

# SPECIFICATION HISTORY LIST

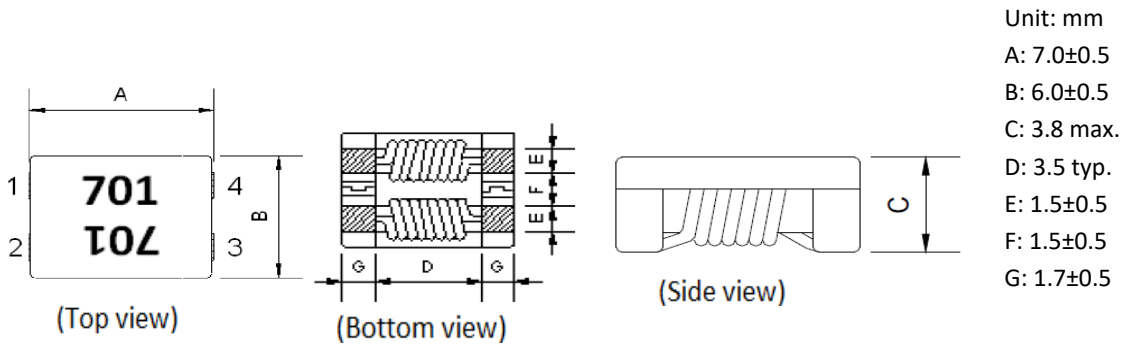
<b>PROD. NAME</b>	Wire Wound Power Common Mode Filter	<b>PART NO.</b>	SRF7038A SERIES
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REV.	DATE	DESCRIPTION	APPROVED	CHECKED	DRAWN
A	12/31/2019	Released	楊祥忠	羅敏汎	何玉蓮

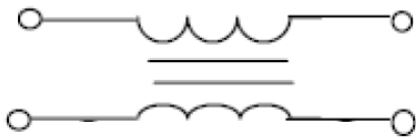
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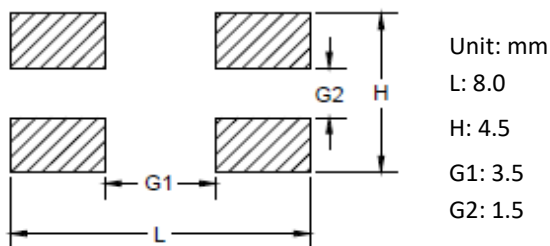
## I. CONFIGURATION & DIMENSIONS :



## II. SCHEMATIC DIAGRAM:

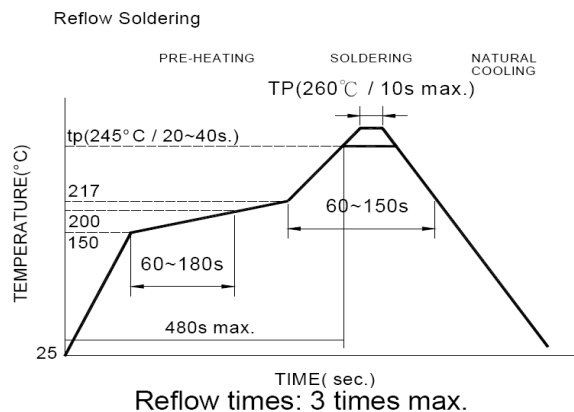


## III. RECOMMENDED PAD LAYOUT:



## IV. GENERAL SPECIFICATION :

- a. Operating temperature: -40~+125°C (Including self - temperature rise)
- b. Storage temperature: -40~+125°C (on board)
- c. Qualification to AEC-Q200



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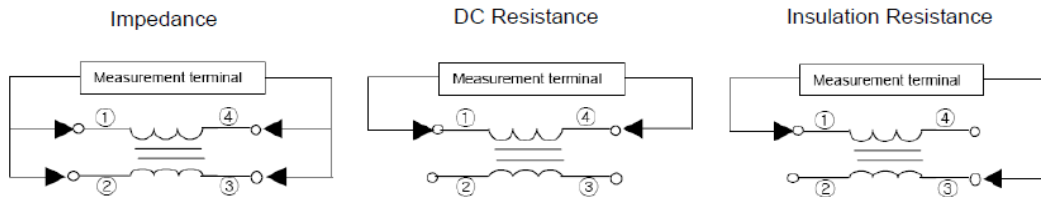
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**V. ELECTRICAL CHARACTERISTICS :**

