



## SP8T Electromechanical Relay Normally Open Switch, DC to 18 GHz, up to 90W, 12V, SMA

### Electromechanical Relay Switches Technical Data Sheet

PE71S6384

#### Features

- Single Pole Eight Throw
- DC to 18 GHz Frequency Range
- Isolation greater than 80 dB typical
- 2M Cycle Min Operating Life
- +12 Volt DC
- 90 Watt average Power
- Normally Open Actuator
- -25 to +70°C Operating Temperature
- Insertion Loss as low as 0.2 dB Max
- VSWR as low as 1.25:1 max
- SMA Female RF connectors
- 15 Pin D-Sub Connector for DC Control
- Hot Switching Capability - Consult Factory
- S-Parameter Data available upon request

#### Applications

- High Performance Relay Switch
- Military Communications
- Communications Systems
- Test & Measurement

#### Description

The PE71S6384 is a Single Pole Eight Throw (SP8T) electromechanical relay switch that operates across a wide frequency range of DC to 18 GHz and can handle up to 90 Watts of CW input power in a break before make condition. The design features a Normally Open actuator and is rated for 2M life cycles for high reliability operation. Impressive performance includes insertion loss less than 0.15 dB typical and isolation greater than 80 dB typical. The Normally Open actuator has a +12 Vdc bias voltage, and operates over a temperature range of -25°C to +70°C. The rugged and compact package assembly supports SMA Female connectors and a 15 Pin D-Sub Connector for DC Control. And for highly reliable operation, the model is guaranteed to meet MIL-STD-202 environmental test conditions for shock and random vibration.

#### Electrical Specifications

Switch Type	SP8T
Actuator Type	Normally Open
Switching Sequence	Break before Make

Description	Minimum	Typical	Maximum	Units
Frequency Range	DC		18	GHz
Impedance		50		Ohms
Operating Voltage	11	12	13	Volts
Actuating Current @ 12 Volts		200		mA
VSWR		1.25:1	1.6:1	
Insertion Loss		0.25	0.5	dB
Isolation	75	80		dB
Input Power (CW)			60	Watts
Switching Time			20	ms Max

Click the following link (or enter part number in "SEARCH" on website) to obtain additional part information including price, inventory and certifications: [SP8T Electromechanical Relay Normally Open Switch, DC to 18 GHz, up to 90W, 12V, SMA PE71S6384](#)



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### Performance by Frequency

Description	F1	F2	F3	F4	F5	Units
Frequency Range	DC to 6	6 to 12	12 to 18			GHz
VSWR, Max	1.25:1	1.35:1	1.6:1			
Insertion Loss, Max	0.25	0.35	0.5			dB
Isolation, Min	80	75	75			dB
Input Power, Typ (CW)	90	75	60			Watts

### Mechanical Specifications

#### Size

Package Type	Connectorized
Operating Life	2,000,000 Cycles

#### Connectors

RF Connector Type	SMA Female
Control Connector	15 Pin D-Sub

### Environmental Specifications

#### Temperature

Operating Range	-25 to +70 deg C
Storage Range	-55 to +100 deg C

Shock	MIL-STD-202 Method 213, Cond. D 500G Non Operating
Vibration	MIL-STD-202 Method 214, Cond. D 10G RMS Non Operating

**Compliance Certifications** (see [product page](#) for current document)

### Plotted and Other Data

Notes:

