

Coaxial switches, SMA

General

The light weight coaxial switches of the PM 7550-series are designed for use in wideband miniaturized microwave systems under severe environmental conditions. Advanced stripline technique provides excellent electrical performance up to 18 GHz.

Latching or failsafe

Latching models require no holding current, whereas the **failsafe** models have a small holding current. Switching is break-before-make.

Protection circuit

Means for supply line interference suppression and reversed polarity protection are incorporated in most models.

Environmental

The switches are designed to be used in equipment, that meets MIL-E-5400 and MIL-E-16400. A balanced actuator construction having a small mass ensures that the switches withstand shock/vibrations.

Position indicator

For remote indication of the switch position additional contacts are incorporated, in most models.

Mounting

The switches are provided with mounting holes which also enable easy stacking of several units. This facilitates more complicated switching configurations (matrixing).

Min. distance between adjacent switches is 5 mm latching models, 10 mm for failsafe models.

Specification DC-18 GHz, all models

Frequency	DC—1 GHz	1—4 GHz	4—12 GHz	12—18 GHz
VSWR	<1.10	<1.20	<1.35	<1.50
Insertion loss	<0.1 dB	<0.2 dB	<0.3 dB	<0.5 dB
Isolation³⁾	>80 dB	>70 dB	>65 dB	>60 dB
RF impedance:	50 Ω			
Max. RF power:	peak 1 kW, average 15 W			
Actuator voltage:	28 \pm 5 V DC			
Duty cycle:	PM 7550-53 50 ms —55°C — +40°C linearly increasing to 200 ms at +85°C (min. time between successive operations) PM 7555-57 100%.			
Temperature:	—55°C to +85°C ambient			
RF connectors:	SMA jack			
Life:	min. 10 ⁶ actuations guaranteed			
Vibration:	Sine \pm 1.5 mm, 5—60 Hz Sine 20 g, 60—2000 Hz			
Material:	RF-circuit: aluminium (chromated) and solid gold alloy contacts RF-connectors: stainless steel, beryllium-copper terminals: solder pins			
Finish:	dull black paint			

Reliability—100% testing

All switches pass an extensive screening procedure, where all circuit parameters are checked across the frequency range, and continuous operation (running-in more than 5,000 actuations) is being checked during temperature cycling. This enables the detection of early and intermittent failures.

Model	PM 7550	PM 7551	PM 7552	PM 7553	PM 7555	PM 7555/01	PM 7557	PM 7557/01	PM 7560	PM 7561
Switch function	SPDT	Transfer	SPDT	Transfer	SPDT	SPDT	SPDT	SPDT	SPDT	Transfer
Actuator	latching	latching	failsafe	failsafe	latching	latching	failsafe	failsafe	manual	manual
Switching time	15 ms	15 ms	15 ms	15 ms	20 ms	20 ms	20 ms	20 ms	n/a	n/a
Pull-in/holding current at 25°C max.	350/-mA	350/-mA	440/40 mA	400/40 mA	60/mA	60/mA	60/60 mA	60/60 mA	n/a	n/a
Position indicator	yes	yes	yes	yes	no	yes	no	yes	no	no
Self cut-off	yes	yes	n/a	n/a	yes	no ¹⁾	n/a	n/a	n/a	n/a
Weight²⁾ max.	65 g	85 g	65 g	85 g	55 g	55 g	55 g	55 g	35 g	60 g

