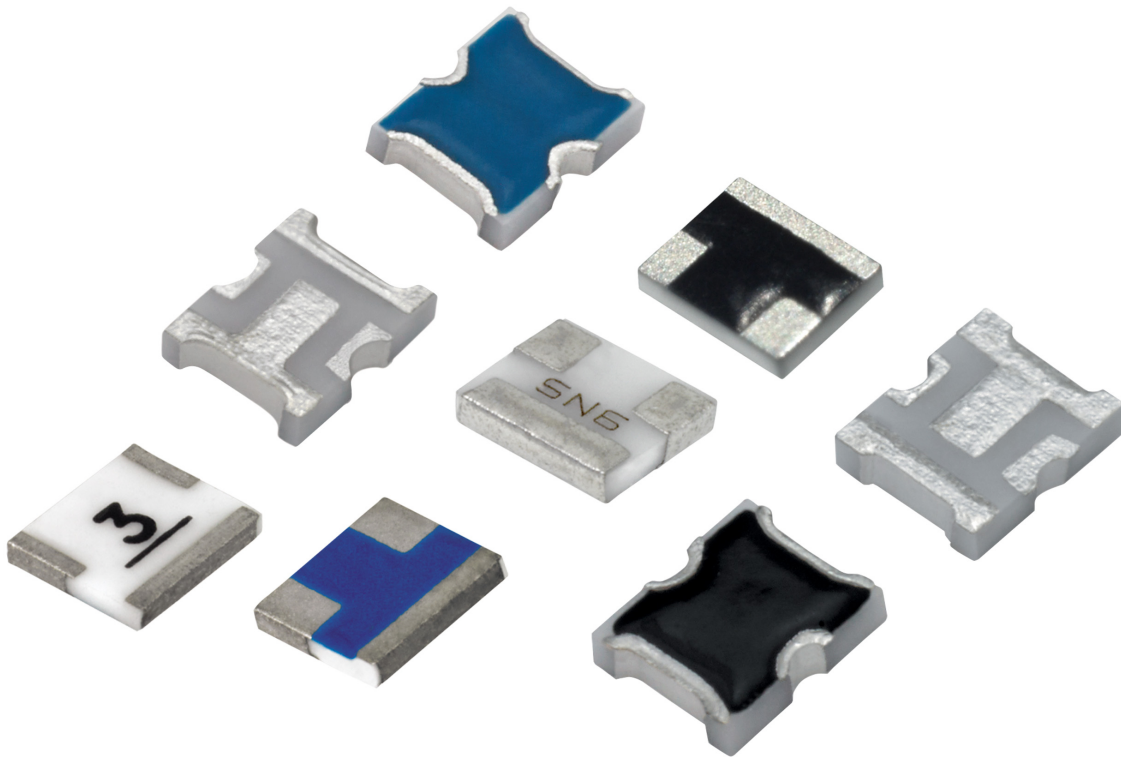


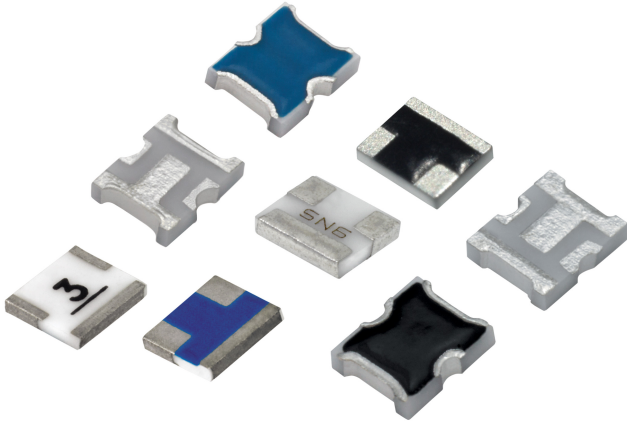
# Smiths Product Line Series

Qualified Reliability Components



# SPL Series - Qualified Reliability Components

RESISTIVE PRODUCT FOR HIGH RELIABILITY APPLICATIONS



Smiths Interconnect offers a lower cost of ownership product based on MIL-PRF-55342 space heritage for most standard products designed to ensure long term reliability in demanding applications. This product delivers 100% electrical, mechanical and visual inspection with annual qualification included through the standard procurement process.

