



## Isolated Resistor Termination Network

### Features

- Stable resistor network
- High speed termination network
- 8 or 12 terminating lines/package
- Saves board space and reduces assembly cost

### Applications

- Series termination
- Parallel termination
- Pull up/pull down
- Digital pulse squaring
- Coding and decoding
- Telemetry

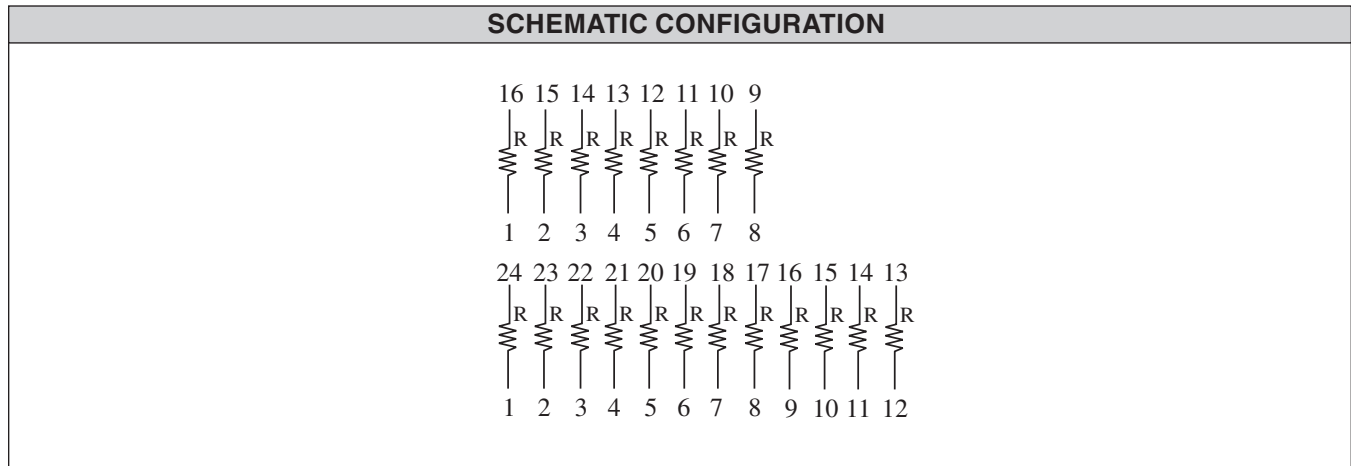
Refer to AP-201 Termination Application Note for further information.

### Product Description

CAMD's PRN100/110 Isolated Resistor Termination Networks offer high integration and performance in a miniature QSOP or SOIC package, which saves critical board area and provides manufacturing cost and reliability efficiencies.

Why thin film resistor networks? A terminating resistor is used to reduce or eliminate unwanted reflections on a transmission line or in some cases provide DC pull-up/pull-down. It can perform this function only when its

resistance value is closely matched to the characteristic impedance of the transmission line. The resistors used for terminating transmission lines must be noiseless, stable, and functional at high frequencies. Unlike thin film-based resistor networks, conventional thick film resistors used for this purpose are not stable over temperature and time, and may have functional limitations when used in high frequency applications.



STANDARD SPECIFICATIONS	
Absolute Tolerance (R)	±5%
TCR	±100ppm
Operating Temperature Range	-55°C to 125°C
Power Rating/Resistor	100mW for R < 1KΩ
	25mW for R ≥ 1KΩ
Minimum Insulation Resistance	10,000 MΩ
Storage Temperature	-65°C to +150°C
Package Power Rating	1W, max.

STANDARD VALUES			
R (Ω) Isolated	Code	R (Ω) Isolated	Code
10	10R0	470	4700
22	22R0	1K	1001
33	33R0	2K	2001
39	39R0	4.7K	4701
100	1000	10K	1002
330	3300		

