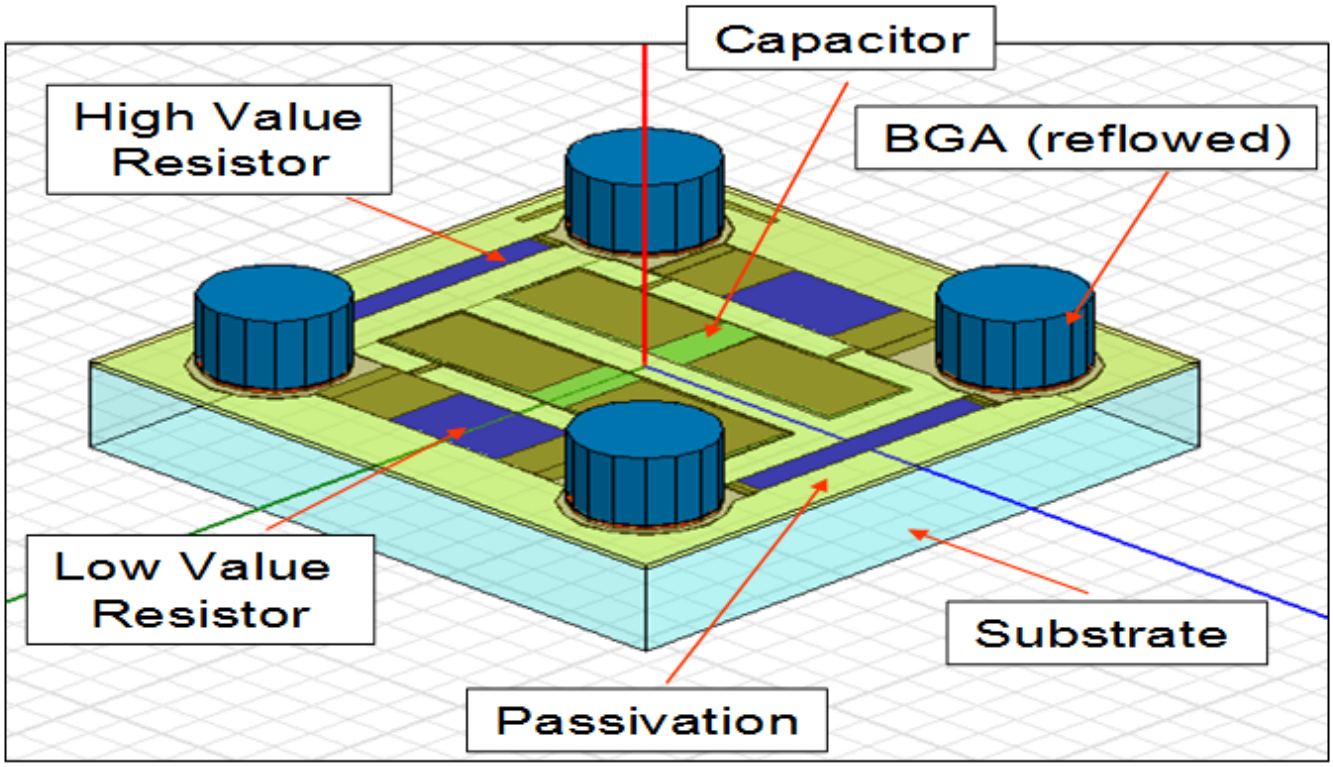
BGA RC Equalizer Specification
Revision 3.2

