TRIMMER CAPACITORS
Standard, Non-Magnetic, SMD

EXXELIA

SMD THIN CERAMIC TRIMMER CAPACITORS AT 9401G RoHS SERIES

RoHS Compliant

DESCRIPTION

Miniaturized trimmers

Performance up to 2 GHz and beyond
Very small size and weight
Ceramic dielectric
Rated voltage 250 V_{DC}
Low capacitance drift, very stable over time
Extremely low ERS and ESL
High resonance frequency and very good Q
Terminations are **gold plated**
Delivered on tape and reel (SL1 version)
RoHS compliant
Max Soldering Temperature 260°C, 10s Max

APPLICATIONS

RF amplifier, Filter networks
Military and Avionics equipment
Medical devices
DR/Crystal Oscillators
Broadband wireless LAN, Antenna tuning
Telemetry

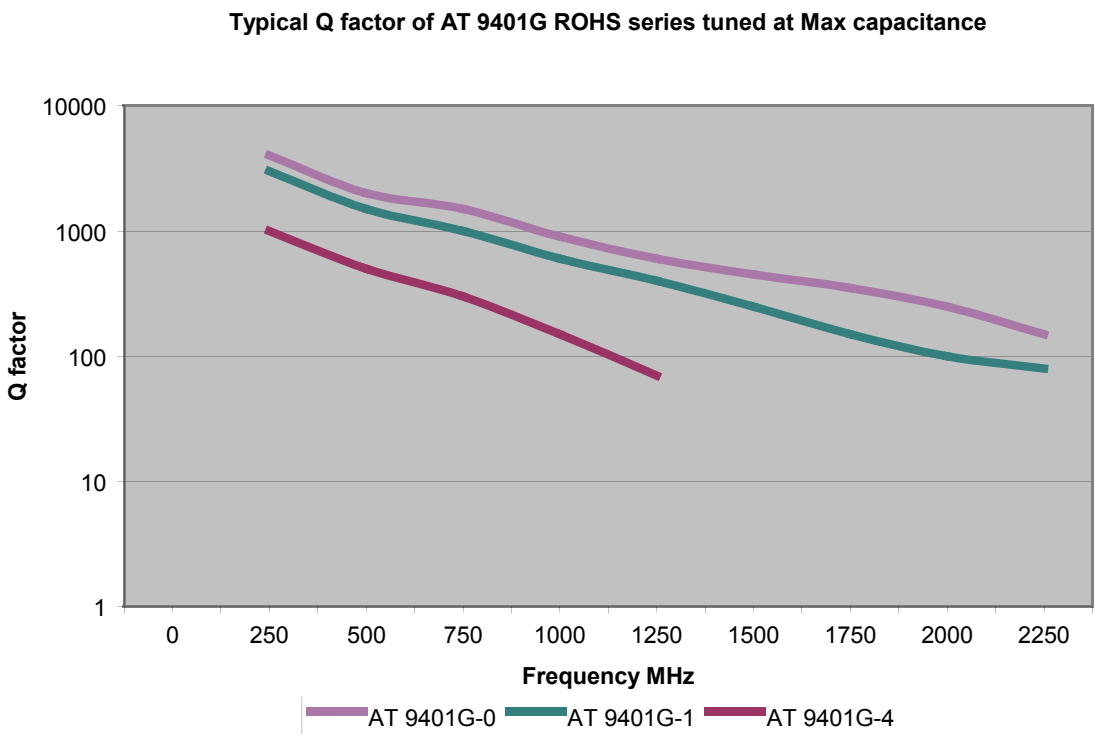
I. ELECTRICAL SPECIFICATIONS

Designation	AT 9401G-0 RoHS AT 9401G-0 SL1 RoHS	AT 9401G-1 RoHS AT 9401G-1 SL1RoHS	AT 9401G-2 RoHS AT 9401G-2 SL1 RoHS	AT 9401G-4 RoHS AT 9401G-4 SL1 RoHS
Capacitance range (pF)	0.25 => 0.7	0.5 => 1.3	0.6 => 2.0	1.5 => 4.0
Working Voltage (V_{DC})	250			
Withstanding Voltage (V_{DC})	500			
Working Temp. range	-55°C to +125°C			
Temp. Coeff. (ppm/°C)	50 ±50	NPO ±100	-400 ±200	-1100 ±300
Setting drift	< 1%			
Typical Q @ 100 MHz, CMax	>1000	>1000	>1000	>500
Insulation Resistance (MΩ)	10000 min			