NON-STANDARD SPECIFICATIONS	
Absolute Tolerance (R)	±2% , ±1%

NON-STANDARD VALUES	
Resistance Range	10 to 10KΩ



STANDARD PART ORDERING INFORMATION					
Package	Package		Ordering Part Number		
R Code	Pins	Style	Tubes	Tape & Reel	Part Marking
10R0	16	Narrow SOIC	PRN10016N10R0J/T	PRN10016N10R0J/R	PRN10016N10R0J
22R0	16	Narrow SOIC	PRN10016N22R0J/T	PRN10016N22R0J/R	PRN10016N22R0J
33R0	16	Narrow SOIC	PRN10016N33R0J/T	PRN10016N33R0J/R	PRN10016N33R0J
39R0	16	Narrow SOIC	PRN10016N39R0J/T	PRN10016N39R0J/R	PRN10016N39R0J
1000	16	Narrow SOIC	PRN10016N1000J/T	PRN10016N1000J/R	PRN10016N1000J
3300	16	Narrow SOIC	PRN10016N3300J/T	PRN10016N3300J/R	PRN10016N3300J
4700	16	Narrow SOIC	PRN10016N4700J/T	PRN10016N4700J/R	PRN10016N4700J
1001	16	Narrow SOIC	PRN10016N1001J/T	PRN10016N1001J/R	PRN10016N1001J
2001	16	Narrow SOIC	PRN10016N2001J/T	PRN10016N2001J/R	PRN10016N2001J
4701	16	Narrow SOIC	PRN10016N4701J/T	PRN10016N4701J/R	PRN10016N4701J
1002	16	Narrow SOIC	PRN10016N1002J/T	PRN10016N1002J/R	PRN10016N1002J
10R0	16	QSOP	PRN1101610R0J/T	PRN1101610R0J/R	PRN1101610R0J
22R0	16	QSOP	PRN1101622R0J/T	PRN1101622R0J/R	PRN1101622R0J
33R0	16	QSOP	PRN1101633R0J/T	PRN1101633R0J/R	PRN1101633R0J
39R0	16	QSOP	PRN1101639R0J/T	PRN1101639R0J/R	PRN1101639R0J
1000	16	QSOP	PRN110161000J/T	PRN110161000J/R	PRN110161000J
3300	16	QSOP	PRN110163300J/T	PRN110163300J/R	PRN110163300J
4700	16	QSOP	PRN110164700J/T	PRN110164700J/R	PRN110164700J
1001	16	QSOP	PRN110161001J/T	PRN110161001J/R	PRN110161001J
2001	16	QSOP	PRN110162001J/T	PRN110162001J/R	PRN110162001J
4701	16	QSOP	PRN110164701J/T	PRN110164701J/R	PRN110164701J
1002	16	QSOP	PRN110161002J/T	PRN110161002J/R	PRN110161002J
10R0	24	QSOP	PRN1102410R0J/T	PRN1102410R0J/R	PRN1102410R0J
22R0	24	QSOP	PRN1102422R0J/T	PRN1102422R0J/R	PRN1102422R0J
33R0	24	QSOP	PRN1102433R0J/T	PRN1102433R0J/R	PRN1102433R0J
39R0	24	QSOP	PRN1102439R0J/T	PRN1102439R0J/R	PRN1102439R0J
1000	24	QSOP	PRN110241000J/T	PRN110241000J/R	PRN110241000J
3300	24	QSOP	PRN110243300J/T	PRN110243300J/R	PRN110243300J
4700	24	QSOP	PRN110244700J/T	PRN110244700J/R	PRN110244700J
1001	24	QSOP	PRN110241001J/T	PRN110241001J/R	PRN110241001J
2001	24	QSOP	PRN110242001J/T	PRN110242001J/R	PRN110242001J
4701	24	QSOP	PRN110244701J/T	PRN110244701J/R	PRN110244701J
1002	24	QSOP	PRN110241002J/T	PRN110241002J/R	PRN110241002J

NON-STANDARD PART ORDERING INFORMATION			
PRN100 (Example)	16	XXXX	T
Part Series	Pin Count	Value Code	Tolerance
PRN100 -SOIC	16 =16-pins	First 3 digits are significant value. (R indicates decimal point) Fourth digit represents number of zeroes to follow.	J = ±5%
PRN110-QSOP	16 =16-pins		G = ±2%
	24 =24-pins		F = ±1%

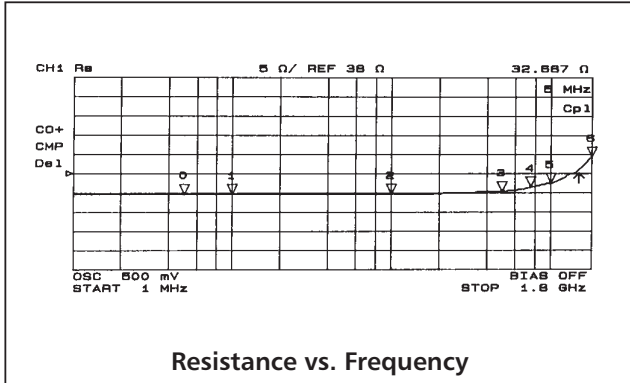
California Micro Devices can develop a fully customized solution which embodies the configuration shown in this data sheet or modified to suit specific application requirements. Very precise TCR, TCR tracking and resistor tolerances, and resistor-to-resistor ratio matching can also be provided. A Non-Recurring Engineering (NRE) charge will apply for all fully customized requirements and a minimum order/lot will be required.