Smiths Interconnect offers fixed attenuator and Thermopad® products in a Smiths Qualified reliability process based on product heritage for new platforms for space, military, and aerospace applications. This eliminates the need for costly and time-consuming custom drawings and specifications, by choosing a product from a set standard products with full heritage. With Smiths Interconnect's smart part numbering system, customers may designate the Smiths Product Line "SPL-" in front of the part number to gain this benefit of addition screening to the standard product. Purchasing is simplified

Smiths Interconnect has supplied RF passive components for space flight missions for over 45 years, participating in more than 500 military, commercial and scientific satellite programs. Our capabilities support our customers through launch by providing 100% testing and annual qualification testing. Over the years Smiths Interconnect has earned a reputation of excellent performance with many of the world's major space organizations through our design and manufacturing of high performance component products utilizing our core technologies to ensure compliance with the extremely high reliability levels required for long life in defense, commercial and civil satellite applications.

The SPL Series of products offers space and defense level performance and yearly qualification documentation for mission assurance.

## Features and Benefits

- 100% electrical, visual and mechanical tested
- Annual test data product qualification report
- Lower cost of ownership
- Shorter lead times

## Applications

- Amplifier circuits
- Transmit/receive modules
- Up/down converters
- Instrumentation
- Satellite communications
- Radar
- Broadcast

# Technical Characteristics

## High Reliability Product Offering

### Fixed Attenuator Products

Standard Product Series	SPL (Smiths Product List) Series		Frequency Range (GHz)	Input Power CW (Watts)	Component Size (Inches)	Component Size (mm)
TS03	SPL-TS03		DC-8	2.00	0.145 X 0.122	3.68 X 3.10
TS05	SPL-TS05		DC-12.4	0.75 TO 5 WATTS*	0.075 X 0.060	1.90 X 1.52
TS09	SPL-TS09		DC-20	0.20	0.060 X 0.075	1.52 X 1.90

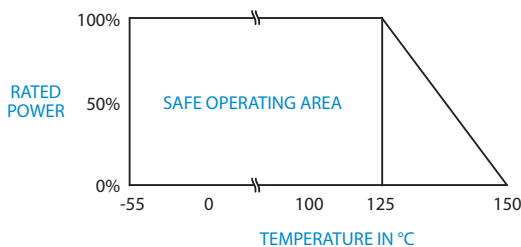
\* POWER DEPENDS ON dB VALUE CHOSEN

### Thermopad® Products

Standard Product Series	SPL (Smiths Product List) Series		Frequency Range (GHz)	Input Power CW (Watts)	Component Size (Inches)	Component Size (mm)
TVA	SPL-TVA		DC-6	2.00	0.145 X 0.122	3.68 X 3.10
MTVA	SPL-MTVA		DC-12.4	0.20	0.075 X 0.060	1.90 X 1.52
WTVA	SPL-WTVA		DC-20	0.20	0.060 X 0.075	1.52 X 1.90

