

## LFA SERIES

### Tapped Filter

Tapped Filter networks are used as low pass filters for suppression of EMI/RFI noise. These components filter out the high-frequency content of digital signals and are used in I/O ports, such as RS 232 drivers and their corresponding connectors. KOA Tapped Filter networks offer exceptional filtering capabilities and the superior characteristics of advanced thin film processing. A standard LFA network, in a low profile, 20-pin QSOP, replaces 16 discrete resistors and capacitors and offers significant space, cost and performance advantages compared to traditional thick film components.

#### Features

- Thin film RC network
- Excellent stability and performance
- Low parasitic inductance
- Saves valuable real estate
- Total components cost advantage

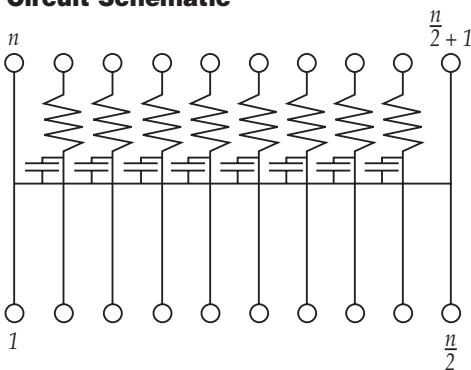
#### Applications

- EMI/RFI filter
- Low pass filter
- High frequency/high speed applications

#### Electrical Characteristics

Resistance Range . . . . . 10Ω to 10KΩ  
 Capacitance Range . . . . . 10pF to 220pF  
 Resistance Tolerance . . . ±5%, ±10%, ±20%  
 Capacitance Tolerance . . . ±10%, ±20%  
 T.C.R. . . . . . 250 ppm/°C  
 Operating Temperature Range . . . . -55°C to +125°C  
 Storage Temperature Range . . . . -65°C to +150°C  
 Power Rating @ 70°C . . . . . 100mW per resistor

#### Circuit Schematic



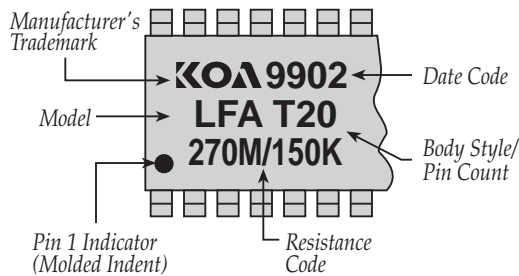
#### Available Pin Configurations

$n$  = Number of Pins (20)  
 See physical configurations on page E-13 for available pin/package configurations.

## Physical Configurations

| Body Style | Resistor/Capacitor Pin Count |
|------------|------------------------------|
| Wide SOIC  | 20                           |
| QSOP       | 20                           |
| TSSOP      | 20                           |
| Die Pack * | 20                           |

## Part Marking



## Standard Resistance/Capacitance Values

| Resistance (ohms) | Capacitance (pF) | Code    |
|-------------------|------------------|---------|
| 10                | 15               | 100/150 |
| 15                | 47               | 150/470 |
| 27                | 15               | 270/150 |
| 33                | 47               | 330/470 |
| 33                | 100              | 330/101 |
| 47                | 47               | 470/470 |
| 47                | 100              | 470/101 |
| 100               | 100              | 101/101 |
| 100               | 150              | 101/151 |

## Mechanical Characteristics

| Item              | Material                |
|-------------------|-------------------------|
| Substrate         | Silicon                 |
| Resistor material | TaN/NiCr                |
| Dielectric        | Silicon dioxide/Nitride |

\* See page J-6 for Die Pack specifications.

## Ordering Information

| LFA               | T                                                                                                           | 20                    | B                                                                       | 270M/150K                                                                                                                 |
|-------------------|-------------------------------------------------------------------------------------------------------------|-----------------------|-------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------|
| Circuit Type      | Body Style                                                                                                  | Number of Pins        | Packaging                                                               | Resistance/Capacitance Value                                                                                              |
| LFA-Tapped Filter | W = Wide SOIC<br>Q = QSOP<br>T = TSSOP<br>6 = 0.6 mm Die Pack<br>5 = 0.5 mm Die Pack<br>4 = 0.4 mm Die Pack | 20<br>See above table | B = 13" Embossed Plastic Tape & Reel, see Packaging Section for details | 2 significant digits + the number of zeros followed by the tolerance<br>J = $\pm 5\%$<br>K = $\pm 10\%$<br>M = $\pm 20\%$ |