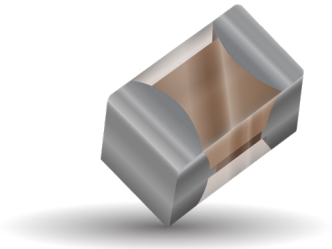
RC Equalizer Network



GENERAL DESCRIPTION

These ruggedly constructed, ultraminiature (EIA 0402, 1005 metric) equalizers combine high-performance tantalum nitride (TaN) resistive elements and silicon/oxygen/nitrogen (SiON) capacitive elements with AVX's proprietary, automotive-qualified, glass-sandwich FLEXITERM® surface-mount technology, which provides an extra measure of protection against flexure damage during installation. The new GEQ Series equalizers are also manufactured with 100% laser trimming to achieve tight tolerances and offer a low 0.5mm profile, a 125mW power rating, resistance values spanning 10–50Ω, and capacitance values extending from 1–50pF.

Rated for a wide range of operating temperatures (-55ºC to +125ºC) and compliant with RoHS, ideal applications for the series extend across the optoelectronic, telecommunications, broadband, military, electronic warfare, space, test, and instrumentation markets and include optical transceiver modules, broadband receivers, and transmission and receiver optical subassemblies (TOSA and ROSA).

FEATURES

- EIA 0402 Case Size
- Resistance Range: 10 to 50 Ω typ.
- Capacitance Range: 1 to 50 pF typ.
- Parallel Configurations
- Power Rating: 125 mW
- Operating Temperature: -55°C to +125°C
- Laser Trimmed Resistors
- RoHS Compliant

*For other RC Combinations and EIA Sizes contact factory

APPLICATIONS

- Optical Transceiver Modules
- Broadband Receiver
- TOSA / ROSA

MARKETS

- Opto-electronics
- Telecom
- Broadband Jamming for EW
- Military
- Instrumentation and Test

CLICK HERE TO DOWNLOAD DATA FILES

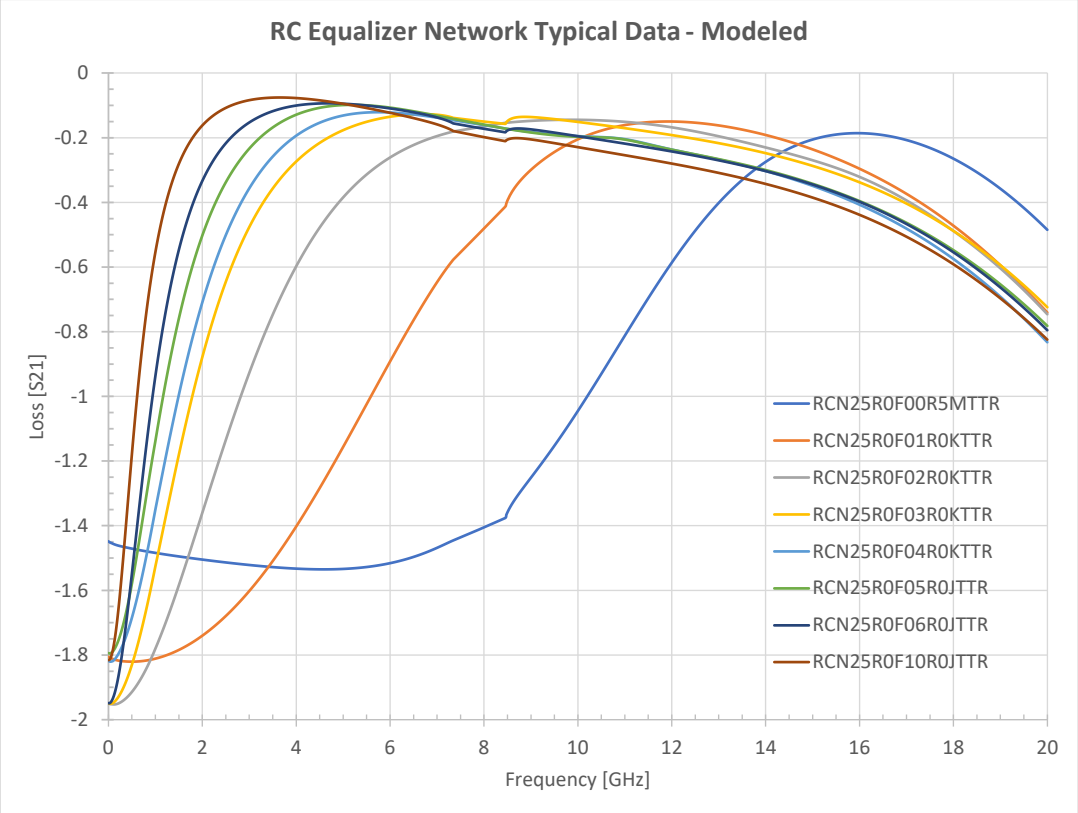
HOW TO ORDER

RCN	25R0	F	05R0	J	T	TR
AVX Series	**Resistance Value (Ω)**	**Resistance Tolerance**	**Capacitance Value (pF)**	**Capacitance Tolerance**	**Terminations**	**Packaging**
0402	3 significant digits R = decimal point	F = 1%	3 significant digits R= decimal point	J* = 5% K* = 10% M* =20% *Minimum tolerance = +/- 0.1pF	T = NiSn Plated	TR = Tape & Reel

