of available features and options
- Contact us for high power and custom designs

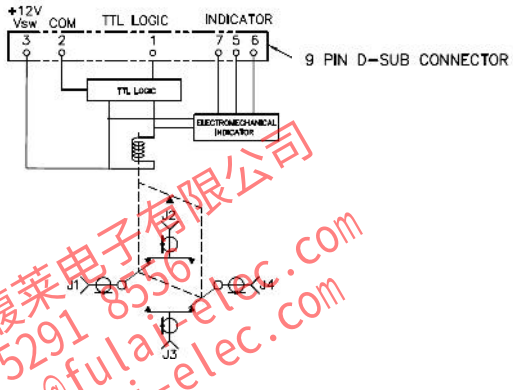
Schematics:



Standard



Indicators



TTL + Indicators

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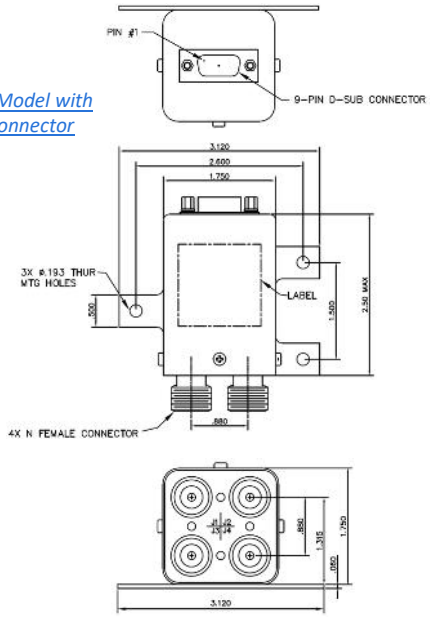
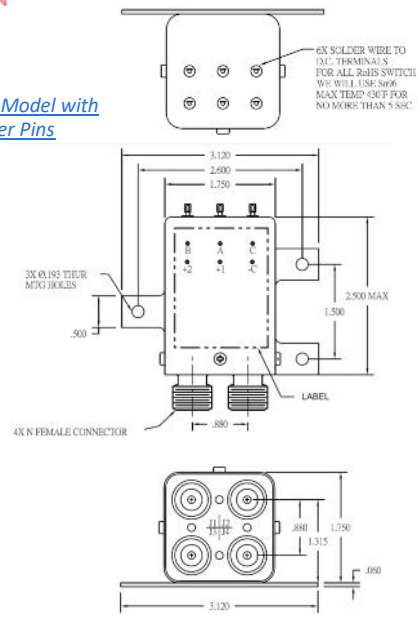
Outline:

Standard Model with D-Sub Connector



Standard Model with Solder Pins



Model Numbering System

Example: TRAN-1A-12A-D

(TRAN, N Connector, Failsafe without indicator, DC-12GHz, 12VDC, TTL Driver, Pin Terminal Control)

T R A N - 1 A - 1 2 A - D - __

Connector Type	
0: SMA	6: SMB
1: N	7: 7/16 DIN
2: TNC	8: BNC
3: RF PIN	9: K (2.92mm)
4: F (75Ω)	10: Mini DIN
5: SC	

Actuator Type
A : Failsafe without Indicator
B : Failsafe with Indicator

Frequency Range
03 : DC-3GHz
08 : DC-8GHz
12 : DC-12GHz

Actuator Voltage	
A : 12VDC	E : 20VDC
B : 15VDC	F : 5VDC
C : 28VDC	G: 18VDC
D : 24VDC	H: 48VDC

Options
D : TTL Driver
E : Decoder
H : High Power
I : Suppression Diodes
Y : Moisture Seal
C: Custom

Control Options
Default : Pin Terminal Control
S9 : 9 Pins D-Sub
S15 : 15 Pins D-Sub

RoHS Compliant

ISO 9001

* Solder pins are standard for TRAN, no designation on model number needed

Double-Pole-Double-Throw (DPDT), Transfer

Latching - Standard - SMA - DC to 18 GHz

Features:

- Broadband: DC - 18 GHz
- Extended Life: 5 million cycles
- Excellent Repeatability
- Low Insertion Loss
- High Isolation

