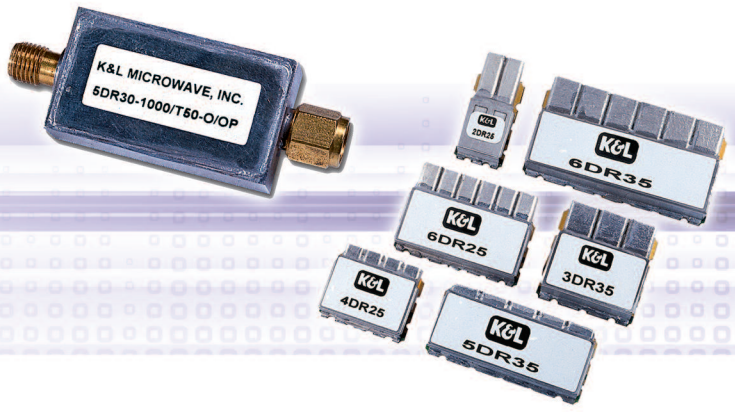
Ceramics

K&L's dielectric resonator filters, in both packaged and open frame designs, offer high unloaded Q for their size allowing narrow bandwidths with low insertion loss. Open frame ***K&L-fil***® designs, available in surface mount configuration only, that minimize size and cost. Packaged filters can be sealed to gross or fine leak specifications and are available in connectorized or with gull-wing or flat pack hermetic pins for input and output connections.



Dielectric Resonators

◆ Description:

K&L's Dielectric Resonator Bandpass Filters are available in standard packages with a basic Chebychev design. Connectors available are SMA and RF pins. Through the use of ceramic technology, this filter series offers superior temperature stability and low insertion loss.

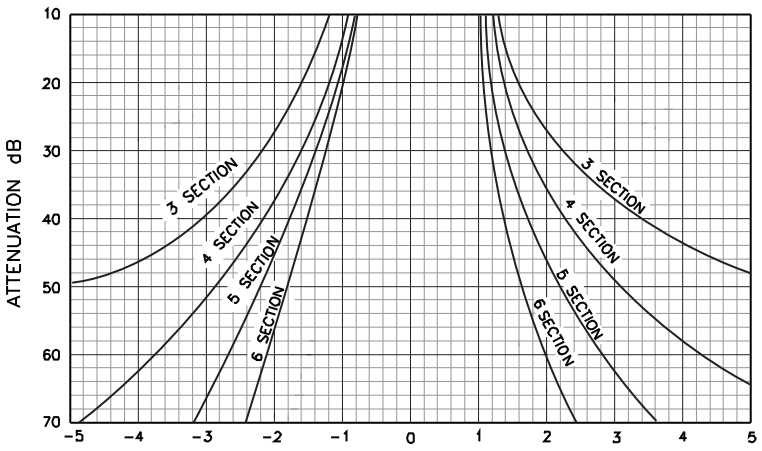
◆ Specifications:

Frequency (MHz)	3 dB % BW	VSWR	Impedance (Ohms)	No. of Sections	Shock	Vibration	Temperature	Temp. Stability	Relative Humidity
500-3000	1.0-10	1.5:1	50	3-6	20 G's, 1/2 Sine, 11 Ms	10 G's, 10 Hz-2000 Hz	-40 to +85 °C (Operating) -50 to +125 °C (Non-Operating)	+2 to +11 ppm/°C	0-95%

◆ Attenuation:

The adjacent curve shows the attenuation as multiples of the bandwidth for filters with 2-6 sections. The following formula is used:
3 dB bandwidths from center frequency=

$$\frac{\text{Reject Frequency - Center Frequency}}{\text{3 dB Bandwidth}}$$



Example:

Center Frequency = 1000 MHz
3 dB Bandwidth = 50
Number of Sections = 5

Find the attenuation at 900 and 1100 MHz by substituting in the formula 3 dB bandwidth from center frequency = $\frac{900-1000}{50}$ = -2 BW's
and 3dB bandwidth from center frequency = $\frac{1100-1000}{50}$ = +2 BW's
From the curve, we find the attenuation in dB for a 5-section response -2 bandwidths from center frequency to yield 46 dB, and +2 bandwidths from center frequency to yield 44 dB.

www.klmicrowave.com
Phone: 410-749-2424 • FAX: 443-260-2268
Email: sales@klmicrowave.com

