P/ACTIVE AC TERMINATION NETWORK

Features

- High Frequency Performance
- Miniature QSOP Package
- 18 terminating lines/package
- Stable resistor-capacitor network

Applications

- AC Termination
- Low Pass Filtering

Refer to AP-201 Termination Application Note for further information.

Product Description

Note: CAMD's P/Active AC Integrated Resistor-Capacitor Termination Network is an upgraded version of the original PRC202/212 series. PACAC provides 2KV ESD protection, minimized lead inductance and parasitic capacitive effects (with added ground pins), improved termination characteristics, and frequency response at high data transmission rates. The PACAC is recommended for all new designs.

This integrated thin film resistor-capacitor network is designed to eliminate transmission line effects on high speed data lines. Incorporating CAMD's P/Active AC Integrated Resistor-Capacitor Termination Network will result in improved board yields and reliability, minimized space and routing problems on the board, and reduced assembly costs. This highly integrated network requires no DC power dissipation.

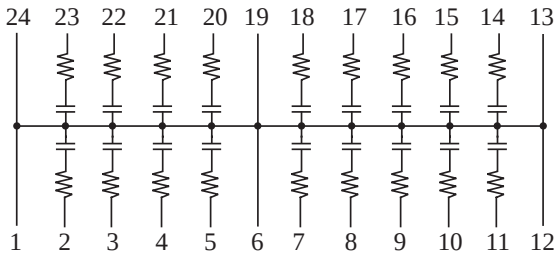
Why P/Active termination networks? A terminating RC is used to reduce or eliminate reflections on a transmission line. It can perform this function only when its impedance value matches the characteristic impedance of the transmission line across a broad frequency spectrum.

Passive components affect the electrical performance of electronic systems. In reality, every resistor has some parasitic series inductance and a parasitic capacitance; and every capacitor has both series resistance and inductance. At low speeds, these parasitics do not affect the performance of resistors and capacitors. However, at higher speeds, these parasitics cause mismatch in a termination. To prevent these problems in high speed digital designs, a designer must take special care in selecting passive components or networks.

The PACAC family of devices provides consistent and predictable behavior over a higher frequency range than discrete components or any previous network products.

STANDARD SPECIFICATIONS	
Absolute Tolerance (R)	±10%
Absolute Tolerance (C)	±10%
Operating Temperature Range	0°C to 70°C
Crosstalk (See Text Circuit)	<5% (typical)
Power Rating/Resistor	100mW
ESD Clamp Positive Clamp Negative Clamp	 >6V <-6V
ESD Protection (per MIL-STD-833, Method 3015)	 >2KV
Storage Temperature	-60°C to 150°C
Package Power Rating	1.00W, max.

SCHEMATIC CONFIGURATION



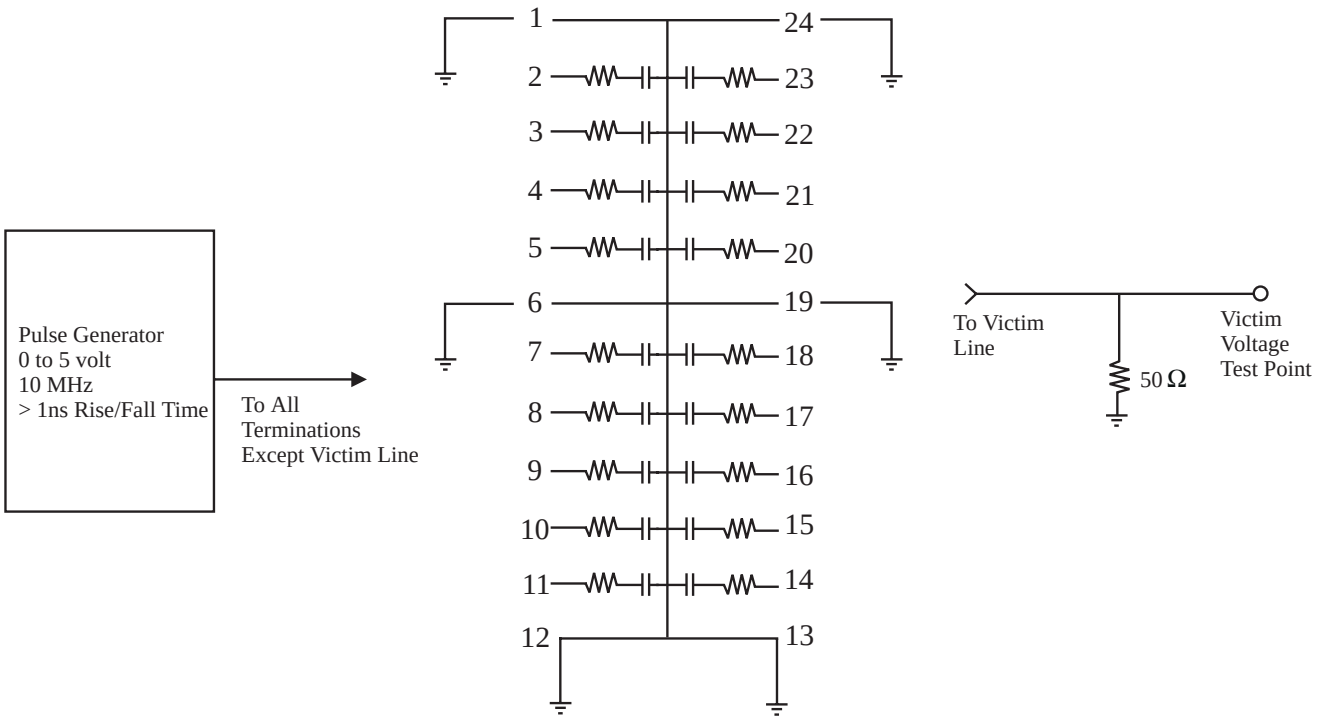
STANDARD VALUES				
R(Ω)	C(pf)	fmax* @ R±10%	Time Constant (ns)	RC Code
33	47	1 GHz	1.55	330/470
47	47	1 GHz	2.21	470/470
47	33	1 GHz	1.55	470/330
75	50	1 GHz	3.75	750/500
100	100	1 GHz	10.0	101/101

*Maximum frequency where the real part of the impedance of the AC termination is within 10% tolerance of the designed resistance R.

© 2000 California Micro Devices Corp. All rights reserved.

	STANDARD PART ORDERING INFORMATION				
	Package		Ordering Part Number		
RC Code	Pins	Style	Tubes	Tape & Reel	Part Marking
330/470	24	QSOP	PAC330/470AQ/T	PAC330/470AQ/R	PAC330/470ACQ
470/470	24	QSOP	PAC470/470AQ/T	PAC470/470AQ/R	PAC470/470ACQ
470/330	24	QSOP	PAC470/330AQ/T	PAC470/330AQ/R	PAC470/330ACQ
750/500	24	QSOP	PAC750/500AQ/T	PAC750/500AQ/R	PAC750/500ACQ
101/101	24	QSOP	PAC101/101AQ/T	PAC101/101AQ/R	PAC101/101ACQ

Crosstalk Test Circuit (T_A=25°C)



©2000 California Micro Devices Corp. All rights reserved.