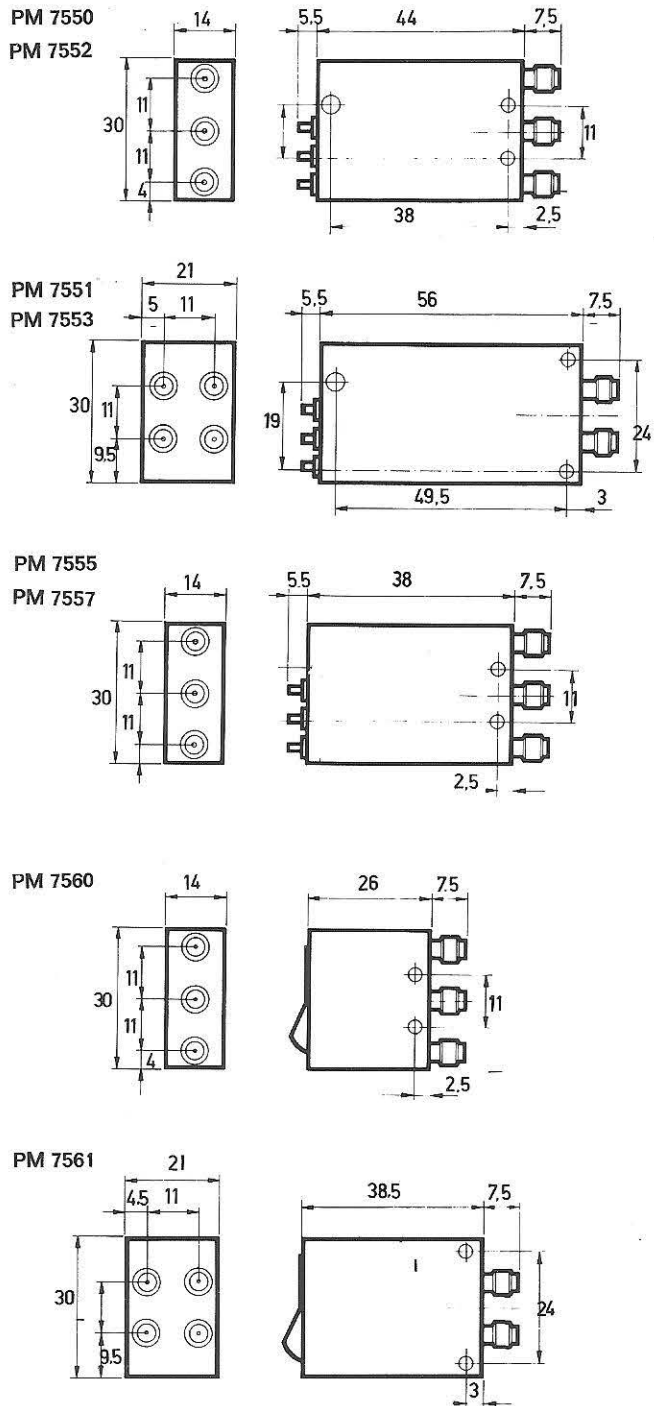
¹⁾ Pulse operated, pulse width 20—30 ms.

²⁾ 1 oz equals 28.35 g.

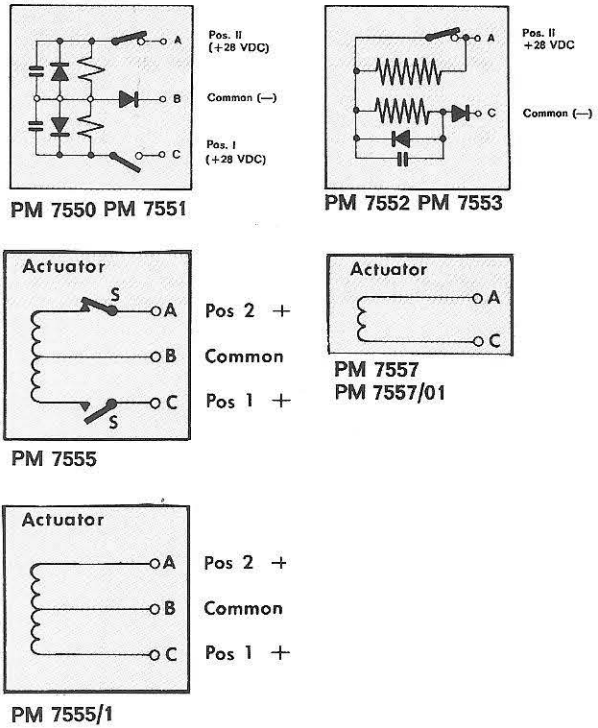
³⁾ Up to 90 dB available on option.