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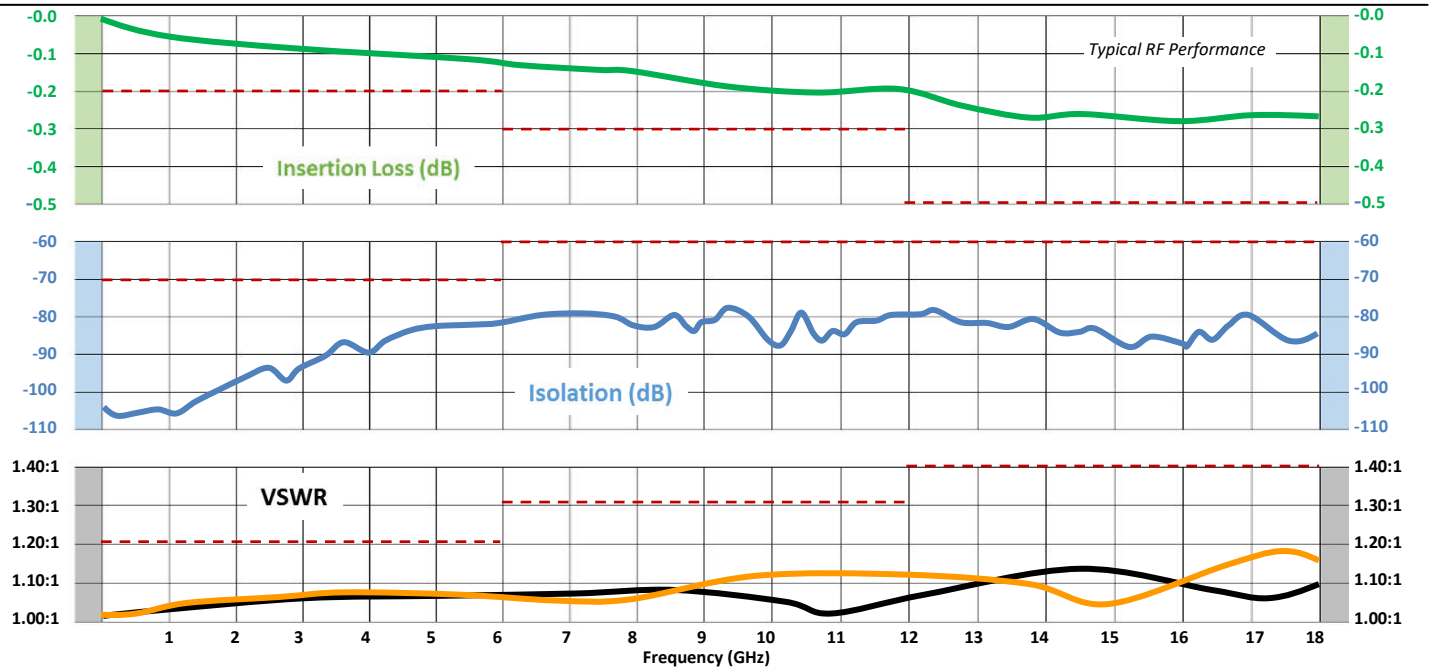
RF Specification:

Frequency, (GHz)	DC-6	6-12	12-18
Ins. Loss dB (max)	0.2	0.3	0.5
Isolation dB (min)	70	60	60
VSWR (max)	1.20:1	1.30:1	1.40:1
Switching Time	15 mS (max)		
Switching Action	Break-Before-Make		
Impedance	50 Ω		

Description:

Repeatability, low power consumption and low insertion loss makes these switches ideal for testing and end product applications. A wide selection of connectors and features are available to meet most requirements. Higher RF power designs available. **Applications:** test stations, stand-by switch, antenna diversity switch, bypass switch. **Markets:** defense, telecom, aerospace, enterprise, consumer and IoT.



Specifications	
Oper Temp	-25° C to +65° C
Oper Temp	-54° C to +85° C (M version)
Storage Temp	-55° C to +100° C
Humidity	Moisture resistant or immersion sealing available
Shock	MIL-STD-202 Method 213, Condition D, 500G (non oper)
Vibration	MIL-STD-202 Method 214, Condition D, 10G RMS (non oper)
Cycle Life	5M cycles (may vary based on selected options)