DESCRIPTION: Glass wafer based BGA RC Equalizer



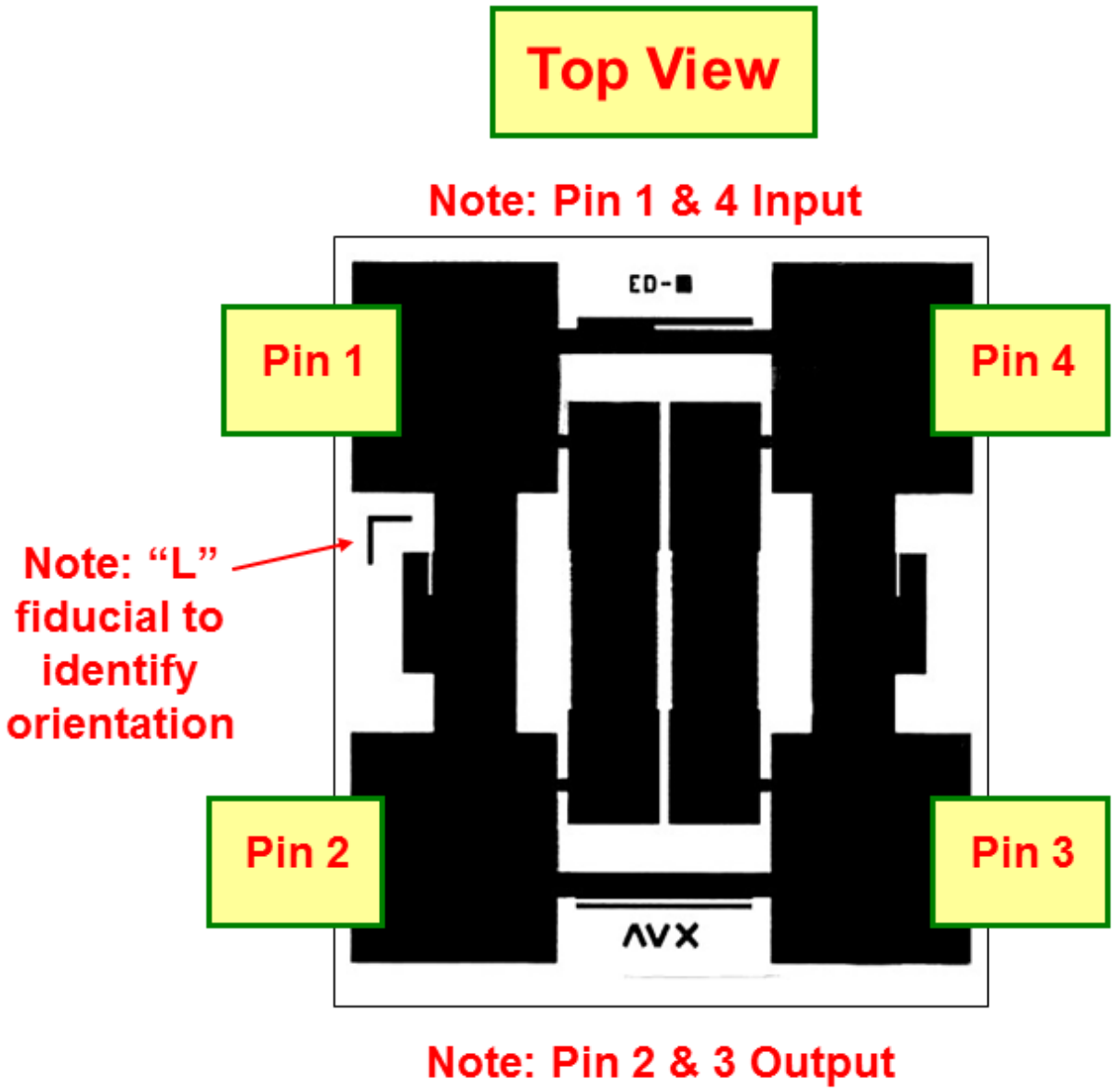
DEVICE DESCRIPTION:

FEATURE	DETAIL
Size	1.5 x 1.5 mm (length x width)
Substrate	Glass wafer, 150mm diameter
Dielectric	SiON, 0.54 to 1.4µm thick, cap dependent
Specific Capacitance	100pF / mm^2
Resistor	TaN, TCR - 50 to - 150ppm
Passivation	BCB, 5µm
Under Bump Metallurgy	Plated Copper, 12µm
Termination	BGA, PbSn Eutectic or Pb free