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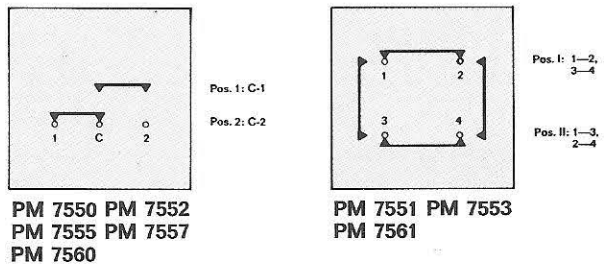
Outline drawing



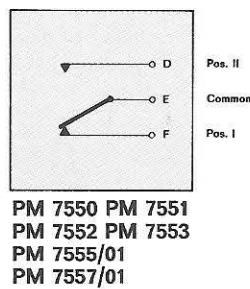
Actuators



RF circuits



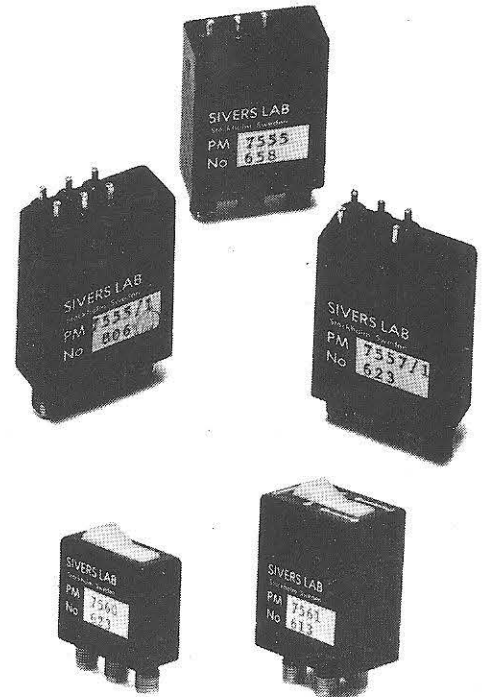
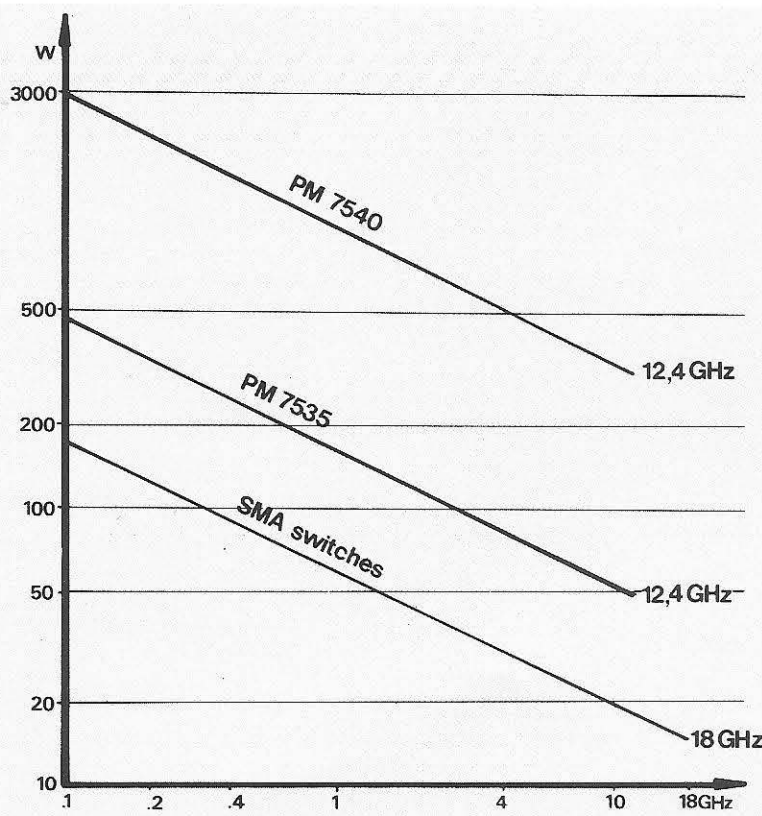
Position indicators



Power handling

Average power capacity

Max. RF-power at +85°C,
load VSWR = 1:1



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