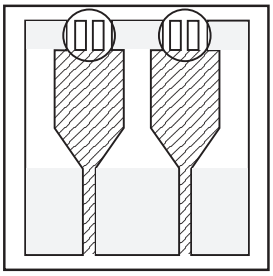
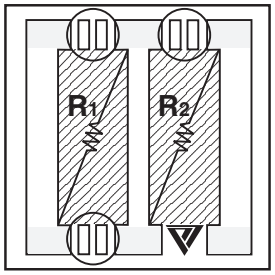
Thin Film Resistor Series

California Micro Devices TR Series resistors offer a high degree of stability and low noise as well as the proven reliability characteristics of Tantalum Nitride. TR Series 20 mil chips offer these advantages in a broad range of standard center tapped resistors in total values up to one meg ohm and tolerances as low as 0.5 percent.

Electrical Specifications			
Parameter	**Conditions**		
TCR	–55°C to 125°C	±100ppm/°C	Max
Operating Voltage	–55°C to 125°C	100Vdc	Max
Power Rating (per resistor)	@ 70°C (Derate linearly to zero @ 150°C)	250mw	Max
Thermal Shock	Method 107 MIL-STD-202F	±0.5%@ΔR	Max
High Temperature Exposure	100 Hrs @ 150°C Ambient	±0.25%ΔR	Max
Moisture Resistance	Method 106 MIL-STD-202F	±0.5%ΔR	Max
Life	Method 108 MIL-STD-202F (125°C/1000 hr)	±0.5%ΔR	Max
Noise	Method 308 MIL-STD-202F ≥250KΩ	–25dB –20dB	Max
Centertap Tolerance	R_1/R_2 @25°C	±1.0%	
Insulation Resistance	@25°C	1 X 10^{12}Ω	Min



4.7Ω to 470Ω



470Ω to 1MΩ

Bonding Area

Laser Code Area

Formats

Die Size: 30±3 mils square

Bonding Pads: 4x4 mils typical

Values
From 4.7Ω to 1 meg Ω for each resistor. Values>1 meg ohms use proprietary resistor material.

Mechanical Specifications	
Substrate	Silicon 10±2 mils thick
Isolation Layer	$Si0_2$ 10,000Å thick, min
Backing	Lapped (gold optional)
Metalization	Aluminum 10,000Å thick, min (15,000Å gold optional)

Packaging
Two inch square trays of 400 chips maximum is standard.

Notes
1. Code boxes for alpha numeric laser marking are available.
2. Resistor pattern may vary from one value to another.

Part Number Designation						
TR	**1002**	**F**	**A**	**G**	**W**	**P**
Series	Value	Tolerance	TCR	Bond Pads	Backing	Ratio Tolerance
	First 3 digits are significant value. Last digit represents number of zeros. R indicates decimal point.	D = ±0.5%	No Letter = ±100ppm	G = Gold	W = Gold	No Letter = ±1%
		F = ±1%	A = ±50ppm	No Letter = Aluminum	L = Lapped	P = ±0.5%
		G = ±2%	B = ±25ppm		No Letter = Either	
		J = ±5%				
		K = ±10%				
		M = ±20%				

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