PART NO.	Impedance ( $\Omega$ )		DC Resistance (m $\Omega$ ) max. (1 line)	Rated Current (A) max.	Rated Volt. (Vdc) max.	Insulation Resistance (M $\Omega$ ) min.
	min.	typ.				
SRF7038A-400Y	40	70	5	15	80	10
SRF7038A-650Y	65	100	5	14	80	10
SRF7038A-101Y	100	140	10	9	80	10
SRF7038A-301Y	225	300	10	5	80	10
SRF7038A-501Y	400	500	10	5	80	10
SRF7038A-701Y	500	700	15	4	80	10
SRF7038A-102Y	800	1020	17	3	80	10
SRF7038A-132Y	910	1300	20	3	80	10

**Note:**

1. Test frequency: 100MHz
2. All test data referenced to 25°C ambient.
3. Rated Current:  $\Delta T$  40°CMax

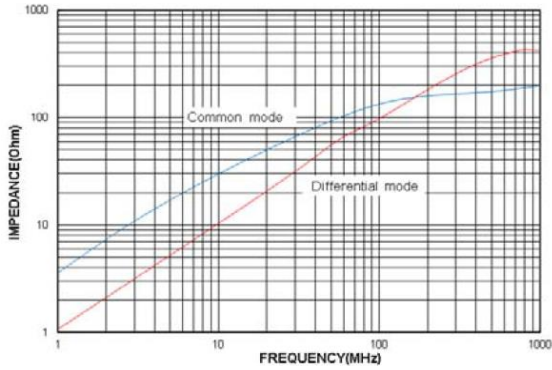


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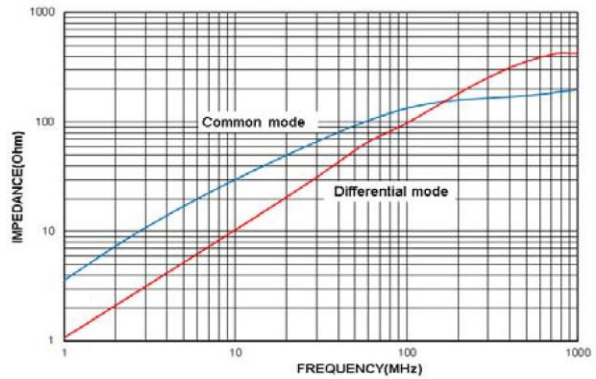
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		<b>REF</b>	12/31/2019