www.klfilterwizard.com
2250 Northwood Drive
Salisbury, MD 21801

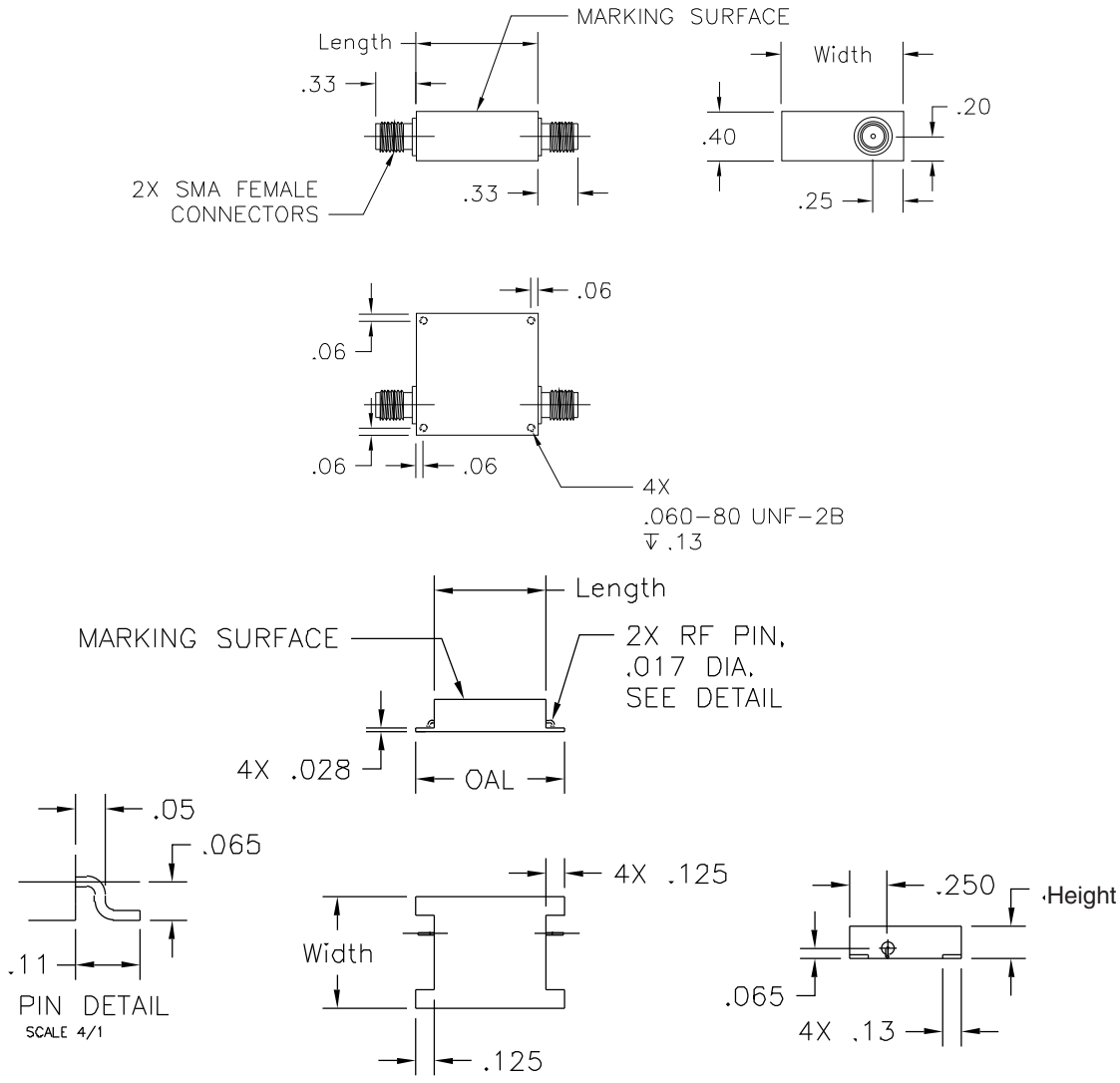
To Order:

3 DR 20 — 1000 / T 50 — O / O
1 2 3 4 5 6 7 8

Code	Description
1	Number of Sections
2	Series
3	Package/Resonator Designator
4	Center Frequency
5	Supplemental Codes (See Page 13)
6	Bandwidth
7	Input Connector
8	Output Connector

Connectors:

Connector	Code
SMA Female	O
SMA Male	OP
Gull Wing	PX



For Mechanical Definitions see www.klfilterwizard.com or contact our factory.

KEL-fil® — Bandpass Filters

Features:

- Designed for Low Cost While Providing High "Q" Response
- Extremely Temperature Stable
- Covers the 270 MHz to 3000 MHz Frequency Range
- 3 dB BW Available up to 30%
- Designs Available in 3-6 Sections
- Chebyshev Design Response
- Series 3 and 5 are ROHs compliant
- See page 46 for Reflow Profile and Suggested Mounting Information.