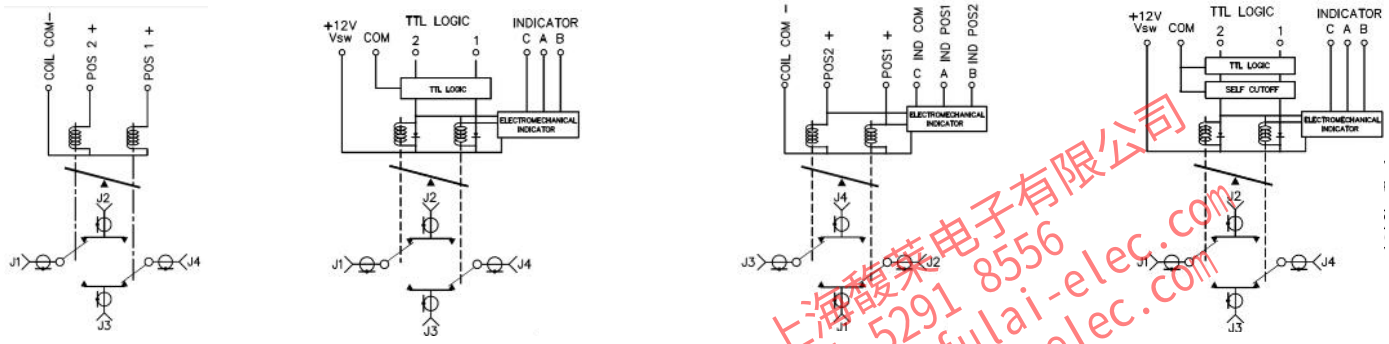
Voltages and Current				
Nominal Voltage, Vdc	12	15	24	28
Voltage Range, Vdc	11-13	14-16	22-26	24-30
Current (mA)*	150	130	85	60

** at nominal voltage and +20°C*

Popular Models	
TRAN-0C-18A	TRAN, SMA, Latching, DC-18GHz, 12VDC
TRAN-0C-18A-D	TRAN, SMA, Latching, DC-18GHz, 12VDC, TTL
TRAN-0C-18A-S9	TRAN, SMA, Latching, DC-18GHz, 12VDC, D-Sub
TRAN-0C-18A	TRAN, SMA, Latching, DC-18GHz, 12VDC, Indicator
TRAN-0C-18A-D	TRAN, SMA, Latching, DC-18GHz, 12VDC, Indicator, TTL

- See backside for a full list of available features and options
- Contact us for high power and custom designs

Schematics:



Standard | TTL + Indicators | Indicators | Self Cutoff / TTL + Indicators

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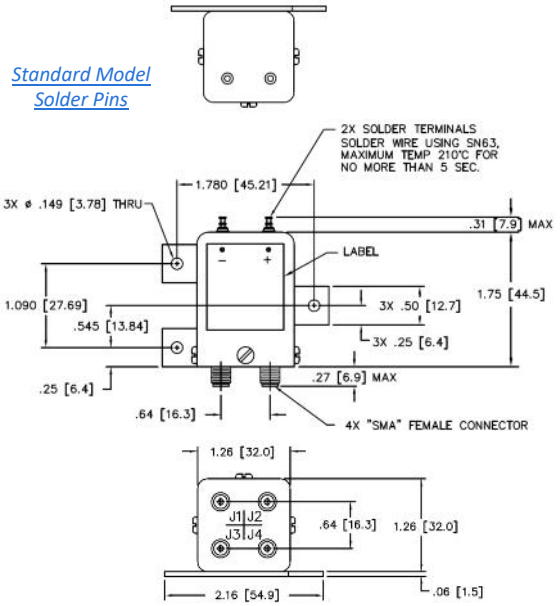
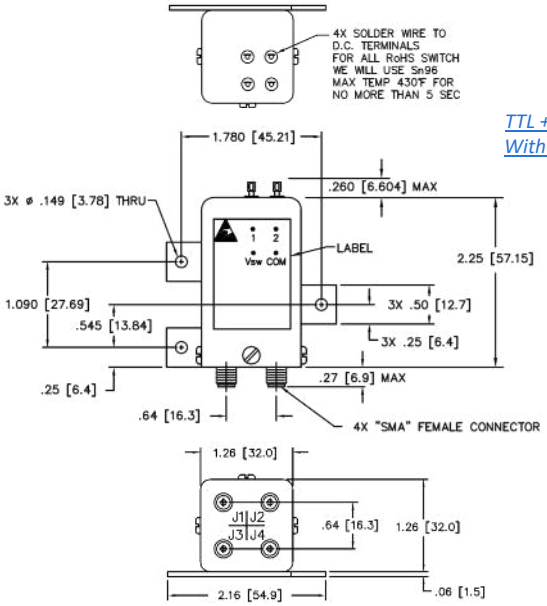
Outline:

Standard Model Solder Pins



TTL + Self Cutoff With Solder Pins



Model Numbering System

Example: TRAN-0C-18A-D

(TRAN, SMA Connector, Latching without indicator, DC-18GHz, 12VDC, TTL Driver, Pin Terminal Control)