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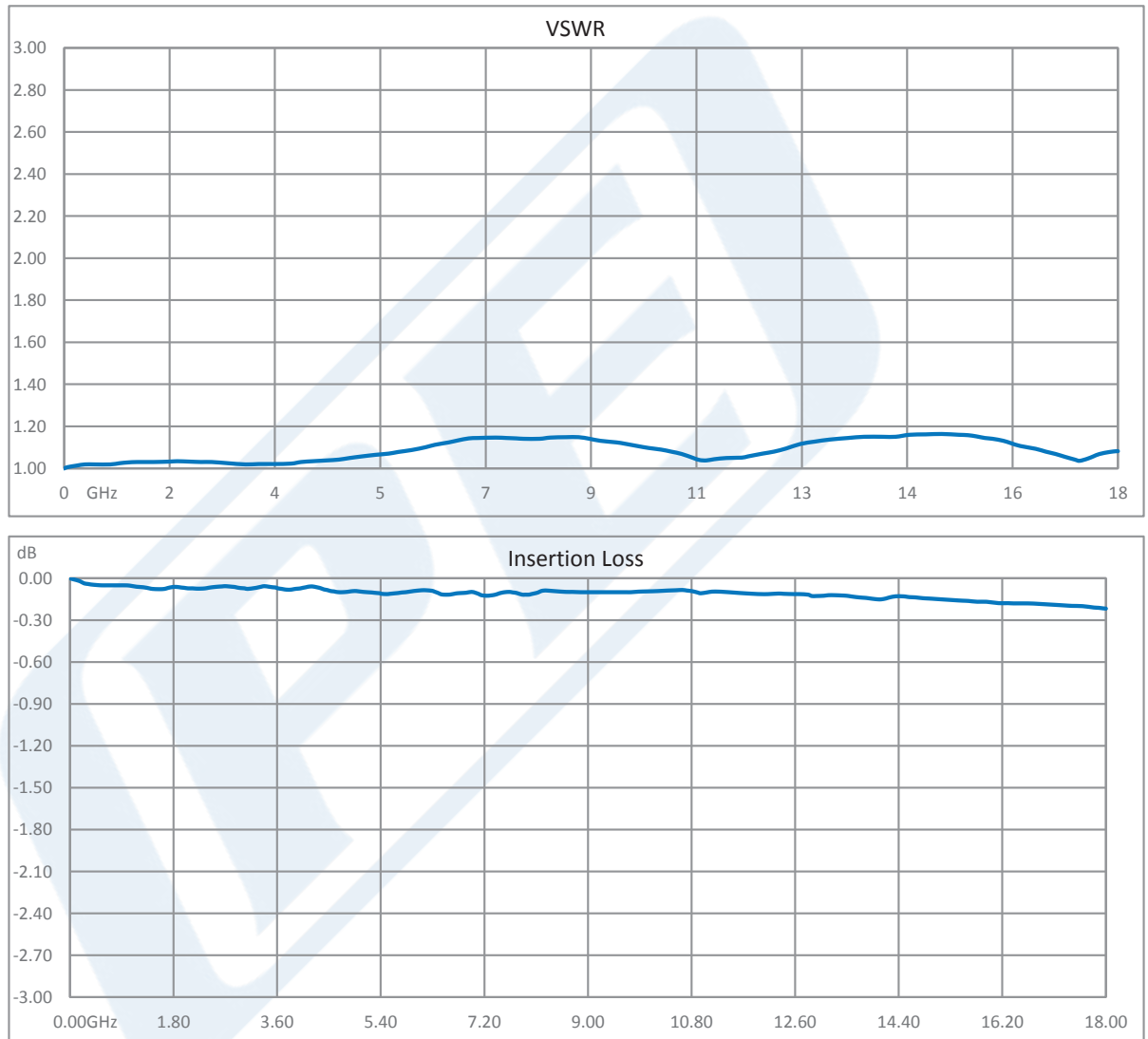