RoHS Compliant

SMD THIN CERAMIC TRIMMER CAPACITORS AT 9401G RoHS SERIES

II. TYPICAL Q FACTOR



III. MECHANICAL AND GENERAL SPECIFICATIONS

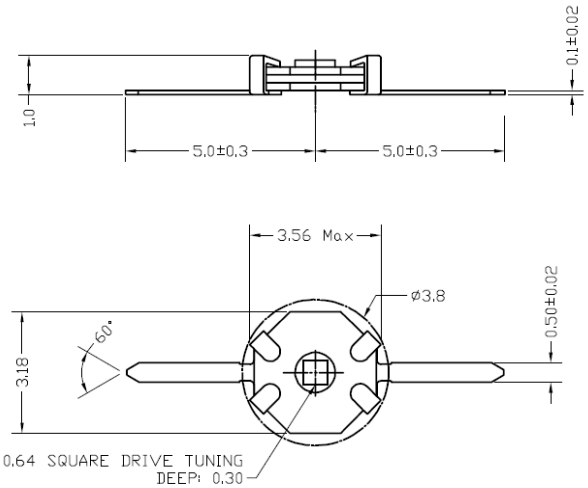
Designation	AT 9401G-0 RoHS AT 9401G-0 SL1 RoHS	AT 9401G-1 RoHS AT 9401G-1 SL1 RoHS	AT 9401G-2 RoHS AT 9401G-2 SL1 RoHS	AT 9401G-4 RoHS AT 9401G-4 SL1RoHS
Rotating torque (cN.cm)	5 to 70			
Shock	100g @ 6 ms			
Vibration	15g @ 10-2000 Hz			
Moisture resistance	MIL-STD-202, Method 106			

