



P/ACTIVE EMI/RFI TAPPED FILTER

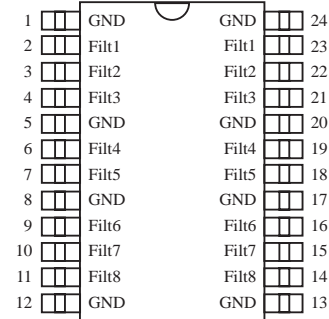
Features

- 8 Filter Channels in Miniature QSOP Package
- Ideal Frequency Response to Over 3 GHz
- Low In-Band Insertion Loss Maintains Signal Integrity
- Low Distortion Low Cross Talk
- ESD Protected

Applications

- EMI/RFI Filter
- Low Pass Filter
- SCSI Port Filter
- LCD Panel Display Filter

Pin Assignments



Product Description

Note: CAMDs P/Active Tapped Filters are a higher performance, upgraded versions of the original PRC201/211/221 series which provides 2KV ESD protection, minimized lead inductance and parasitic capacitive effects (with added ground pins), and improved crosstalk and filter performance characteristics at high data transmission rates. They exhibit almost ideal RC characteristics to 3GHz. The PACTF series is recommended for all new designs.

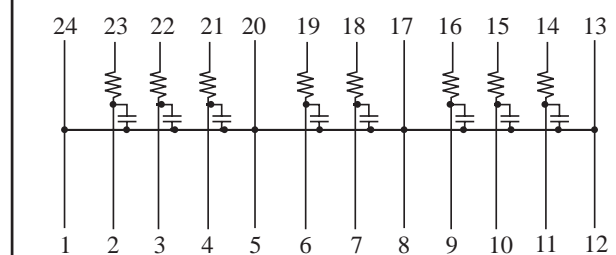
CAMDs P/Active Tapped Filter is a highly integrated thin film resistor-capacitor network designed to suppress EMI/RFI noise at I/O ports of personal computers and peripherals, workstations, Local Area Network (LAN), Asynchronous Transfer Mode (ATM), and Wide Area Network (WAN). The filter includes ESD protection circuitry which prevents device destruction when subjected to ESD discharges of greater than 2KV. The ESD protection circuitry permits the filter to operate on bipolar signals of up to ±6V. CAMDs PACTF is housed in a surface mount package suitable for bottom side mounting to the board. This integrated network solution minimizes space and routing problems and improves reliability and yields.

Why P/Active EMI/RFI filters? EMI/RFI filters are needed to suppress noise at low and high frequencies of the signal. Ferrite beads, commonly used for EMI/RFI filtering, are bulky and ineffective at low frequencies and have saturation problems at high frequencies. Resistor-capacitor networks offer the best technical approach for effective EMI/RFI filtering. Also, conventional thick film-based EMI/RFI filters do not effectively suppress noise at high frequencies.

STANDARD SPECIFICATIONS

| | |
|-----------------------------|------------------|
| Absolute Tolerance (R) | ±10% |
| Absolute Tolerance (C) | ±10% |
| Absolute Tolerance (C=15pF) | ±20% |
| Operating Temperature Range | 0°C to 70°C |
| Power Rating/Resistor | 100mW |
| Leakage Current | 1 μA @ 25°C max. |
| Crosstalk | < 5% (typical) |
| (see Test Circuit) | |
| ESD Clamp | |
| Positive Clamp | > 6 Volts |
| Negative Clamp | < -6 Volts |
| ESD Protection | > 2 KV |
| Storage Temperature | -65°C to +150°C |
| Package Power Rating | 1.00W, max. |