**VI. TYPICAL PERFORMANCE CURVES :**

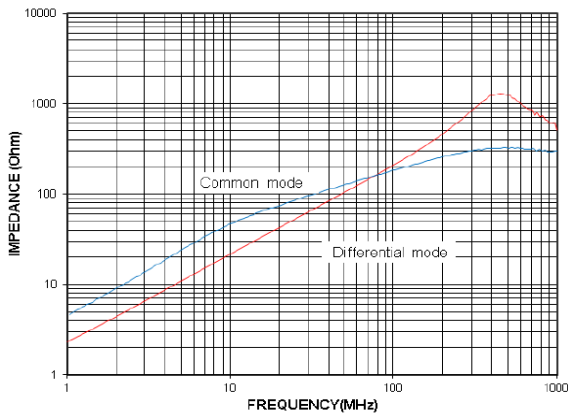
SRF7038A-400Y



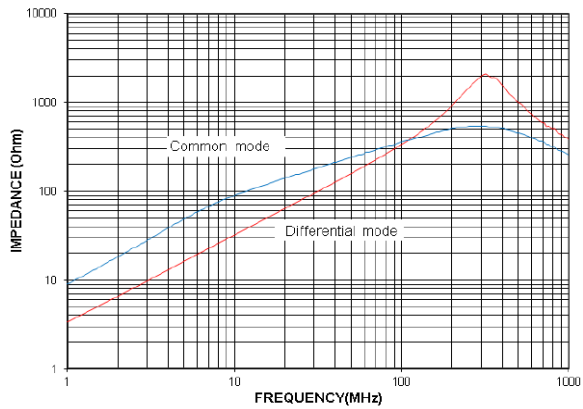
SRF7038A-650Y



SRF7038A-101Y



SRF7038A-301Y

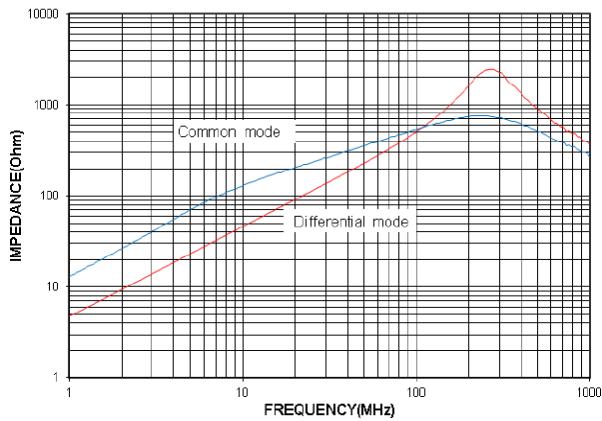


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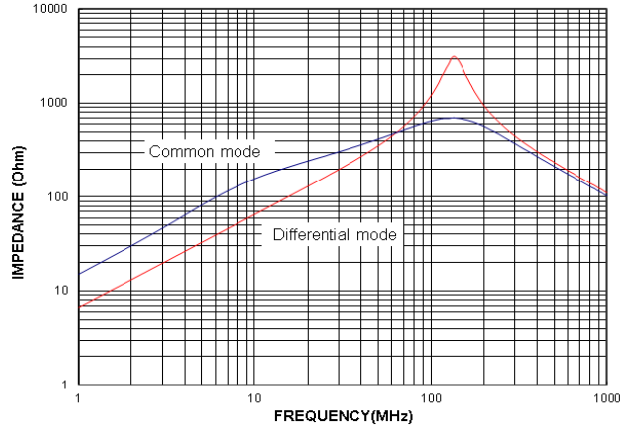
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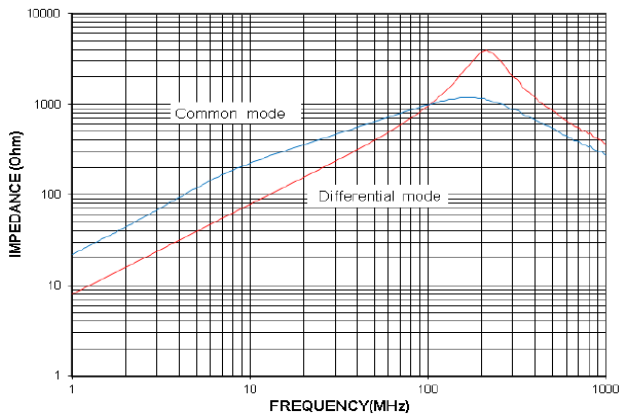
SRF7038A-501Y