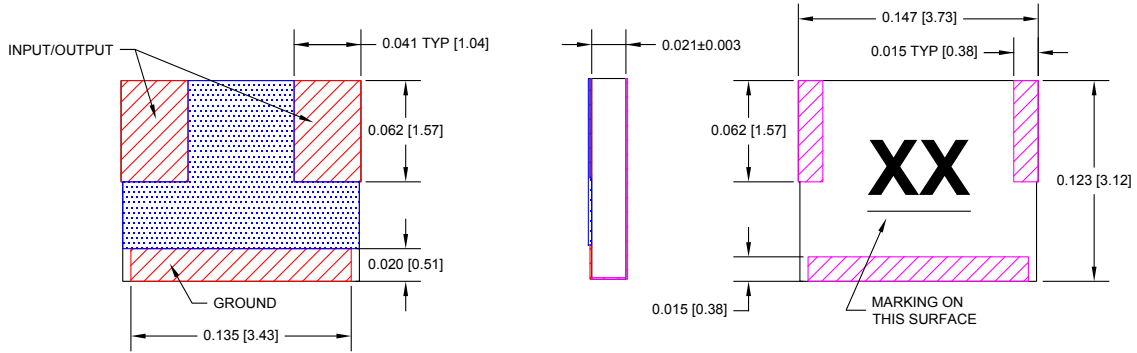
# Power Derating Curve

SPL-TS03, SPL-TS05, SPL-TS09, SPL-TVA, SPL-MTVA, SPL-WTVA



# Mechanical

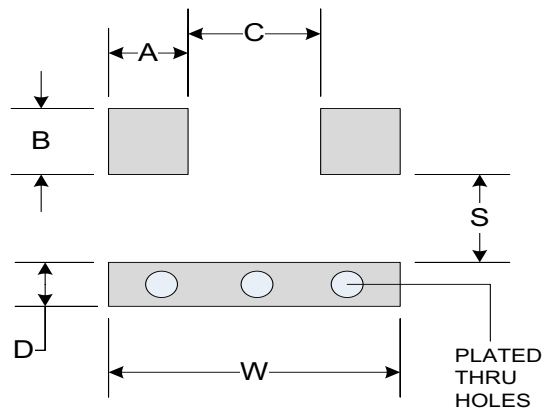
## SPL-TS03XXW3 - Triple Wrap Option



\*Dimensions apply before solder, allow 0.015" max for all pretinned surfaces  
 Unless otherwise specified, tolerance: X.XXX = ±0.005"

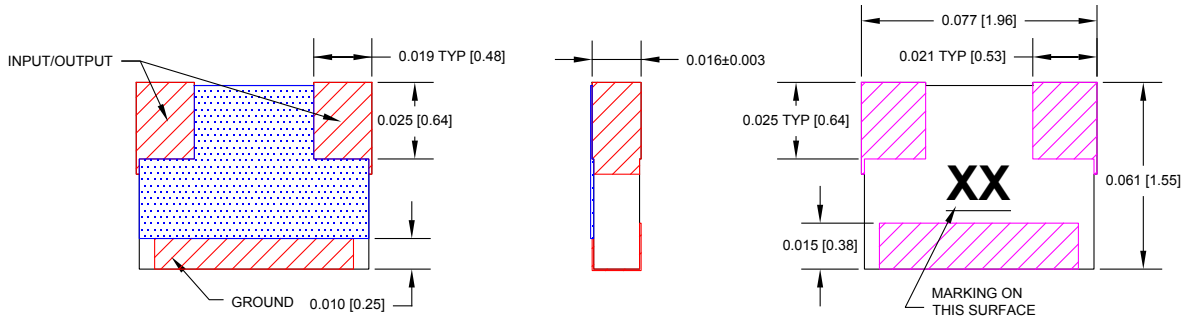
# Suggested Mounting Footprint

Part Number	Inches						MM					
	A	B	C	D	S	W	A	B	C	D	S	W
SPL-TS03XXW3	0.043	0.064	0.067	0.023	0.041	0.150	1.09	1.63	1.70	0.58	1.04	3.81



# Mechanical

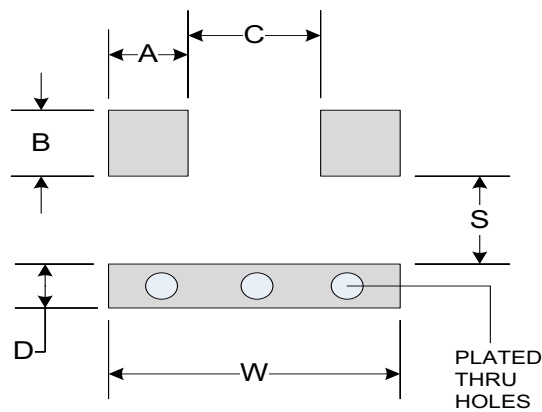
## SPL-TS05XXW3 - Triple Wrap Option



\*Dimensions apply before solder, allow 0.015" max for all pretinned surfaces  
 Unless otherwise specified, tolerance: X.XXX = ±0.005"