SCHEMATIC CONFIGURATION





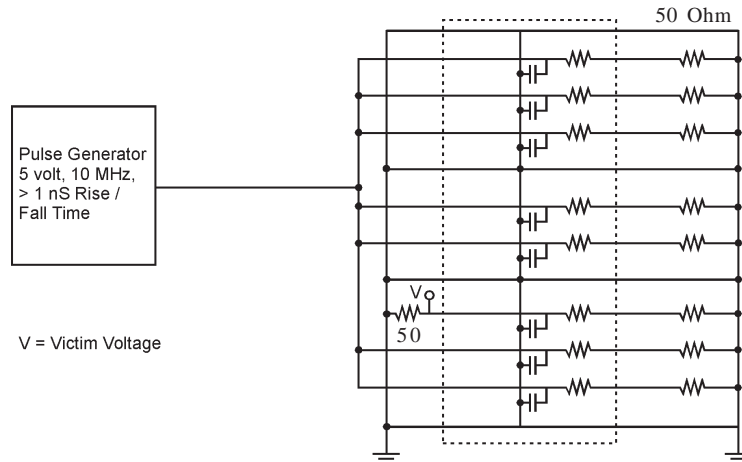
| STANDARD VALUES | | | |
|-----------------|--------|----------|---------------------|
| R (Ω) | C (pf) | RC Code | fc @ 3db \ddagger |
| 10 | 15 | 100/150T | 1063 MHz |
| 10 | 100 | 100/101T | 160 MHz |
| 15 | 47 | 150/470T | 226 MHz |
| 25 | 100 | 250/101T | 64 MHz |
| 25 | 200 | 250/201T | 32 MHz |
| 33 | 47 | 330/470T | 103 MHz |
| 33 | 180 | 330/101T | 27 MHz |
| 33 | 220 | 330/221T | 22 MHz |
| 39 | 50 | 390/500T | 82 MHz |
| 39 | 220 | 390/221T | 19 MHz |
| 47 | 33 | 470/330T | 103 MHz |
| 47 | 47 | 470/470T | 72 MHz |
| 100 | 100 | 101/101T | 16 MHz |

\ddagger with 0 source impedance

| STANDARD PART ORDERING INFORMATION | | | | | |
|------------------------------------|---------|--------|----------------------|-----------------|---------------|
| RC Code | Package | | Ordering Part Number | | Part Marking |
| | Pins | Style* | Tubes | Tape & Reel | |
| 100/150T | 24 | QSOP | PAC100/150TFQ/T | PAC100/150TFQ/R | PAC100/150TFQ |
| 100/101T | 24 | QSOP | PAC100/101TFQ/T | PAC100/101TFQ/R | PAC100/101TFQ |
| 150/470T | 24 | QSOP | PAC150/470TFQ/T | PAC150/470TFQ/R | PAC150/470TFQ |
| 250/101T | 24 | QSOP | PAC250/101TFQ/T | PAC250/101TFQ/R | PAC250/101TFQ |
| 250/201T | 24 | QSOP | PAC250/201TFQ/T | PAC250/201TFQ/R | PAC250/201TFQ |
| 330/470T | 24 | QSOP | PAC330/470TFQ/T | PAC330/470TFQ/R | PAC330/470TFQ |
| 330/101T | 24 | QSOP | PAC330/101TFQ/T | PAC330/101TFQ/R | PAC330/101TFQ |
| 330/221T | 24 | QSOP | PAC330/221TFQ/T | PAC330/221TFQ/R | PAC330/221TFQ |
| 390/500T | 24 | QSOP | PAC390/500TFQ/T | PAC390/500TFQ/R | PAC390/500TFQ |
| 390/221T | 24 | QSOP | PAC390/221TFQ/T | PAC390/221TFQ/R | PAC390/221TFQ |
| 470/330T | 24 | QSOP | PAC470/330TFQ/T | PAC470/330TFQ/R | PAC470/330TFQ |
| 470/470T | 24 | QSOP | PAC470/470TFQ/T | PAC470/470TFQ/R | PAC470/470TFQ |
| 101/101T | 24 | QSOP | PAC101/101TFQ/T | PAC101/101TFQ/R | PAC101/101TFQ |

* Also available in 300 mil wide SOIC package. Contact your local CAMD Sales Representative or the factory for availability.