BGA RC Equalizer Specification
Revision 3.2

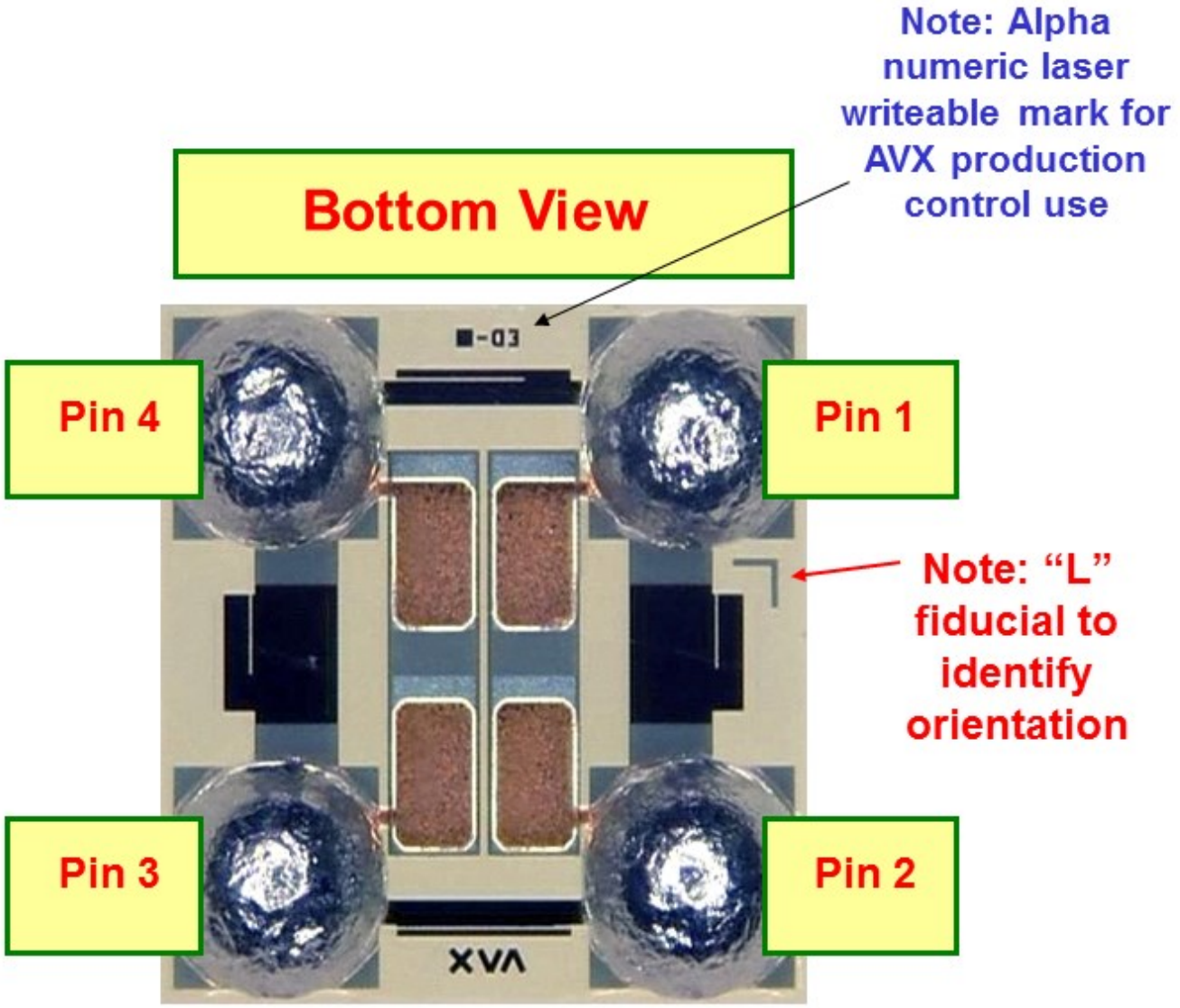
INPUT \ OUTPUT PIN ORIENTATION:

TOP VIEW LOOKING DOWN (MOUNTED PARTS): The 'L' fiducial identifies Pin 1.