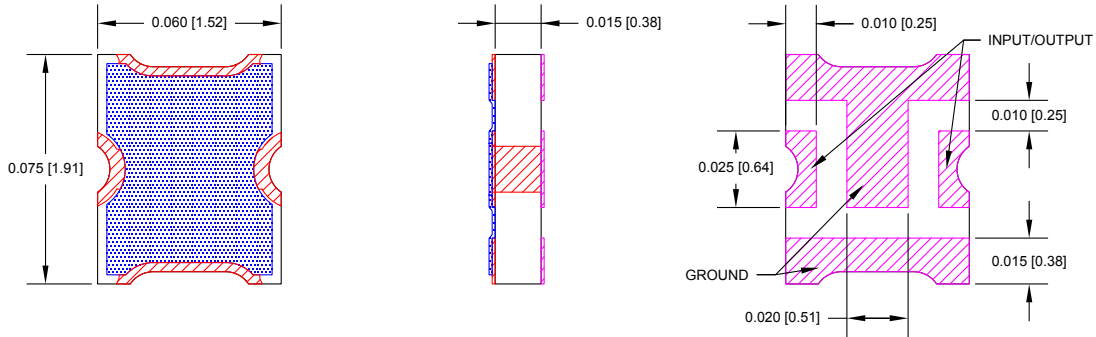
# Suggested Mounting Footprint

Part Number	Inches						MM					
	A	B	C	D	S	W	A	B	C	D	S	W
SPL-TS05XXW3	0.022	0.028	0.041	0.013	0.026	0.075	0.56	0.71	1.04	0.33	0.66	1.91



# Mechanical

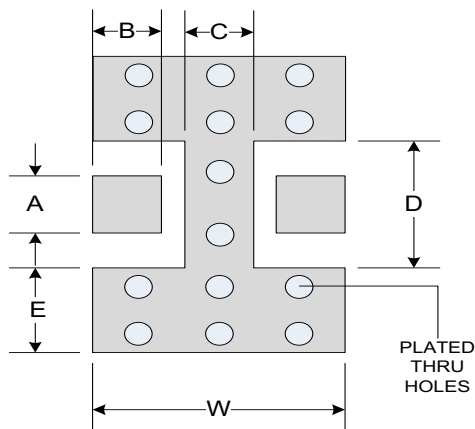
## SPL-TS09XXXXSMTS - Surface Mount



\*Dimensions apply before solder, allow 0.015" max for all pretinned surfaces  
 Unless otherwise specified, tolerance: X.XXX = ±0.005"

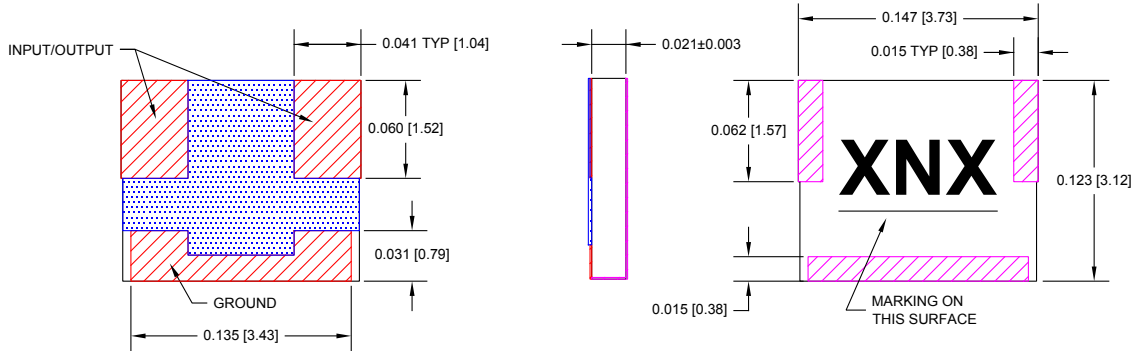
# Suggested Mounting Footprint

Part Number	Inches						MM					
	A	B	C	D	S	W	A	B	C	D	S	W
SPL-TS09XXXXSMTS	0.025	0.015	0.016	0.049	0.018	0.070	0.64	0.38	0.41	1.24	0.46	1.78