Please direct your detailed circuit configuration and specification requirements to your local CMD representative or to the factory for a quotation.



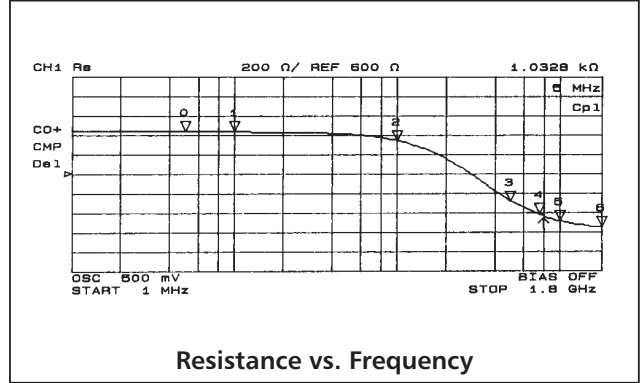
# TYPICAL FREQUENCY RESPONSE CHARACTERISTICS

### 33 Ohms SOIC Package

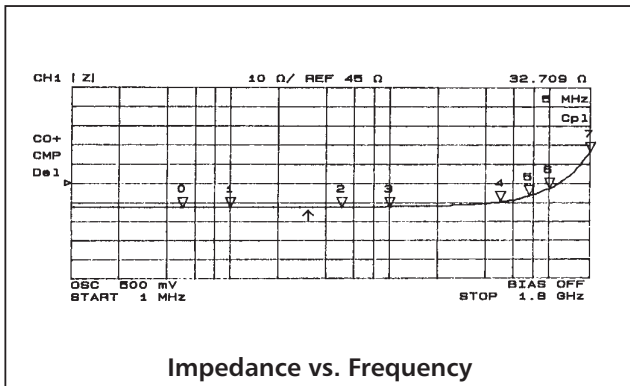


Resistance vs. Frequency

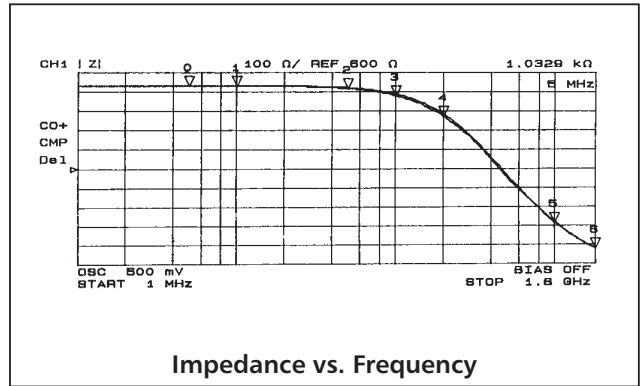
### 1K Ohms SOIC Package



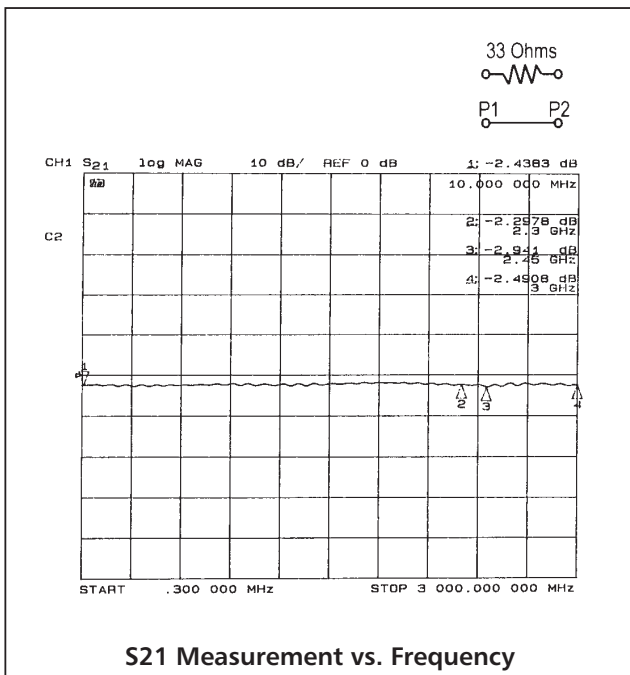
Resistance vs. Frequency



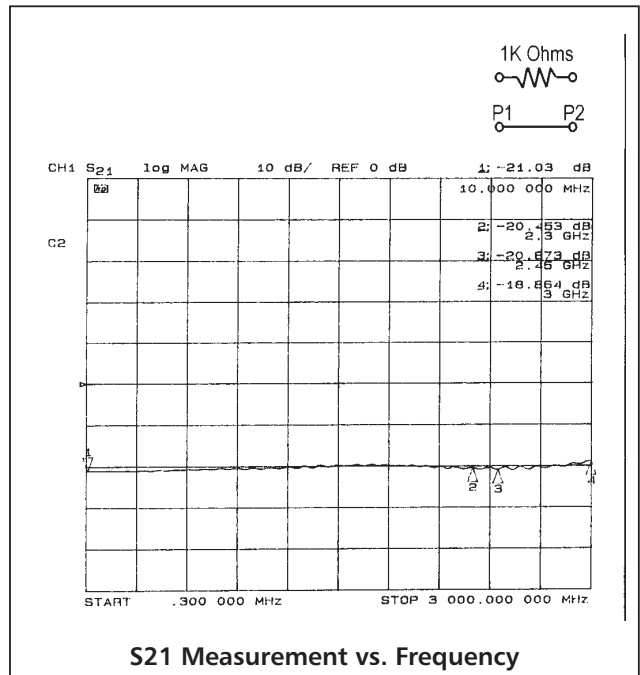