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Typical Performance Data



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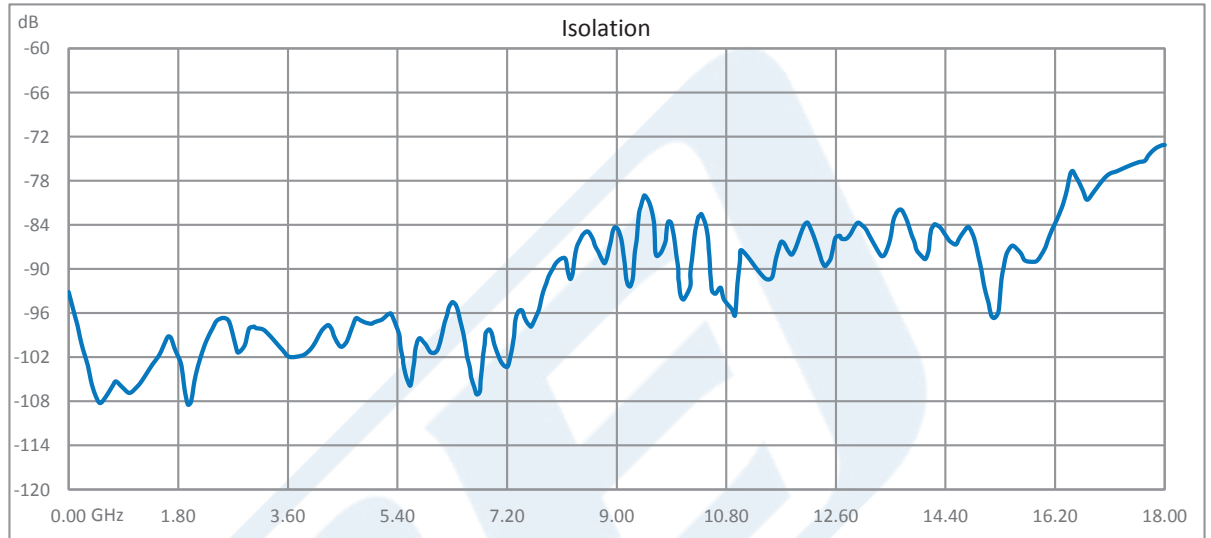




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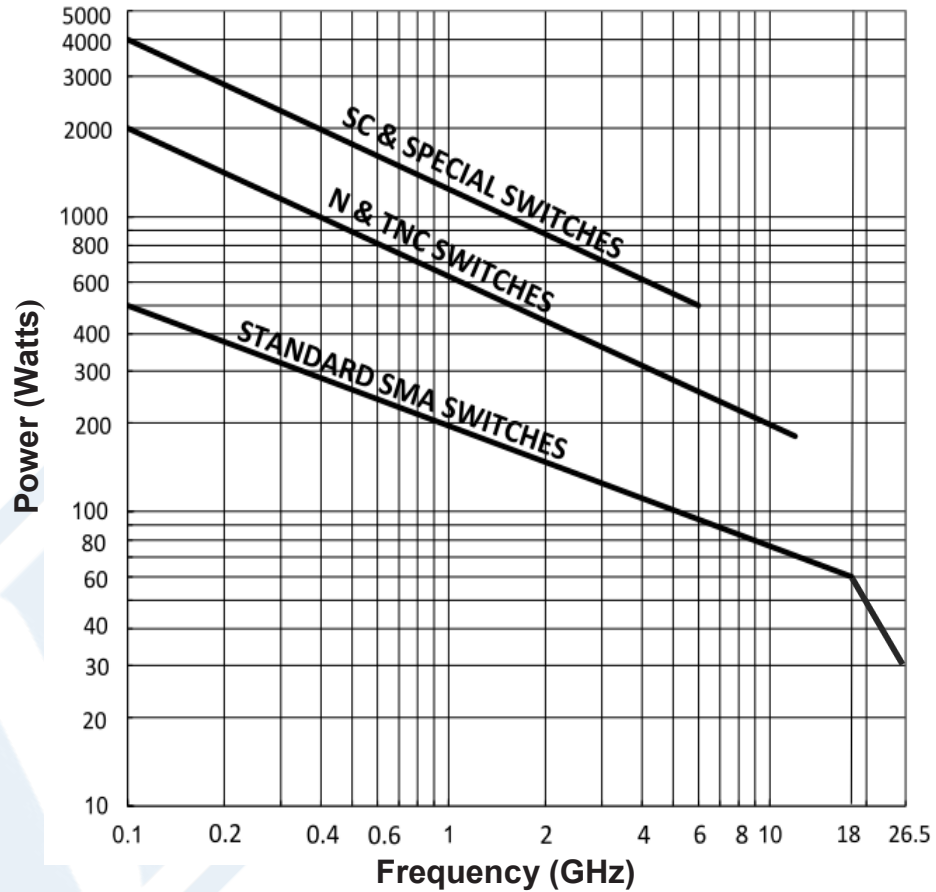


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**Power Handling vs. Frequency & Connector Type**