# Mechanical

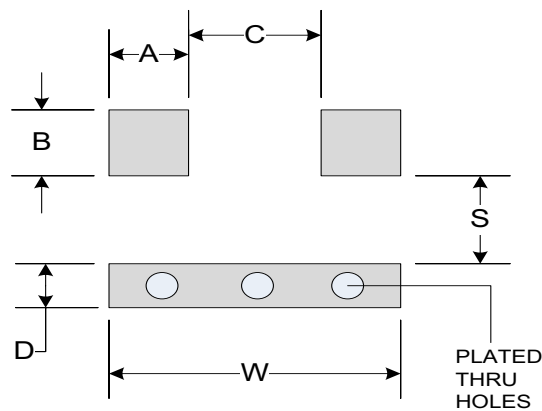
## SPL-TVAXX00NOXW3 - Triple Wrap Option



\*Dimensions apply before solder, allow 0.015" max for all pretinned surfaces  
 Unless otherwise specified, tolerance: X.XXX = ±0.005"

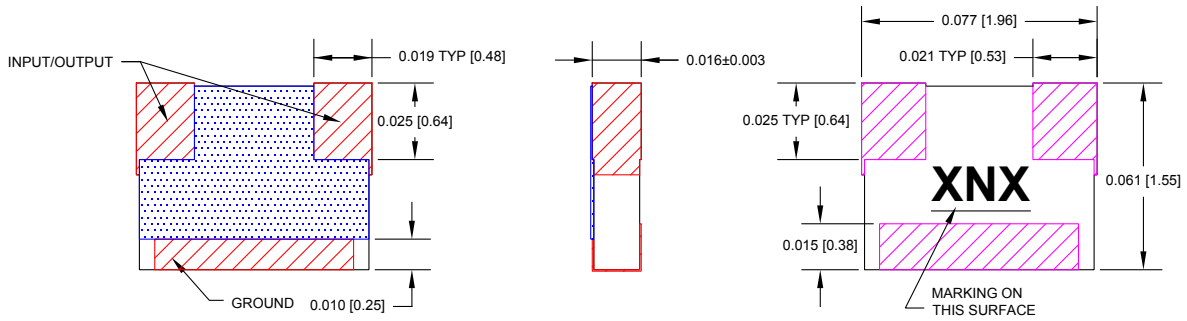
# Suggested Mounting Footprint

Part Number	Inches						MM					
	A	B	C	D	S	W	A	B	C	D	S	W
SPL-TVAXX00NOXW3	0.043	0.063	0.067	0.035	0.032	0.152	1.09	1.60	1.70	0.89	0.81	3.86



# Mechanical

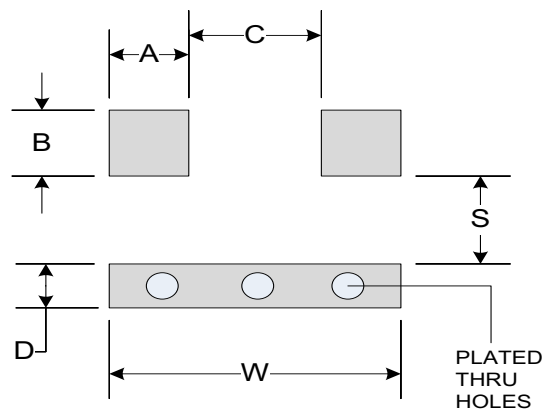
## SPL-MTVAXX00N0XW3 - Triple Wrap Option



\*Dimensions apply before solder, allow 0.015" max for all pretinned surfaces  
 Unless otherwise specified, tolerance: X.XXX = ±0.005"