RoHS COMPLIANT

EQUALIZER GAIN SLOPE TABLE

Part Number	Starting Frequency (Typical) (GHz)	Loss at Starting Frequency (Typical) (dB)	End Frequency (Typical) (GHz)	Loss at End Frequency (Typical) (dB)	Bandwidth (Typical) (GHz)	Gain (Typical) (dB)
RCN09R0F12R5JTTR	0	-0.7	4	-0.05	4	0.65
RCN25R0F00R5MTTR	5	-1.5	16	-0.2	11	1.3
RCN25R0F01R0KTTR	0	-1.8	12	-0.15	12	1.65
RCN25R0F02R0KTTR	0	-1.8	10	-0.15	10	1.65
RCN25R0F03R0KTTR	0	-1.8	7	-0.15	7	1.65
RCN25R0F04R0KTTR	0	-1.8	6	-0.15	6	1.65
RCN25R0F05R0JTTR	0	-1.8	5	-0.15	5	1.65
RCN25R0F06R0JTTR	0	-1.8	4.5	-0.15	4.5	1.65
RCN25R0F10R0JTTR	0	-1.8	3.5	-0.15	3.5	1.65
RCN30R0F0R33MTTR	9.25	-2.9	16	-0.3	6.75	2.6
RCN43R0F1R15KTTR	0	-3	9	-0.15	9	2.85
RCN50R0F0R31MTTR	6	-3.3	16	-0.3	10	3



RC Equalizer Network

SPECIFICATIONS

Package Size: EIA 0402
Design: Glass wafer sandwich
Termination: NiSn plated
Power Rating: 125 mW
Operating Temperature Range: -55°C to +125°C
Tolerance: Resistor: 1-5%, Capacitor: 5-20%
Resistance Range: 10 to 50 Ω (typical)
Capacitance Range: 1 to 50 pF (typical)

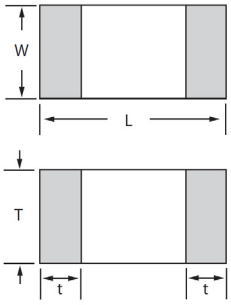
RESISTOR MATERIAL

Thin Film Resistors	TaN
Typical Sheet Resistivity (ohm/sq)	10 to 100
TCR (ppm/°C, -25 to 125°C)	-100 to -150
Stability (Change after 1000 hours @ 125°C)	1.0%

CAPACITOR MATERIAL

Material	SiON
pF/mm Typical	50 to 100
BDV (v/µm)	600
DF	≤0.1%
TCC (ppm/°C, -25 to 125°C)	±60

DIMENSIONS

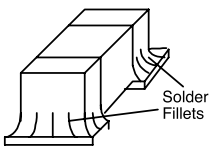


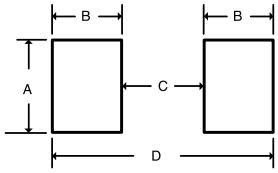
Size (EIA)	Length (L)	Width (W)	Thickness (T)	Termination (t)
0402	1.02 ± 0.051 (0.040 ± 0.002)	0.51 ± 0.051 (0.020 ± 0.002)	0.50 ±0.10 (.020 ±.004)	0.25 ± 0.051 (0.010 ± 0.002)

ENVIRONMENTAL TESTS

Reliability Test	Criteria
Life Test	1000 Hrs. @ 125°C @ 50 mW
85/85 Temp./ Humidity Breakdown	1080 Hrs. @ 50 mW
Thermal Cycle	100 cycles @ -40 to 125°C
Termination Strength	200 g for 50 seconds (Dage Tester)x

SUGGESTED MOUNTING PAD DIMENSIONS





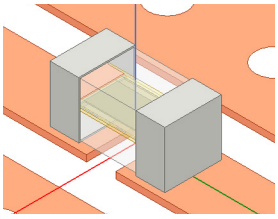
Normal Pads

W = Chip Width L = Chip Length T = Chip Thickness

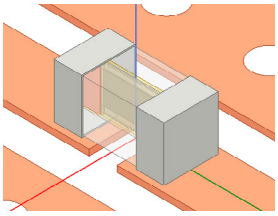
Case Size	A Min.	B Min.	C Min.	D Min.
0402	0.0213	0.0125	0.0206	0.0436

Dimensions are in inches.

Horizontal Mount



Vertical Mount



NOTES:

Mounting will allow the solder fillet to travel up approximately 0.015" of the chip's end and side termination surface. Heavier fillets require a predeposition of solder paste and or an increase in pad dimensions. Typical solder paste application is a .008" to 0.01" thickness with >50% of volume in solder alloy. Can be mounted in both vertical and horizontal orientation without changing electrical performance

POWER DERATING