SMD THIN CERAMIC TRIMMER CAPACITORS AT 9401G RoHS SERIES

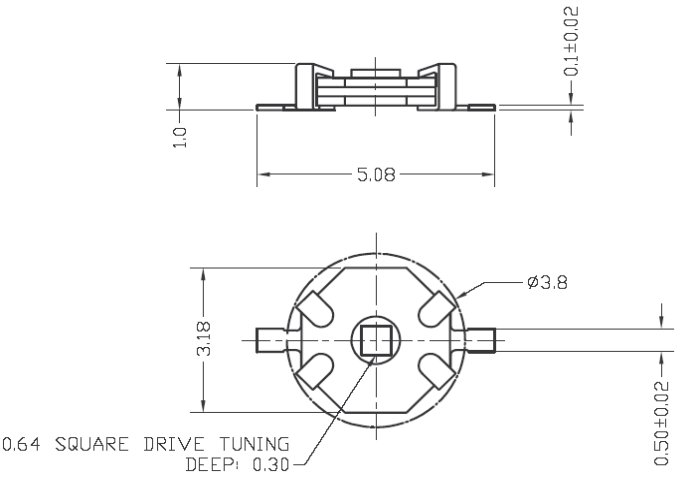
RoHS Compliant

IV. OUTLINE DIMENSIONS

Standard model

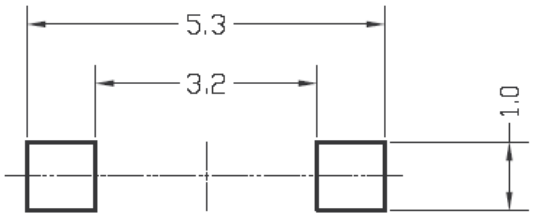


SL1 model



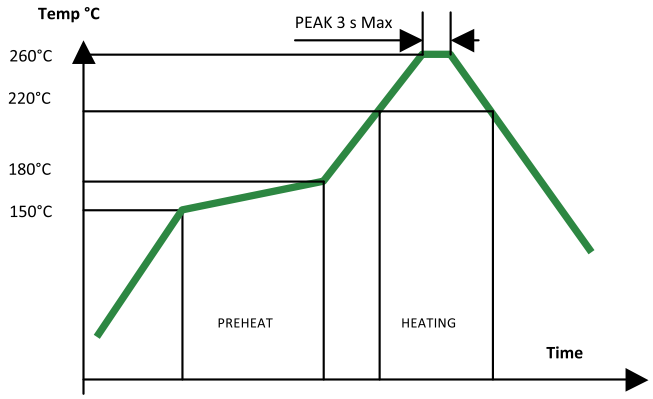
V. SOLDERING

Typical solder pad layout for SL1 model



Recommended reflow solder temperature profile

Maximum Soldering Temperature 260°C MAX



RoHS Compliant

SMD THIN CERAMIC TRIMMER CAPACITORS AT 9401G RoHS SERIES

VI. PACKAGING

Parts delivered :

Standard model: in bulk
SL1 model: in bulk for quantity lower than 1500 pcs
on tape and reel in 12 mm width carrier tape in quantities of 1500 pcs on 7 inches reel

VII. HOW TO ORDER

Standard model and SL1 model in qty < 1500 pcs

Examples

Designation	RoHS
AT 9401G-1	RoHS
AT 9401G-0 SL1	RoHS

SL1 model on tape and reel:

Example

Designation	R3	RoHS
AT 9401G-4 SL1	**R3**	RoHS

Qty 1500 pcs

VIII. TUNING TOOL

Tuning Tool reference: AT 4192

IX. RECOMMENDATION FOR CLEANING

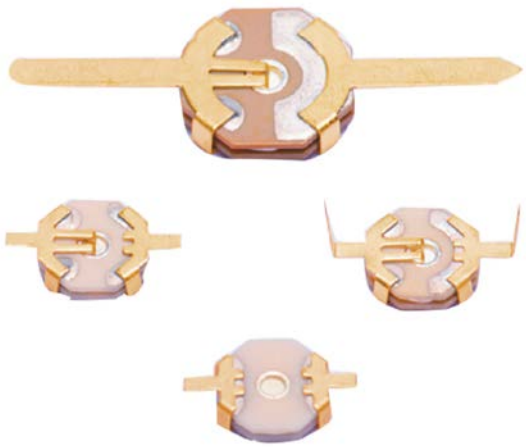
SMD Thin AT 9401G RoHS series are compatible with a wide variety of cleaning process including those that utilize aqueous or semi-aqueous solutions, alcohol solutions, de-ionized water and numerous other cleaners. However, due to the large variety of such processes, the customer through cleaning process evaluation in conjunction with **EXXELIA** product purchased must determine actual compatibility. SMD Thin AT 9401G RoHS series capacitors should be cleaned in contamination free solution. If rough torque occurs after cleaning, re-clean in fresh solution.

SMD THIN CERAMIC TRIMMER CAPACITORS AT 9402G & AT 9410G SERIES

RoHS Compliant

DESCRIPTION

Miniaturized trimmers
Thin profile
Very small size and weight
Ceramic dielectric
Rated voltage 250 V_{DC}
Low capacitance drift, very stable over time
Very good Q
Terminations are **gold plated**
Delivered on tape and reel (SL1 version)
RoHS compliant
Non magnetic models
Max Soldering Temperature 260°C, 10s Max



APPLICATIONS

RF amplifier, Filter networks
DR/Crystal Oscillators
Military and Avionics equipment
Broadband wireless LAN, Antenna tuning
Medical devices
Telemetry