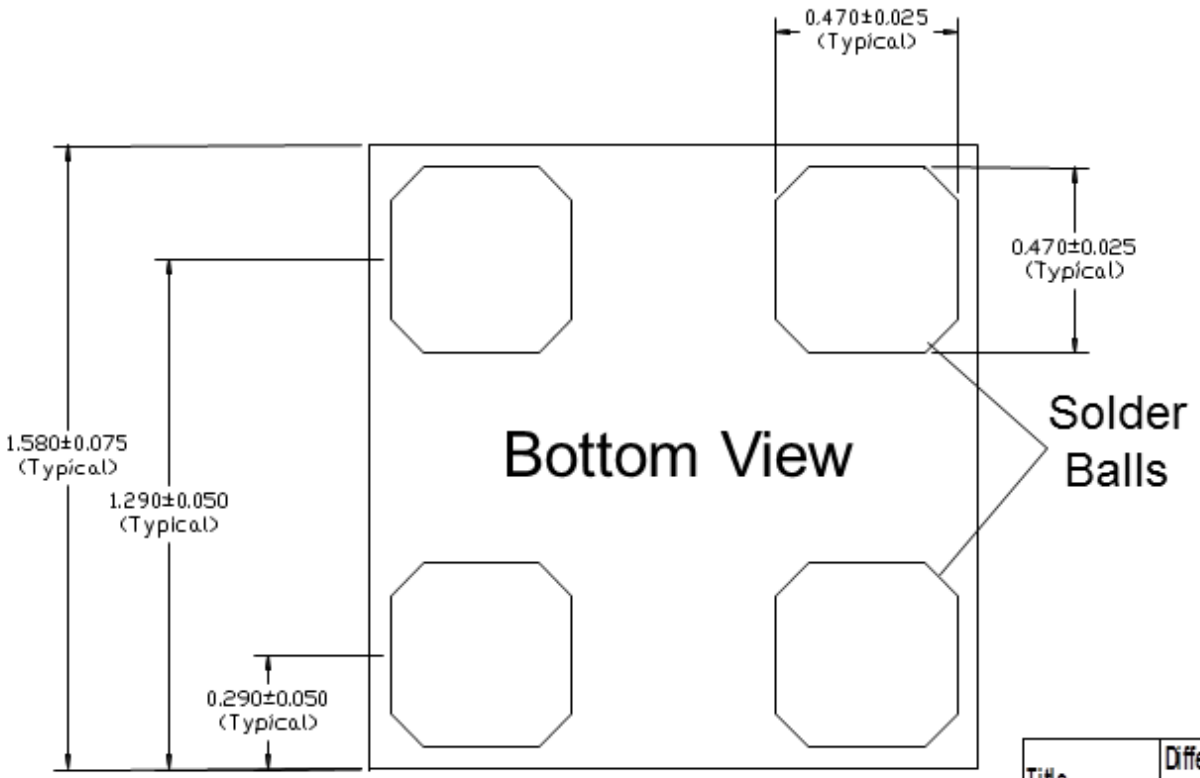
BGA RC Equalizer Specification
Revision 3.2

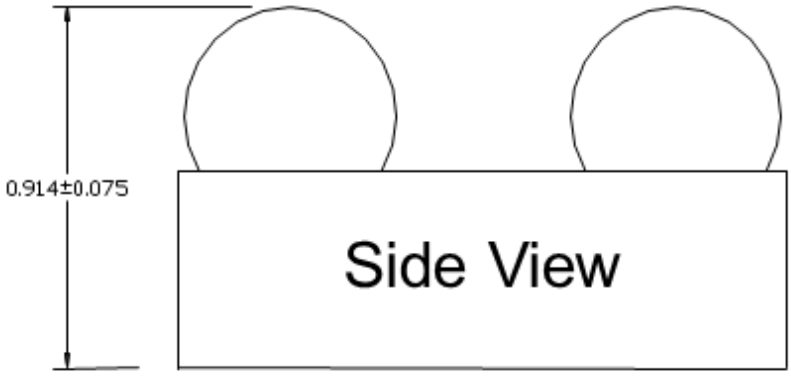
TOP VIEW (BGA TOWARDS THE OBSERVER, UNMOUNTED PARTS): The Pin 1 is identified by the 'L' fiducial.