**Environmental and Test Conditions:**

- Ambient temperature of 25°C or less
- Altitude: Sea Level
- Load VSWR: 1.20:1 max.
- Cold Switching

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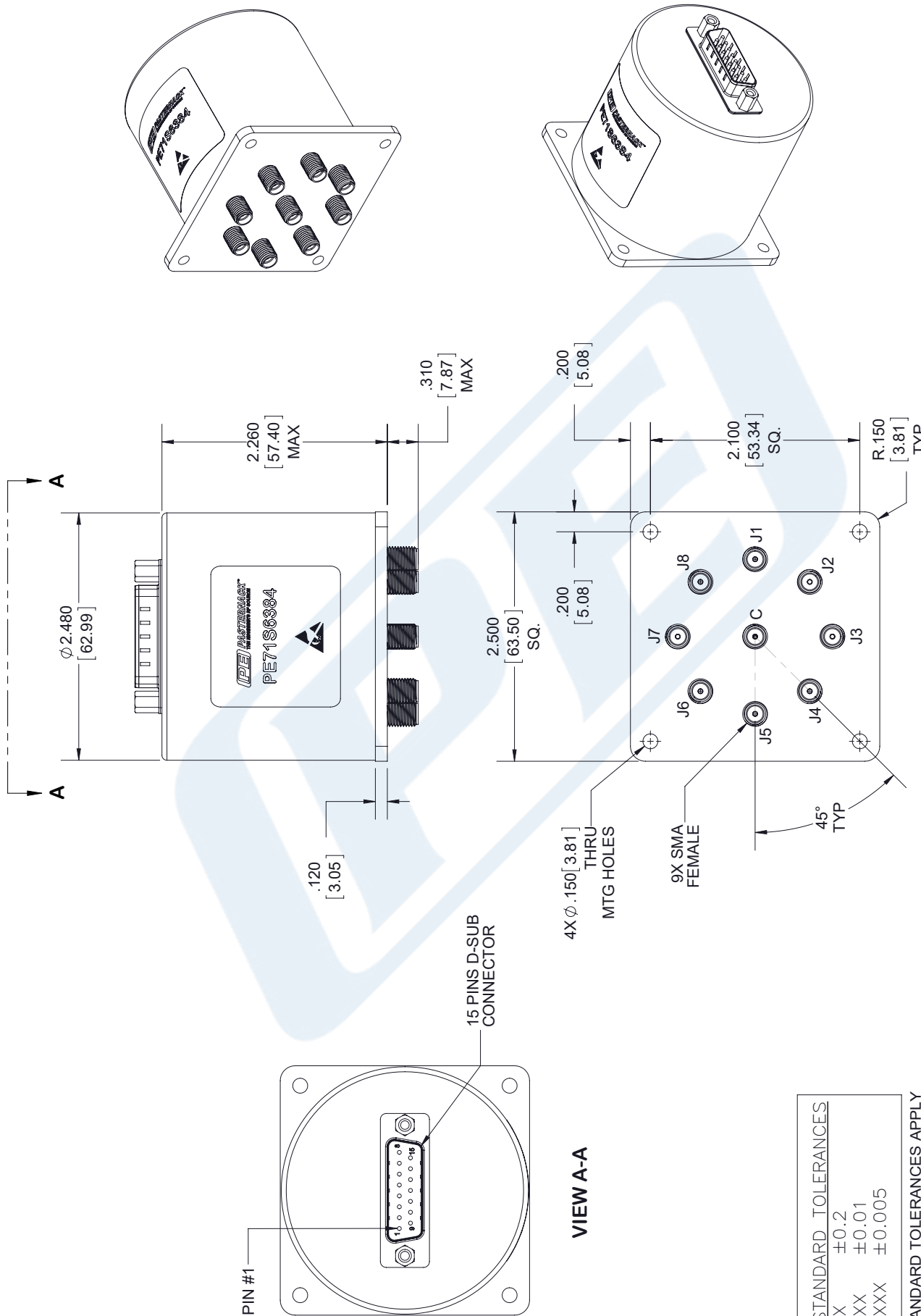






# PE71S6384 CAD Drawing

SP8T Electromechanical Relay Normally Open Switch,  
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STANDARD TOLERANCES
.X ±0.2
.XX ±0.01
.XXX ±0.005