# Suggested Mounting Footprint

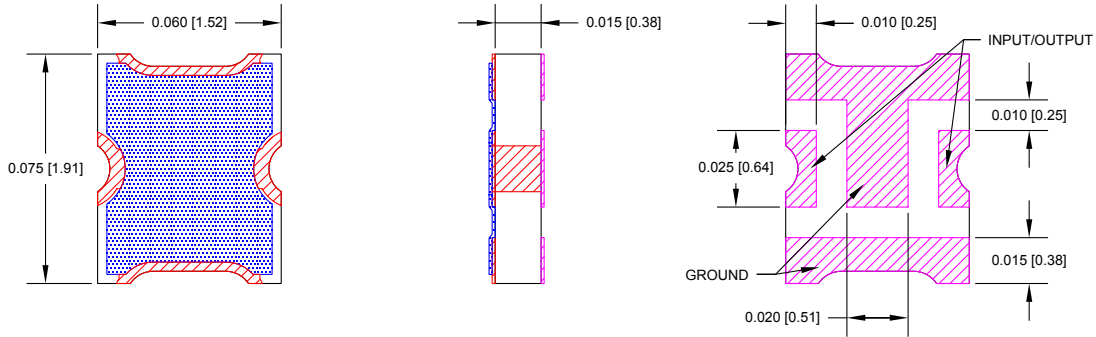
Part Number	Inches						MM					
	A	B	C	D	S	W	A	B	C	D	S	W
SPL-MTVAXX00N0XW3	0.043	0.064	0.067	0.023	0.041	0.150	1.09	1.63	1.70	0.58	1.04	3.81





# Mechanical

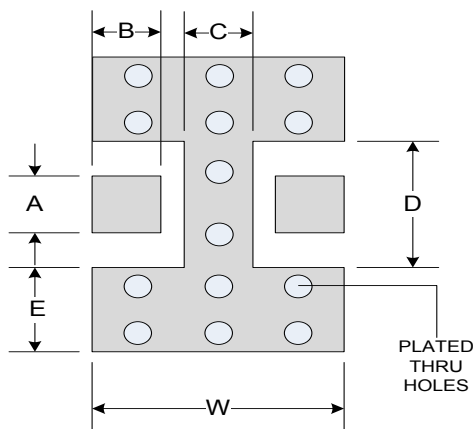
## SPL-WTVAXX00N0XSMTS - Surface Mount Option



\*Dimensions apply before solder, allow 0.015" max for all pretinned surfaces  
 Unless otherwise specified, tolerance: X.XXX = ±0.005"

# Suggested Mounting Footprint

Part Number	Inches						MM					
	A	B	C	D	S	W	A	B	C	D	S	W
SPL-WTVAXX00N0XSMTS	0.025	0.015	0.016	0.049	0.018	0.070	0.64	0.38	0.41	1.24	0.46	1.78



# SPL Series Attenuators and Thermopads

*Test Parameters per Test Plan TP-8965*

Test	Sample Qty	Test Standard and Method	Test Condition
Pre-Cap Visual and Mechanical	100%	MIL-PRF-55342	30X to 60X Magnification
<b>100% Inspection</b>			
Visual / Mechanical	100%	MIL-PRF-55342	30X to 60X Magnification
Electrical (RF) Inspection	100%	MIL-PRF-55342	VSWR @1.0 GHz and Attenuation @ DC & 1.0 GHz - Limits per datasheet and dB Value
Subgroup 1 [TVA product only]	3		
Temperature Coefficient of Attenuation TCA (If Temp Variable Product)	3	Per Smiths Interconnect TP-8965	-55°C to +125°C - ±0.001 dB/dB/°C allowable

**NOTE:** Grp A, B, & C similarity test data provided with each lot / date code per Smiths work instruction 824W199.

## Products Test Capabilities

### Stability of Attenuation After:

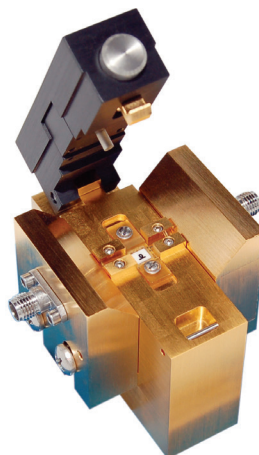
- Temperature Change
- Thermal Shock
- Vibration
- Shock
- Moisture Resistance
- Peak Power
- Salt Spray