Impedance vs. Frequency



Impedance vs. Frequency



S21 Measurement vs. Frequency



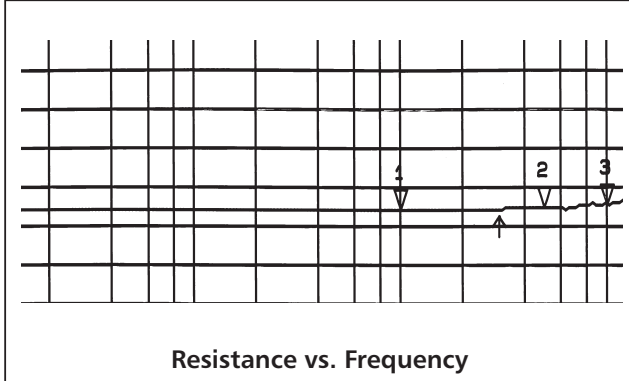
S21 Measurement vs. Frequency

Impedance is measured using an HP4291A  
S-Parameters are measured using an HP8753C

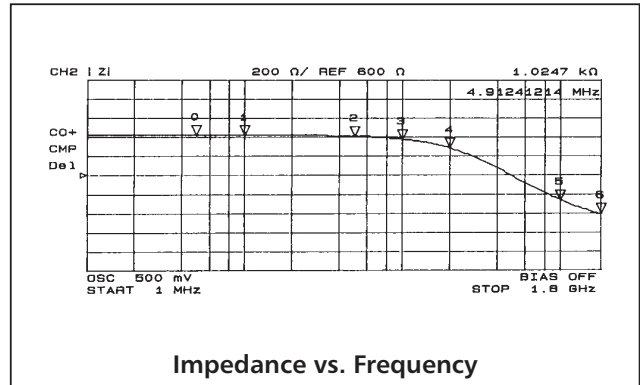
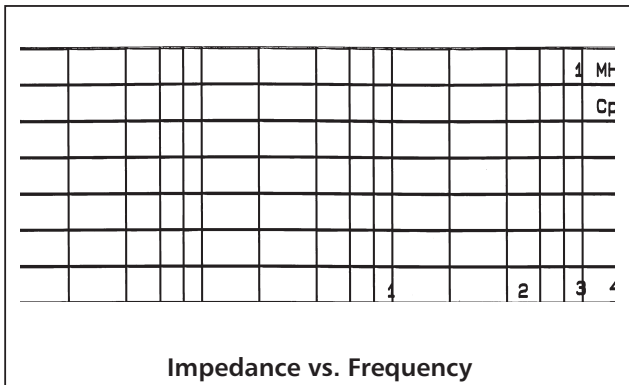
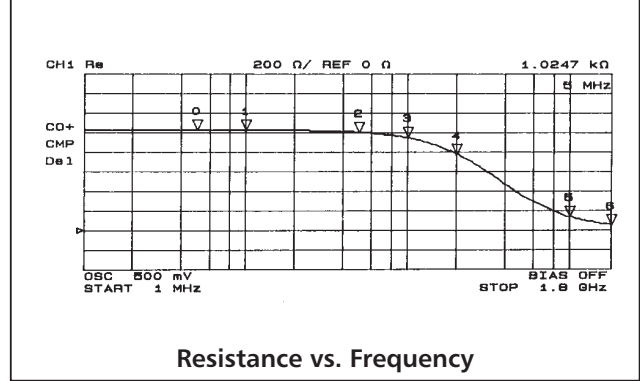


# TYPICAL FREQUENCY RESPONSE CHARACTERISTICS

33 Ohms  
QSOP Package



1K Ohms  
QSOP Package



Impedance is measured using an HP4291A