T R A N - 0 C - 1 8 A - D - __

Connector Type	
0: SMA	6: SMB
1: N	7: 7/16 DIN
2: TNC	8: BNC
3: RF PIN	9: K (2.92mm)
4: F (75Ω)	10: Mini DIN
5: SC	

Actuator Type
C : Latching without Indicator
D : Latching with Indicator

Frequency Range
03 : DC-3GHz
08 : DC-8GHz
12 : DC-12GHz
18 : DC-18GHz

Actuator Voltage	
A : 12VDC	E : 20VDC
B : 15VDC	F : 5VDC
C : 28VDC	G: 18VDC
D : 24VDC	H: 48VDC

Options
D : TTL Driver
E : Decoder
H : High Power
I : Suppression Diodes
P : Positive + Common
S : Self Cutoff
Y : Moisture Seal
C: Custom

Control Options
Default : Pin Terminal Control
S9 : 9 Pins D-Sub
S15 : 15 Pins D-Sub

RoHS Compliant

ISO 9001

* Solder pins are standard for TRAN, no designation on model number needed

Disclaimer: Subject to change without notice @2016

Double-Pole-Double-Throw (DPDT), Transfer

Latching - Standard - 2.92mm - DC to 30 GHz

Features:

- Broadband: DC - 30 GHz
- Extended Life: 5 million cycles
- Excellent Repeatability
- Low Insertion Loss
- High Isolation

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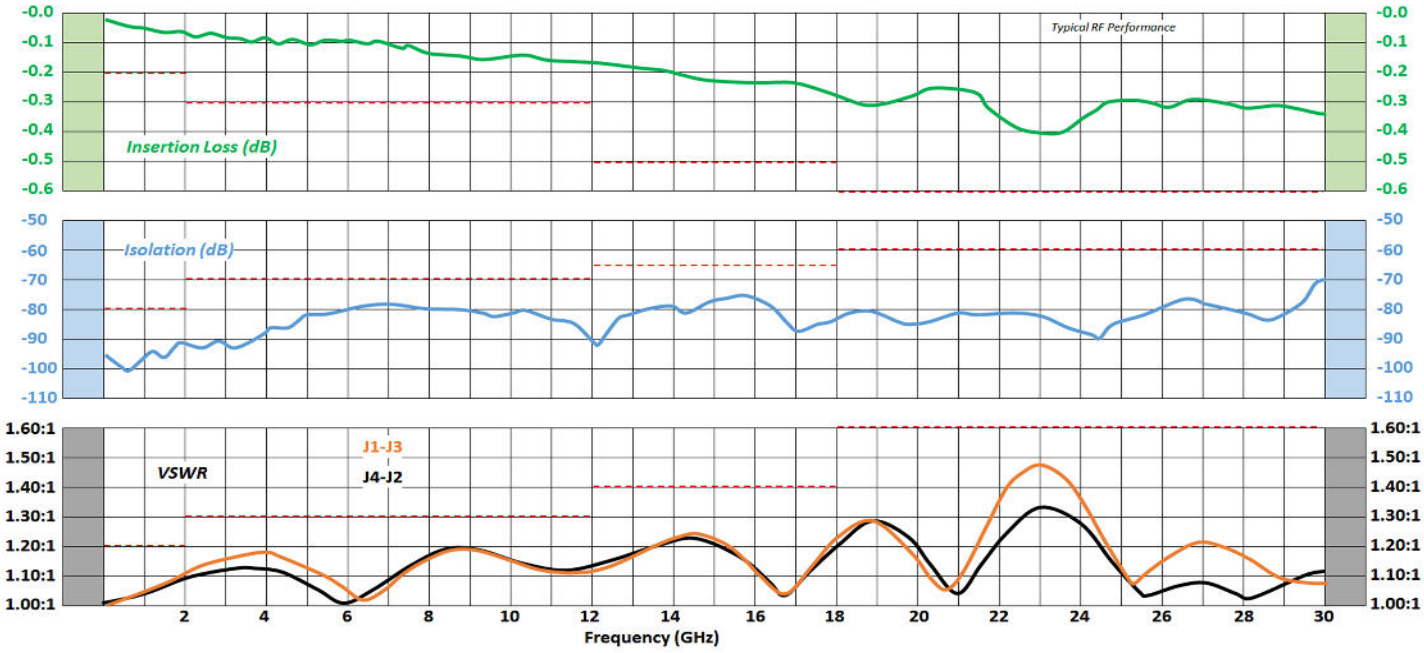
RF Specification:

Frequency, (GHz)	DC-6	6-12	12-18	18-30
Ins. Loss dB (max)	0.2	0.3	0.5	0.8
Isolation dB (min)	80	70	62	60
VSWR (max)	1.20:1	1.30:1	1.40:1	1.60:1
Switching Time	15 mS (max)			
Switching Action	Break-Before-Make			
Impedance	50 Ω			

Description:

Repeatability, low power consumption and low insertion loss makes these switches ideal for testing and end product applications. A wide selection of connectors and features are available to meet most requirements. Higher RF power designs available. **Applications:** test stations, stand-by switch, antenna diversity switch, bypass switch. **Markets:** defense, telecom, aerospace, enterprise, consumer and IoT.



Specifications	
Oper Temp	-25° C to +65° C
Oper Temp	-54° C to +85° C (M version)
Storage Temp	-55° C to +100° C
Humidity	Moisture resistant or immersion sealing available
Shock	MIL-STD-202 Method 213, Condition D, 500G (non oper)
Vibration	MIL-STD-202 Method 214, Condition D, 10G RMS (non oper)
Cycle Life	5M cycles (may vary based on selected options)

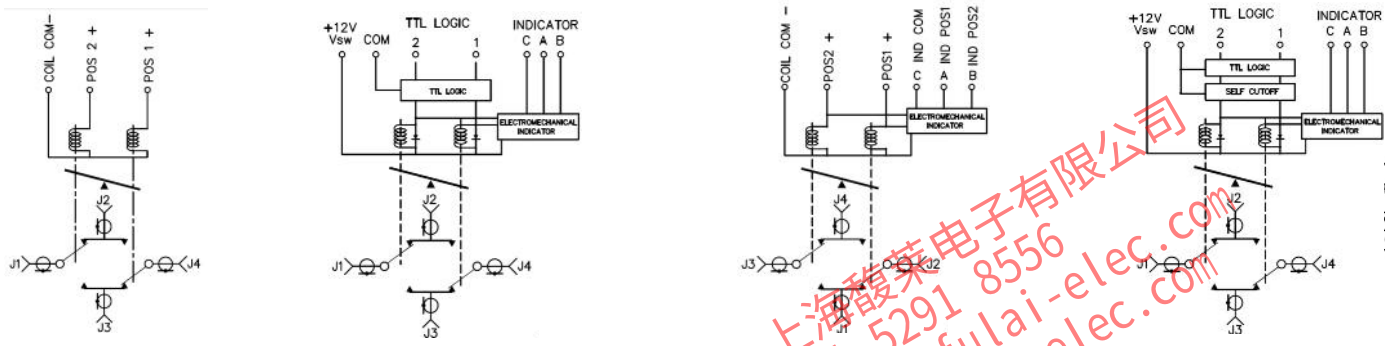
Voltages and Current				
Nominal Voltage, Vdc	12	15	24	28
Voltage Range, Vdc	11-13	14-16	22-26	24-30
Current (mA)*	150	130	85	60

** at nominal voltage and +20°C*

Popular Models	
TRAN-9C-30A	TRAN, K, latching, DC-30GHz, 12VDC
TRAN-9C-30A-D	TRAN, K, Latching, DC-30GHz, 12VDC, TTL
TRAN-9C-30A-S9	TRAN, K, Latching, DC-30GHz, 12VDC, D-Sub
TRAN-9D-30A	TRAN, K, Latching, DC-30GHz, 12VDC, Indicator
TRAN-9D-30A-D	TRAN, K, Latching, DC-30GHz, 12VDC, Indicator, TTL

- See backside for a full list of available features and options
- Contact us for high power and custom designs

Schematics:



Standard | TTL + Indicators | Indicators | Self Cutoff / TTL + Indicators

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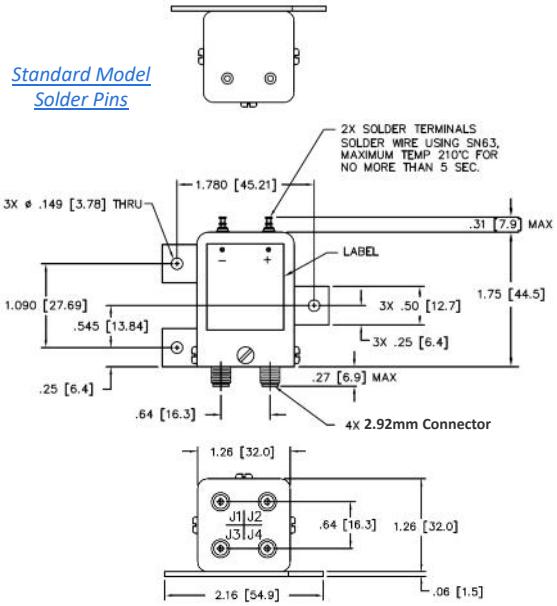
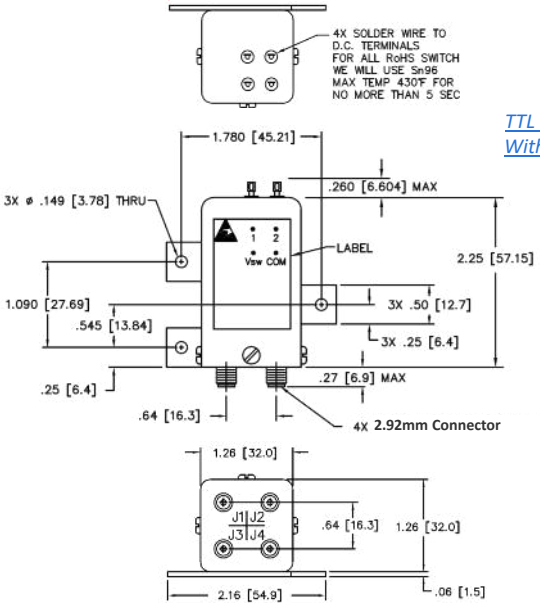
www.fulai-elec.com

Outline:

Standard Model Solder Pins



TTL + Self Cutoff With Solder Pins



Model Numbering System

Example: TRAN-9C-30A-D

(TRAN, K Connector, Latching without indicator, DC-30GHz, 12VDC, TTL Driver, Pin Terminal Control)

T R A N - 9 C - 3 0 A - D - __

Connector Type	
0: SMA	6: SMB
1: N	7: 7/16 DIN
2: TNC	8: BNC
3: RF PIN	9: K (2.92mm)
4: F (75Ω)	10: Mini DIN
5: SC	

Control Options
Default : Pin Terminal Control
S9 : 9 Pins D-Sub
S15 : 15 Pins D-Sub

Actuator Type
C : Latching without Indicator
D : Latching with Indicator

Frequency Range	
03 : DC-3GHz	22 : DC-22GHz
08 : DC-8GHz	26 : DC-26.5GHz
12 : DC-12GHz	30 : DC-30GHz
18 : DC-18GHz	

Actuator Voltage	
A : 12VDC	E : 20VDC
B : 15VDC	F : 5VDC
C : 28VDC	G: 18VDC
D : 24VDC	H: 48VDC

Options
D : TTL Driver
E : Decoder
H : High Power
I : Suppression Diodes
P : Positive + Common
S : Self Cutoff
Y : Moisture Seal
C: Custom

RoHS Compliant

ISO 9001

* Solder pins are standard for TRAN, no designation on model number needed

Double-Pole-Double-Throw (DPDT), Transfer

Latching - Standard - Type N - DC to 12 GHz

Features:

- Broadband: DC - 12 GHz
- Extended Life: 5 million cycles
- High Power Handling: >1kW
- Low Insertion Loss
- High Isolation