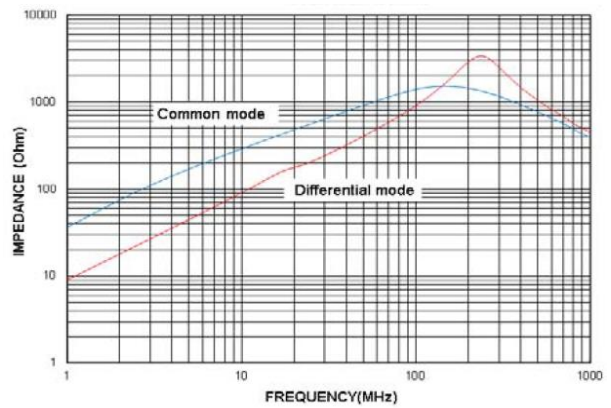
SRF7038A-701Y



SRF7038A-102Y



SRF7038A-132Y

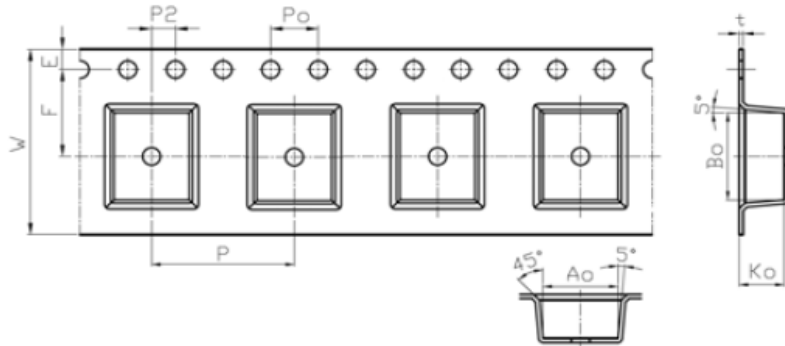


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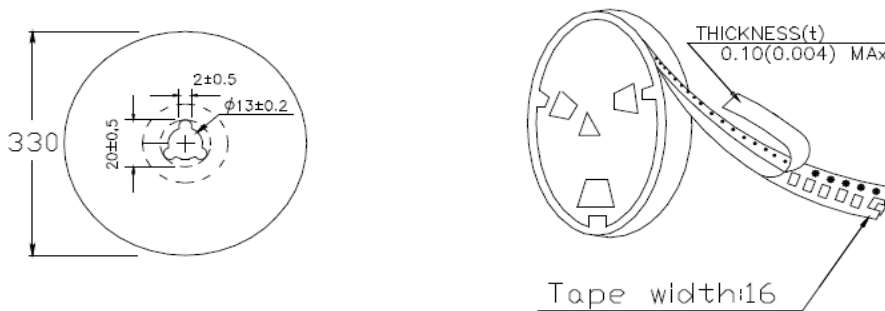
## VII. PACKAGING INFORMATION

### (1) Tape dimensions

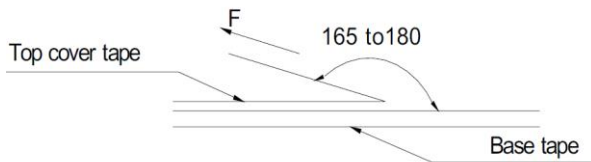


W(mm)	Bo(mm)	Ao(mm)	Ko(mm)	P0(mm)	P2(mm)	F(mm)	E(mm)	P(mm)	t(mm)
16.00±0.3/-0.1	7.50±0.1	6.3±0.1	3.8±0.1	4.0±0.1	2.0±0.1	7.5±0.1	1.75±0.1	12.0±0.1	0.35±0.05

### (2) Reel dimensions



### (3) Tearing Off Force



The force for tearing off cover tape is 15 to 80 grams in the arrow direction under the following conditions.

Room Temp. (°C)	Room Humidity (%)	Room atm (hPa)	Tearing Speed mm/min
5~35	45~85	860~1060	300

### (4) Packaging Quantity

Reel	1500
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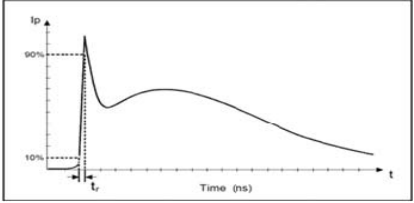
**VIII. RELIABILITY TEST :**