BGA RC Equalizer Specification
Revision 3.2

EQUALIZER DIMENSIONS:





Title	Differential Equalizer	
Date	10-Sep-09	
Units	mm	
Description	RC Network	
Substrate	Glass	
Solder	Pb37, Sn 63	
Dwn by:	J. Mevissen	x
Checked:	J. Borgman	x
Approved:	G. Korony	x

Engineered Thin Film Solutions

BGA RC Equalizer Specification
Revision 3.2

TAPE & REEL DIMENSIONS:

Part Number	Resistor / Ball Side	Orientation	Chip Tray Cavity (L x W x D)
N42042AAAAA1R	Down	Figure 1	(1.78 x 1.78 x 1.13) 8mm,4mm pitch
N42042BAAAA1R	Down	Figure 1	(1.78 x 1.78 x 1.13) 8mm,4mm pitch

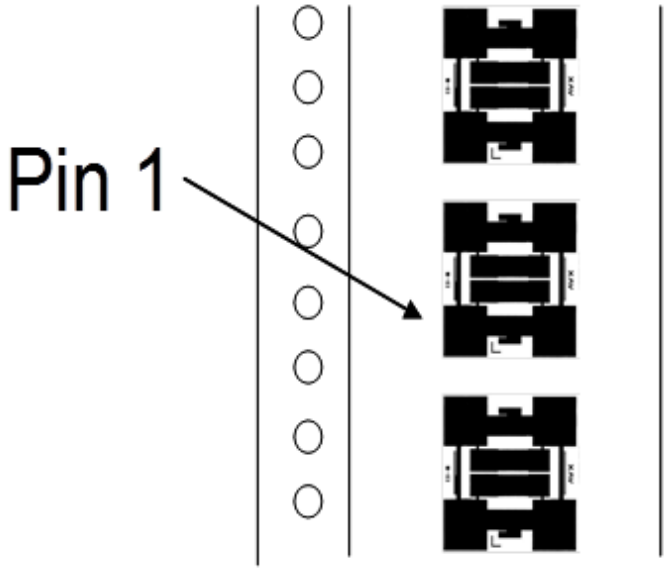
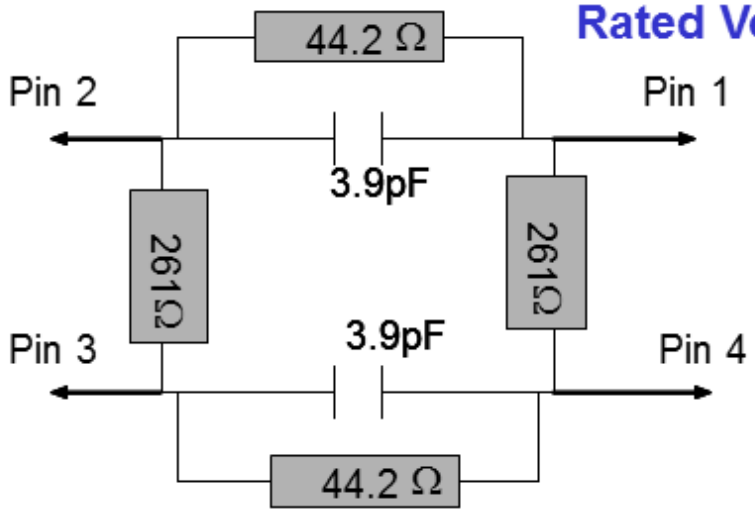