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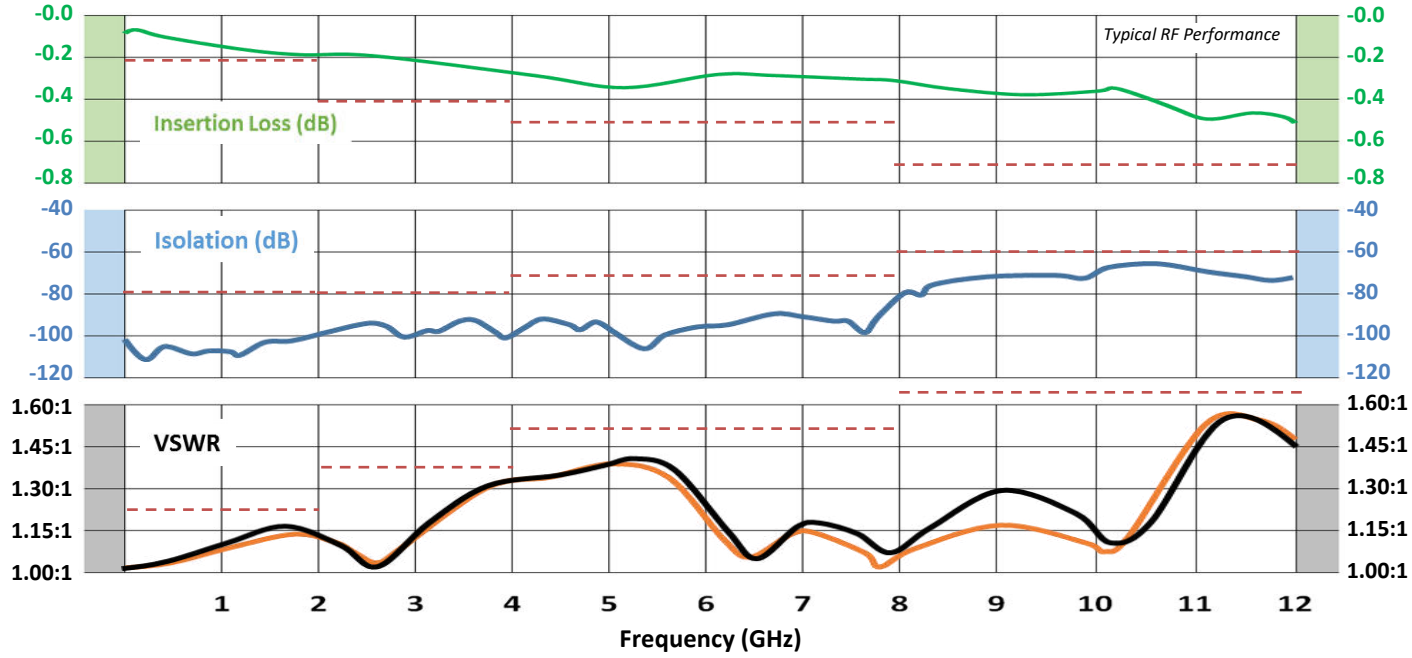
sales@mulai-elec.com
www.mulai-elec.com

RF Specification:

Frequency, (GHz)	DC-2	2-4	4-8	8-12
Ins. Loss dB (max)	0.2	0.4	0.5	0.7
Isolation dB (min)	80	80	70	60
VSWR (max)	1.20:1	1.40:1	1.50:1	1.70:1
Switching Time	20 mS (max)			
Switching Action	Break-Before-Make			
Impedance	50 Ω			
RF Power Handling	>1kW CW designs available			

Description:

Excellent high RF power handling with reliability and low loss performance makes these switches ideal for testing and end product applications. A wide selection of connectors and features is available to meet most requirements. Higher RF power designs available. **Applications:** test stations, stand-by switch, antenna diversity switch, bypass switch. **Markets:** defense, telecom, aerospace, enterprise, consumer and IoT.



Specifications	
Oper Temp	-25° C to +65° C
Oper Temp	-54° C to +85° C (M version)
Storage Temp	-55° C to +100° C
Humidity	Moisture resistant or immersion sealing available
Shock	MIL-STD-202 Method 213, Condition D, 500G (non oper)
Vibration	MIL-STD-202 Method 214, Condition D, 10G RMS (non oper)
Cycle Life	5M cycles (may vary based on selected options)

Voltages and Current				
Nominal Voltage, Vdc	12	15	24	28
Voltage Range, Vdc	11-13	14-16	22-26	24-30
Current (mA)*	170	120	200	110

** at nominal voltage and +20°C*

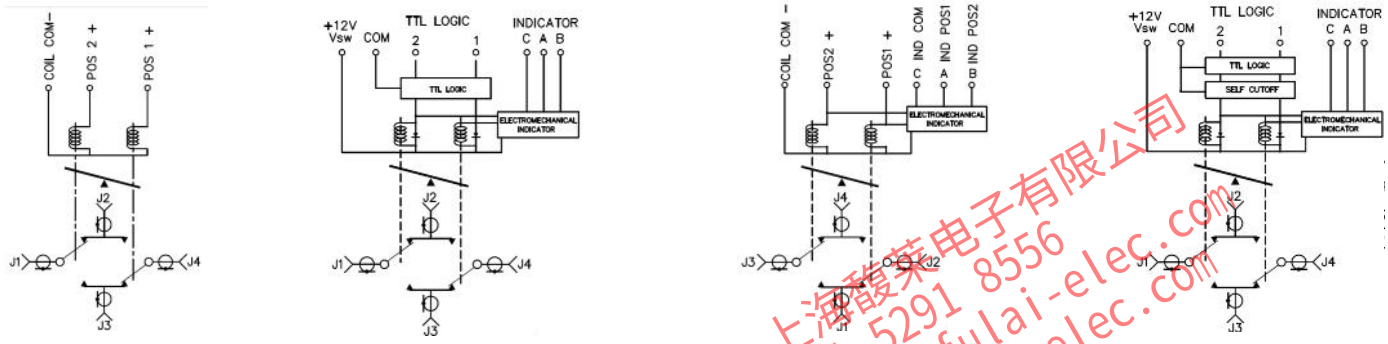
Popular Models	
TRAN-1C-12A	TRAN, N, Latching, DC-12GHz, 12VDC
TRAN-1C-12A-D	TRAN, N, Latching, DC-12GHz, 12VDC, TTL
TRAN-1C-12A-S9	TRAN, N, Latching, DC-12GHz, 12VDC, D-Sub
TRAN-1D-12A	TRAN, N, Latching, DC-12GHz, 12VDC, Indicator
TRAN-1D-12A-D	TRAN, N, Latching, DC-12GHz, 12VDC, Indicator, TTL