Test item	Specification and Requirement	Test Conditions															
High Temperature Exposure(Storage) AEC-Q200	Appearance: No damage. Impedance: within $\pm 15\%$ of initial value Inductance: within $\pm 10\%$ of initial value Q: Shall not exceed the specification value. RDC: within $\pm 15\%$ of initial value and shall not exceed the specification value	Preconditioning: Run through IR reflow for 2 times. (IPC/JEDEC J-STD-020D Classification Reflow Profiles) Temperature: $125\pm 2^\circ\text{C}$ Duration: 1000hrs Min. Measured at room temperature after placing for $24\pm 2$ hrs															
Temperature Cycling AEC-Q200		Preconditioning: Run through IR reflow for 2 times. (IPC/JEDEC J-STD-020D Classification Reflow Profiles) Condition for 1 cycle Step1: $-40\pm 2^\circ\text{C}$ , 30min Min. Step2: $125\pm 2^\circ\text{C}$ , transition time 1min MAX. Step3: $125\pm 2^\circ\text{C}$ , 30min Min. Step4: Low temp. transition time 1min MAX. Number of cycles: 1000 Measured at room temperature after placing for $24\pm 2$ hrs															
Moisture Resistance		Preconditioning: Run through IR reflow for 2 times. (IPC/JEDEC J-STD-020D Classification Reflow Profiles) 1. Baked at $50^\circ\text{C}$ for 25hrs, measured at room temperature after placing for 4 hrs. 2. Raise temperature to $65\pm 2^\circ\text{C}$ , 90-100%RH in 2.5hrs, and keep 3 hours, cool down to $25^\circ\text{C}$ in 2.5hrs. 3. Raise temperature to $65\pm 2^\circ\text{C}$ , 90-100%RH in 2.5hrs, and keep 3 hours, cool down to $25^\circ\text{C}$ in 2.5hrs, keep at $25^\circ\text{C}$ for 2hrs then keep at $-10^\circ\text{C}$ for 3hrs 4. Keep at $25^\circ\text{C}$ , 80-100%RH for 15min and vibrate at the frequency of 10 to 55Hz to 10Hz, measure at room temperature after placing for 1 to 2 hrs.															
Biased Humidity (AEC-Q200)		Preconditioning: Run through IR reflow for 2 times. (IPC/JEDEC J-STD-020D Classification Reflow Profiles) Humidity: $85\pm 3\%$ R.H. Temperature: $85^\circ\text{C}\pm 2^\circ\text{C}$ Duration: 1000hrs Min with 100% rated current. Measured at room temperature after placing for $24\pm 2$ hrs															
High Temperature Operational Life (AEC-Q200)		Preconditioning: Run through IR reflow for 2 times. (IPC/JEDEC J-STD-020D Classification Reflow Profiles) Temperature: $155\pm 2^\circ\text{C}$ (Inductor) Duration: 1000hrs Min. with 100% rated current. Measured at room temperature after placing for $24\pm 2$ hrs															
External Visual		Appearance: No damage.	Inspect device construction, marking and workmanship. Electrical Test not required.														
Physical Dimension	According to the product specification size measurement	According to the product specification size measurement															
Resistance to Solvents	Appearance: No damage.	Add aqueous wash chemical - OKEM clean or equivalent.															
Physical Dimension	According to the product specification size measurement	According to the product specification size measurement															
Mechanical Shock	Appearance: No damage. Impedance: within $\pm 15\%$ of initial value Inductance: within $\pm 10\%$ of initial value Q: Shall not exceed the specification value. RDC: within $\pm 15\%$ of initial value and shall not exceed the specification value	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Type</th> <th>Peak value (g's)</th> <th>Normal duration (D) (ms)</th> <th>Wave form</th> <th>Velocity change (V)/ft/sec</th> </tr> </thead> <tbody> <tr> <td>SMD</td> <td>100</td> <td>6</td> <td>Half-sine</td> <td>12.3</td> </tr> <tr> <td>Lead</td> <td>100</td> <td>6</td> <td>Half-sine</td> <td>12.3</td> </tr> </tbody> </table> shocks in each direction along 3 perpendicular axes.	Type	Peak value (g's)	Normal duration (D) (ms)	Wave form	Velocity change (V)/ft/sec	SMD	100	6	Half-sine	12.3	Lead	100	6	Half-sine	12.3
Type	Peak value (g's)	Normal duration (D) (ms)	Wave form	Velocity change (V)/ft/sec													
SMD	100	6	Half-sine	12.3													
Lead	100	6	Half-sine	12.3													

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**VIII. RELIABILITY TEST :**