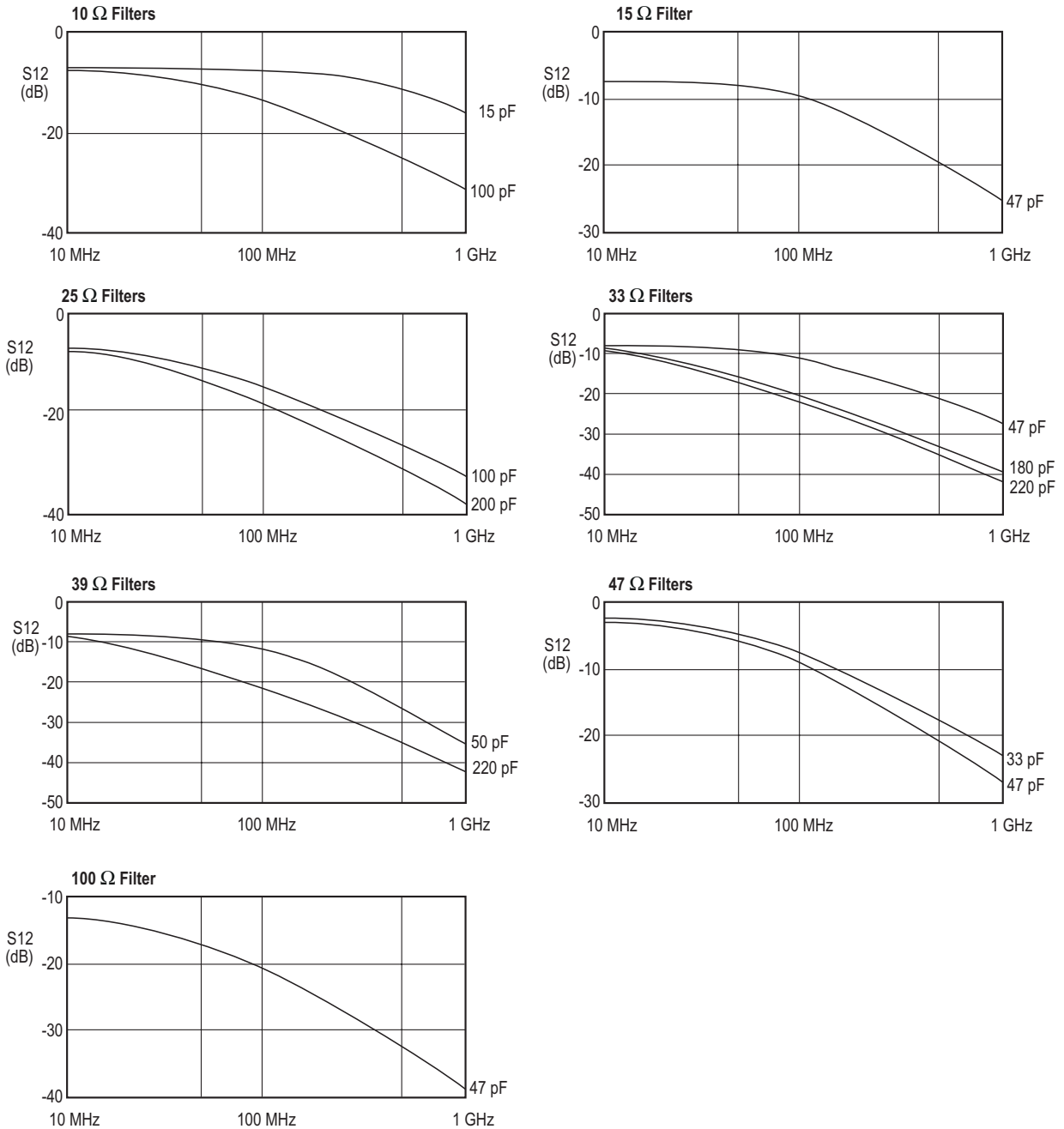
Filter Cross Talk Test Circuit (T_A=25°C)





Filter Insertion Loss (S12, dB), Typical (TA = 25°C) Representative Sample

ATTENUATION CURVES



S parameters are measured using a Hewlett Packard HP8753C Network Analyzer with a HP85047A S-parameter Test Set.