Specifications:

Center Frequency (MHz)	3 dB % BW	VSWR	Attenuation	Impedance (Ohms)	Number of Sections	Shock	Vibration	Temp.	Temp. Stability	Rel. Humidity
270-3000	Up to 30%	2.0:1	≥ 60 dBc (270-2000 MHz) ≥ 30 dBc (2001-3000 MHz)	50	3-6	20 G's 1/2 Sine, 11 Ms	10 G's 10 Hz - 2000 Hz	-40 to +85°C (Operating) -50 to + 125°C (Non-Operating)	+2 to +11 ppm/°C	0-95%

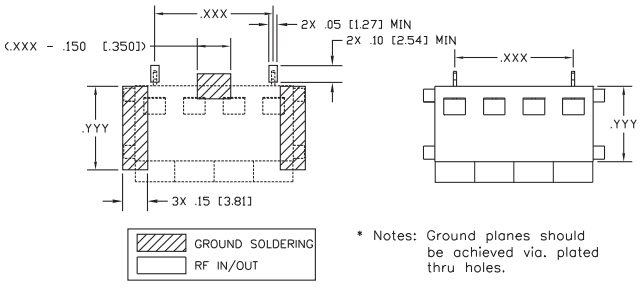
* For more complete specifications please visit us at **www.klfilterwizard.com**

Recommended PCB Layout:

DR 23, 33 Series Depicted

.xxx = Dim. A
.yyy = Dim. B

Dimensions are determined by Filter Wizard outline.

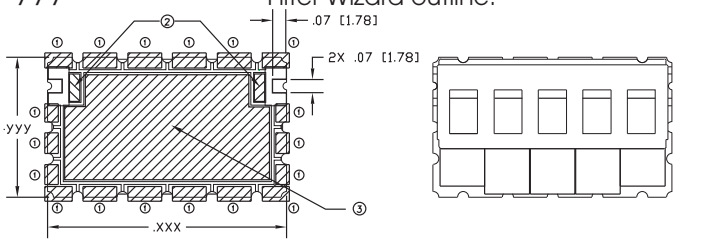


* Notes: Ground planes should be achieved via. plated thru holes.

DR 25, 35 Series Depicted

.xxx = Dim. A
.yyy = Dim. B

Dimensions are determined by Filter Wizard outline.



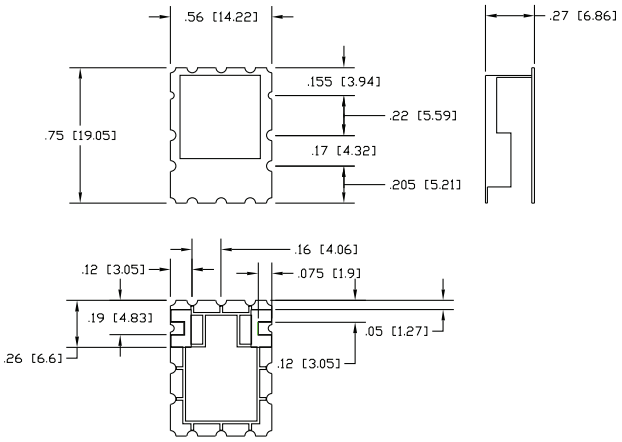
* Notes: Ground planes should be achieved via. plated thru holes.

www.klmicrowave.com
Phone: 410-749-2424 • FAX: 443-260-2268
Email: sales@klmicrowave.com

K&L MICROWAVE A DOVER COMPANY

www.klfilterwizard.com
2250 Northwood Drive
Salisbury, MD 21801

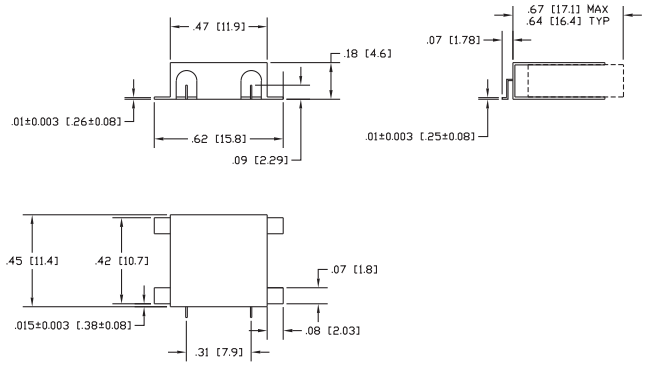
◆ Mechanical — Note: Dimensions for 1000 MHz filters shown



KEL-fil®: 3DR25-1000/U20-1.8

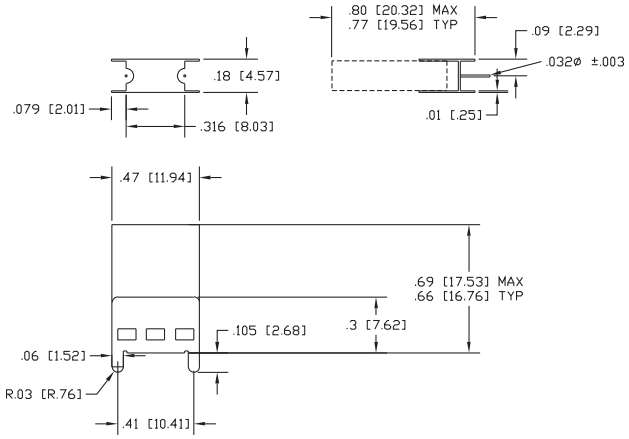
Leadless Surface Mount - Series 5

This mounting configuration offers best isolation.



KEL-fil®: 3DR23-1000/U20-1.8

Surface Mounting - Tab



KEL-fil®: 3DR21-1000/U20-1.8

Drop in (PC) Mounting