Figure 1: Tape and Reel Orientation

BGA RC Equalizer Specification
Revision 3.2

PART NUMBER: **N42042AAAAA1R**

Schematic 1 as specified by customer:

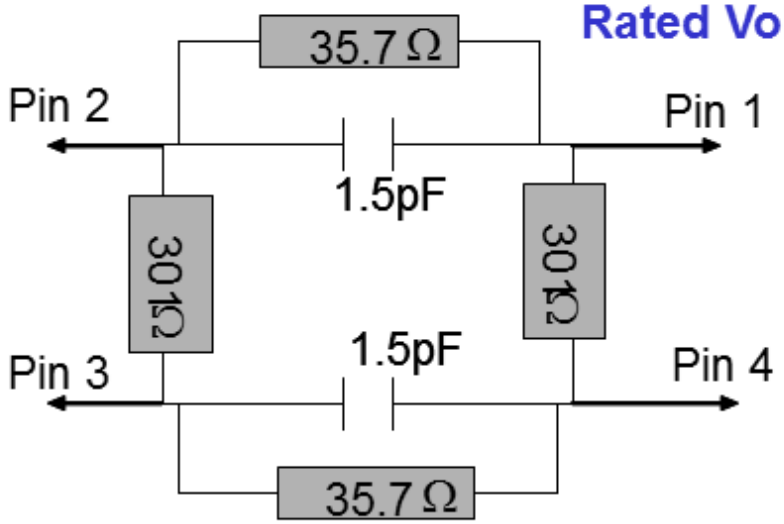


Rated Voltage: Less than 2V DC

Tolerances:
44.2 Ω ± 1%
261 Ω ± 1%
3.9pF ± 0.25pF

PART NUMBER: **N42042BAAAA1R**

Schematic 2 as specified by customer:



Rated Voltage: Less than 2V DC

Tolerances:
35.7 Ω ± 1%
301 Ω ± 1%
1.5pF ± 0.25pF

Engineered Thin Film Solutions

BGA RC Equalizer Specification
Revision 3.2

ELECTRICAL AND FUNCTIONAL REQUIREMENTS:

Test	Sample Size
Capacitance	11 sites per wafer
Resistance	100%
TCR (ppm/°C)	Range - 50 to -150, 11 sites per wafer

RELIABILITY:

Test	Method
Dielectric Voltage Breakdown	MIL-STD-883E.3008.1
Steady State Life	MIL-STD-883E.1005.8 125°C, 1 volt DC
Steady State Humidity (85/85)	MIL-STD-202G.103B 2 volt DC
High Temp Exposure	MIL-STD- 750D.1031.5 150°C, 100 hours
Thermal Cycle	MIL-STD-202G.107G 1000 cycles, -5 to 75°C
Die Shear	MIL-STD-883E.2019.5 100 µm/s shear rate; n=10

BGA RC Equalizer Specification
Revision 3.2

PART NUMBER:

Position 1 = N for integrated Passive Device
Position 2 = Number of Resistors 0-9, a=10, b=11, c=12, d=13, etc. except letters O and I
Position 3 = Number of capacitors, same nomenclature as resistors
Position 4 = Number of Inductors, same nomenclature as resistors
Position 5 = Rated Voltage, 2=2V, 4=4V, Z=10V, 3=25V, 5=50V, 1-100V, V=250V, A=1000V
Position 6 = Resistor Material, 1=SiCr, 2=TaN
Position 7 = Part number designator A-Z, except letters O and I
Position 8 = Part number designator A-Z, except letters O and I
Position 9 = Part number designator A-Z, except letters O and I
Position 10 = Part number designator A-Z, except letters O and I
Position 11 = Failure rate, A=standard, G=Medical, S=Space
Position 12 = Termination type, 1=BGA eutectic 63/37, 2=BGA No Lead, 3=Wire Bond, 4=LGA, 5=Flexiterm
Position 13 = Package, R=7" reel, W=waffle pack, T = tested whole wafer, D = tested, diced wafer on film