\*STANDARD TOLERANCES APPLY ONLY TO DIMENSIONS IN INCHES



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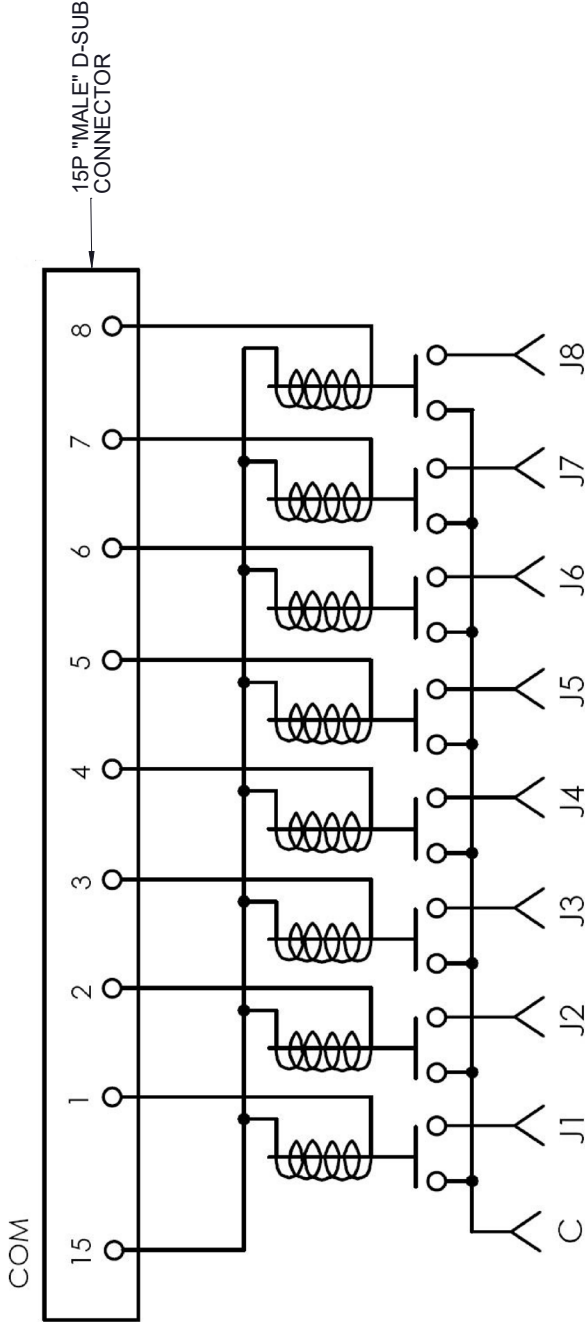
DWG TITLE  
**PE71S6384**

NOTES:  
1. UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE NOMINAL.  
2. ALL SPECIFICATIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE AT ANY TIME  
3. DIMENSIONS ARE IN INCHES [mm].

CAGE CODE	53919
SCALE	N/A
SIZE	A
CAD FILE	091117
7361	

# PE71S6384 CAD Drawing

SP8T Electromechanical Relay Normally Open Switch,  
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**SCHEMATIC SHOWN IN NORMALLY OPEN POSITION**

TERMINALS D-SUB PIN ASSIGNMENT	RF PATH							
	J1	J2	J3	J4	J5	J6	J7	J8
1	ON	OFF	OFF	OFF	OFF	OFF	OFF	OFF
2	OFF	ON	OFF	OFF	OFF	OFF	OFF	OFF
3	OFF	OFF	ON	OFF	OFF	OFF	OFF	OFF
4	OFF	OFF	OFF	ON	OFF	OFF	OFF	OFF
5	OFF	OFF	OFF	OFF	ON	OFF	OFF	OFF
6	OFF	OFF	OFF	OFF	OFF	ON	OFF	OFF
7	OFF	OFF	OFF	OFF	OFF	OFF	ON	OFF
8	OFF	OFF	OFF	OFF	OFF	OFF	OFF	ON

STANDARD TOLERANCES  
 .X ±0.2  
 .XX ±0.01  
 .XXX ±0.005

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