I. ELECTRICAL SPECIFICATIONS

I.1 AT 9402G RoHS series

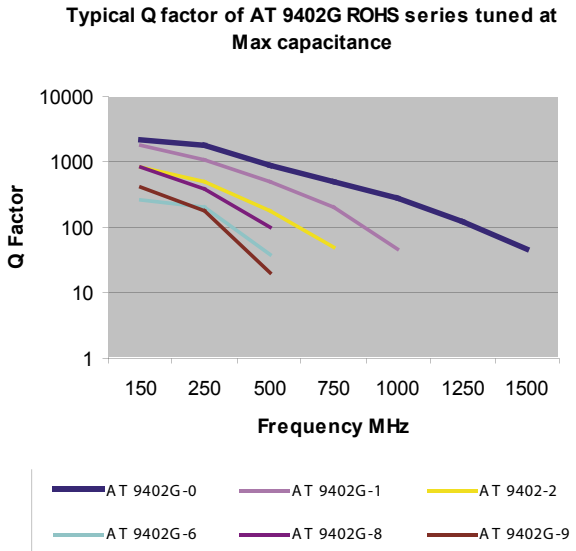
Designation	AT 9402G-0 RoHS AT 9402G-0 SL1 RoHS	AT 9402G-1 RoHS AT 9402G-1 SL1 RoHS	AT 9402G-2 RoHS AT 9402G-2 SL1 RoHS	AT 9402G-4 RoHS AT 9402G-4 SL1 RoHS	AT 9402G-6 RoHS AT 9402G-6 SL1 RoHS	AT 9402G-8 RoHS AT 9402G-8 SL1 RoHS	AT 9402G-9 RoHS AT 9402G-9 SL1 RoHS
From below Capacitance range (pF)	0.5	1.0	2.5	3.0	8.0	5.0	7.0
To above	2.5	5.0	10.0	12.0	25.0	15.0	18.0
Working Voltage (V_{DC})	250 V_{DC}						
Test Voltage (V_{DC})	500 V_{DC}						
Working Temp. range	-55°C to +125°C						
Temp. Coeff. (ppm/°C)	100 ±100	100 ±200	-50 ±100	-1100 ±300	-1100 ±300	-300 ±300	-450 ±300
Setting drift	< 1%						
Typical Q@100 MHz,CMax	3000	1000	1000	500	300	750	500
Insulation Resistance (MΩ)	10000 min						

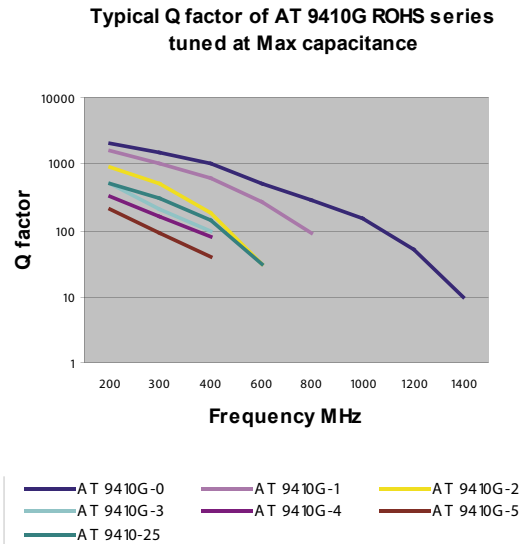
RoHS Compliant

SMD THIN CERAMIC TRIMMER CAPACITORS AT 9402G & AT 9410G SERIES

II. AT 9410G ROHS SERIES

Designation	AT 9410G-0 RoHS AT 9410G-0 SL1 RoHS	AT 9410G-1 RoHS AT 9410G-1 SL1 RoHS	AT 9410G-2 RoHS AT 9410G-2 SL1 RoHS	AT 9410G-3 RoHS AT 9410G-3 SL1 RoHS	AT 9410G-4 RoHS AT 9410G-4 SL1 RoHS	AT 9410G-5 RoHS AT 9410G-5 SL1 RoHS	AT 9410G-25 RoHS AT 9410G-25 SL1 RoHS
From below Capacitance range (pF) To above	1.0 4.5	2.5 10.0	4.0 18.0	6.0 35.0	7.0 40.0	10.0 50.0	5.0 25.0
Working Voltage (V_{DC})	250 V_{DC}						
Test Voltage (V_{DC})	500 V_{DC}						
Working Temp. range	-55°C to +125°C						
Temp. Coeff. (ppm/°C)	50±50	-100±200	-400±200	-1100±300	-1100±300	-1500±500	NPO±150
Setting drift	< 1%						
Typical Q@100 MHz,CMax	1000	1000	700	200	200	200	200
Insulation Resistance (MΩ)	10000 min						