- See backside for a full list of available features and options
- Contact us for high power and custom designs

Double-Pole-Double-Throw (DPDT), Transfer

Latching - Standard - Type N - DC to 12 GHz

Schematics:



Standard | TTL + Indicators | Indicators | Self Cutoff / TTL + Indicators

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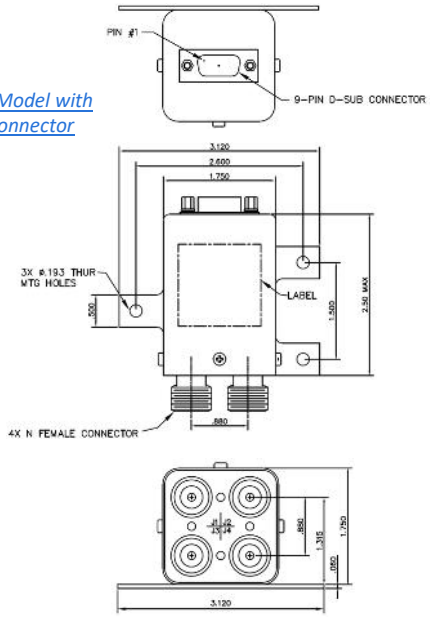
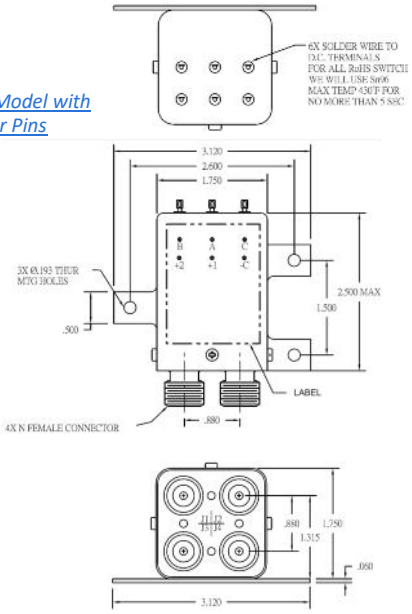
www.fulai-elec.com

Outline:

Standard Model with D-Sub Connector



Standard Model with Solder Pins



Model Numbering System

Example: TRAN-1C-12A-D

(TRAN, N Connector, Latching without indicator, DC-12GHz, 12VDC, TTL Driver, Pin Terminal Control)

T R A N - 1 C - 1 2 A - D - __

Connector Type

0: SMA	6: SMB
1: N	7: 7/16 DIN
2: TNC	8: BNC
3: RF PIN	9: K (2.92mm)
4: F (75Ω)	10: Mini DIN
5: SC	

Actuator Type

C : Latching without Indicator
D : Latching with Indicator

Frequency Range

03 : DC-3GHz
08 : DC-8GHz
12 : DC-12GHz

Actuator Voltage

A : 12VDC	E : 20VDC
B : 15VDC	F : 5VDC
C : 28VDC	G: 18VDC
D : 24VDC	H: 48VDC

Options

D : TTL Driver
E : Decoder
H : High Power
I : Suppression Diodes
P : Positive + Common
S : Self Cutoff
Y : Moisture Seal
C: Custom

Control Options

Default : Pin Terminal Control
S9 : 9 Pins D-Sub
S15 : 15 Pins D-Sub

RoHS Compliant

ISO 9001

* Solder pins are standard for TRAN, no designation on model number needed

Disclaimer: Subject to change without notice @2016