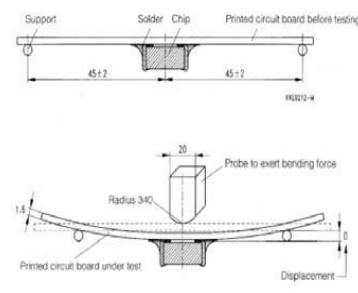
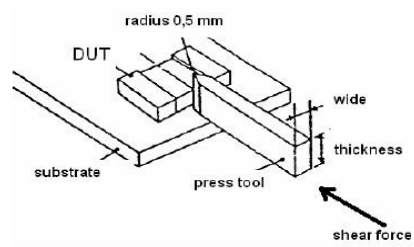
Test item	Specification and Requirement	Test Conditions								
Vibration		(IPC/JEDEC J-STD-020D Classification Reflow Profiles) Oscillation Frequency: 10 ~ 2k ~ 10Hz for 20 minute Equipment: Vibration checker Total Amplitude: 1.52mm±10% Testing Time: 12 hours(20 minutes, 12 cycles each of 3 orientations) *								
Resistance to Soldering Heat	Appearance: No damage. Impedance: within ±15% of initial value Inductance: within ±10% of initial value Q: Shall not exceed the specification value. RDC: within ±15% of initial value and shall not exceed the specification value	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 25%;">Temperature(°C)</th> <th style="width: 15%;">Time(s)</th> <th style="width: 25%;">Temperature ramp/immersion and emersion rate</th> <th style="width: 35%;">Number of heat cycles</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">260±5(soldertemp)</td> <td style="text-align: center;">10±1</td> <td style="text-align: center;">25mm/s ±6 mm/s</td> <td style="text-align: center;">1</td> </tr> </tbody> </table>	Temperature(°C)	Time(s)	Temperature ramp/immersion and emersion rate	Number of heat cycles	260±5(soldertemp)	10±1	25mm/s ±6 mm/s	1
Temperature(°C)	Time(s)	Temperature ramp/immersion and emersion rate	Number of heat cycles							
260±5(soldertemp)	10±1	25mm/s ±6 mm/s	1							
Thermal shock (AEC-Q200)		Preconditioning: Run through IR reflow for 2 times. (IPC/JEDEC J-STD-020D Classification Reflow Profiles) Condition for 1 cycle Step1: -40±2°C, 15±1min Step2: 125±2°C, within 20Sec. Step3: 125±2°C, 15±1min Number of cycles: 300 Measured at room temperature after placing fo24±2hrs								
ESD	Appearance: No damage.									
Solderability	More than 95% of the terminal electrode should be covered with solder *	Steam Aging: 16 hours ± 15 min Preheat: 150°C, 60sec. Solder: Sn96.5% Ag3% Cu0. 5% Temperature: 245±5°C * Flux for lead free: Rosin. 9.5% * Dip time: 4±1sec. Depth: completely cover the termination								
Electrical Characterization	Refer Specification for Approval	Summary to show Min, Max, Mean and Standard deviation .								
Flammability	Electrical Test not required.	V-0 or V-1 are acceptable.								



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**VIII. RELIABILITY TEST :**

Test item	Specification and Requirement	Test Conditions
Board Flex	Appearance: No damage	<p>Preconditioning: Run through IR reflow for 2 times. (IPC/JEDEC J-STD-020D Classification Reflow Profiles) Place the 100mm X 40mm board into a fixture similar to the one shown in below Figure with the component facing down. The apparatus shall consist of mechanical means to apply a force which will bend the board (D) x = 2 mm minimum. The duration of the applied forces shall be 60 (+ 5) sec. The force is to be applied only once to the board.</p> 
Terminal Strength(SMD)		<p>Preconditioning: Run through IR reflow for 2 times. (IPC/JEDEC J-STD-020D Classification Reflow Profiles) With the component mounted on a PCB with the device to be tested, apply a 17.7N (1.8 Kg) force to the side of a device being tested. This force shall be applied for 60 +1 seconds. Also the force shall be applied gradually as not to apply a shock to the component being tested.</p> 

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