III. MECHANICAL AND GENERAL SPECIFICATIONS

Designation	AT 9402G RoHS Series	AT 9410G RoHS Series
Rotating torque (cN.cm)	5 to 70	14 to 140
Shock	100 g @ 6ms	
Vibration	15 g @ 10-200 Hz	
Moisture resistance	MIL-STD-202, Method 106	

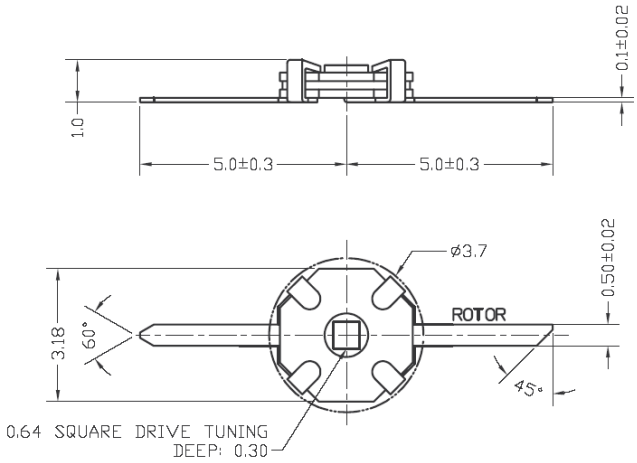
SMD THIN CERAMIC TRIMMER CAPACITORS AT 9402G & AT 9410G SERIES

RoHS Compliant

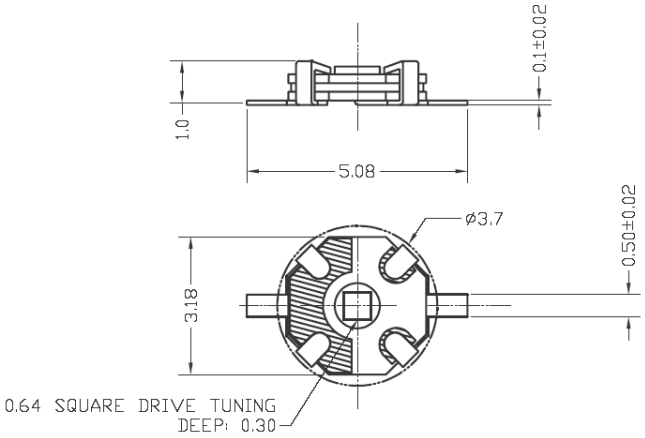
IV. OUTLINE DIMENSIONS

IV-1. AT 9402G series

Standard model

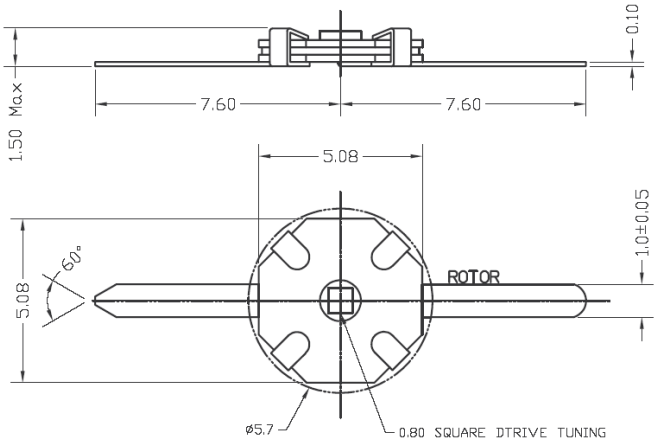


SL1 model

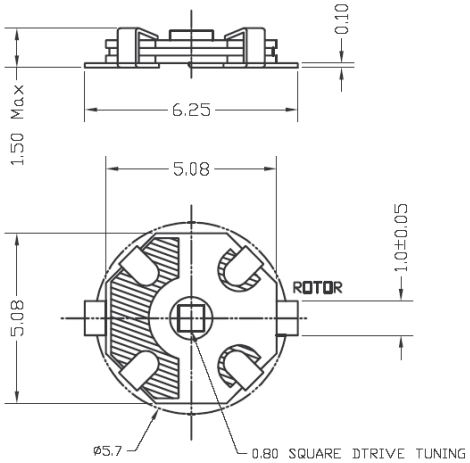


IV-1. AT 9410G SERIES

Standard model

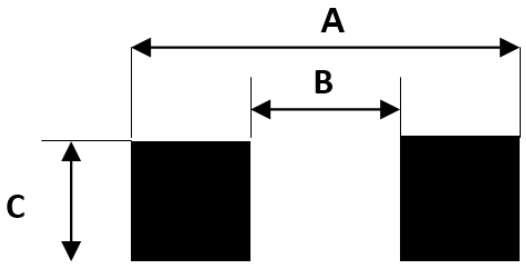


SL1 model



V. SOLDERING

Typical solder pad layout for SL1 model



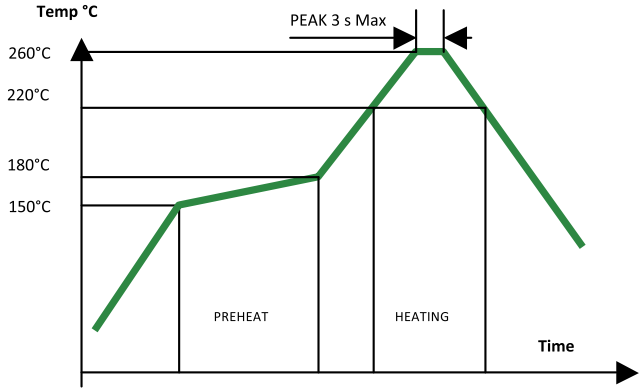
Dim in mm (inches)	AT 9402G SL1	AT 9410G SL1
A	5,3 (0,209)	6,6 (0,260)
B	3,2 (0,126)	5,3 (0,209)
C	1,0 (0,039)	1,5 (0,059)

RoHS Compliant

SMD THIN CERAMIC TRIMMER CAPACITORS AT 9402G & AT 9410G SERIES

Recommended reflow solder temperature profile

Maximum Soldering Temperature 260°C MAX



VI. PACKAGING

VI-1. AT 9402G series

Standard model: in bulk

SL1 model: in bulk for quantity lower than 1500 pcs

on tape and reel in 12 mm width carrier tape in quantities of 1500 pcs on 7 inches reel

VI-2. AT 9410G series

Standard model: in bulk