### Sensitivity of Attenuation After:

- Change in Input Power
- Change in Frequency
- Change in Temperature

### Additional Test Capabilities:

- Vibration and Shock Testing
- Moisture Resistance
- Peak Power
- Salt Spray
- Barometric Pressure
- Outgassing
- Endurance
- Resistance to Bonding Exposure
- Low Temperature Operation
- Short Term Overload
- High Temperature Exposure
- Solderable Mounting Integrity
- Bondable Mounting Integrity
- Resistance to Solvents
- Gross and Fine Leak Detection
- Radiographic Inspection
- First Article Inspection
- Pre-Cap Inspection
- Source Inspection
- Additional testing services available upon request



# How To Order

Specify Model Number: **SPL Fixed Attenuators SPL-TS0XXXXXX**

	S P L	T S 0		
	1	2	3	4
<b>1 Series Name</b>	S P L SPL Series			
<b>2 Series Type</b>	T S 0 TS03, TS05 or TS09			
<b>3 Attenuation Value</b>	0 0 00 dB through	2 0 20 dB TS03, TS05	0 0 00 dB through	1 0 10 dB TS09
<b>4 Options</b>	W 3 Triple Wrap	S M T S Surface Mount Solder		

# How To Order

Specify Model Number: **SPL Thermopads SPL-XXXXXX00N0XXXXX**

	S P L		0	0 0	N	0	
	1	2	3	4	5	6	7
<b>1 Series Name</b>	S P L SPL Series						
<b>2 Series Type</b>	T V A TVA	M T V A MTVA or	W T V A WTVA				
<b>3 Attenuation Value</b>	0 1 01 dB through	0 9 09 dB					
<b>4 EMC Code</b>	0 0 EMC Code						
<b>5 TCA Shift</b>	N Negative						
<b>6 TCA Slope</b> (dB/dB/°C)	0 3 03=0.003	0 4 04=0.004	0 5 05=0.005				
	0 6 06=0.006	0 7 07=0.007	0 9 09=0.009				
<b>7 Options</b>	W 3 Triple Wrap	S M T S Surface Mount Solder					

# Worldwide Support

## Connectors

### Americas

#### Sales

connectors.uscsr@smithsinterconnect.com

#### Technical Support

connectors.ustechsupport@smithsinterconnect.com

### Europe

#### Sales

connectors.emeacsr@smithsinterconnect.com

#### Technical Support

connectors.emeatechsupport@smithsinterconnect.com

### Asia

#### Sales

asiacsr@smithsinterconnect.com

#### Technical Support

asiatechsupport@smithsinterconnect.com

## Fibre Optics & RF Components

### Americas

#### Sales

focom.uscsr@smithsinterconnect.com

#### Technical Support

focom.techsupport@smithsinterconnect.com

### Europe

#### Sales

focom.emeacsr@smithsinterconnect.com

#### Technical Support

focom.techsupport@smithsinterconnect.com

### Asia

#### Sales

focom.asiacsr@smithsinterconnect.com

#### Technical Support

focom.techsupport@smithsinterconnect.com

## Semiconductor Test

### Americas

#### Sales

semi.uscsr@smithsinterconnect.com

#### Technical Support

semi.techsupport@smithsinterconnect.com

### Europe

#### Sales

semi.emeacsr@smithsinterconnect.com

#### Technical Support

semi.techsupport@smithsinterconnect.com

### Asia

#### Sales

semi.asiacsr@smithsinterconnect.com

#### Technical Support

semi.techsupport@smithsinterconnect.com

## RF/MW Subsystems

### Americas, Europe & Asia

#### Sales

subsystems.csr@smithsinterconnect.com

#### Technical Support

subsystems.techsupport@smithsinterconnect.com

## Connecting Global Markets

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