SL1 model: in bulk for quantity lower than 3000 pcs

on tape and reel in 24 mm width carrier tape in quantities of 3000 pcs on 13 inches reel

VII. HOW TO ORDER

Standard model and SL1 model in qty <1500 pcs for AT 9402G SL1 and qty < 3000 pcs for AT 9410G SL1

Examples

Designation	RoHS
AT 9402G-1	RoHS
AT 9410G-5 SL1	RoHS

AT 9402G SL1 model on tape and reel

Example for Qty 1500 pcs

Designation	R3	RoHS
AT 9402G-4 SL1	**R3**	RoHS

AT 9410G SL1 model on tape and reel

Example for Qty 3000 pcs

Designation	R7	RoHS
AT 9402G-4 SL1	**R7**	RoHS

VIII. TUNING TOOL

Tuning Tool reference: AT 4192 for AT 9402G series

AT 4193 for AT 9410G series

IX. RECOMMENDATIONS FOR CLEANING

SMD Thin AT 9402G RoHS and AT 9410G RoHS series are compatible with a wide variety of cleaning process including those that utilize aqueous or semi-aqueous solutions, alcohol solutions, de-ionized water and numerous other cleaners. However, due to the large variety of such processes, the customer through cleaning process evaluation in conjunction with **EXXELIA** product purchased must determine actual compatibility. SMD Thin AT 9401G RoHS and AT 9410G RoHS series capacitors should be cleaned in contamination free solution. If rough torque occurs after cleaning, re-clean in fresh solution.