APC Precision Chip Resistor

- Precision Thin Film Technology
- Wide Resistance Range 1R - 3M
- Precision tolerance down to ±0.01%
- TCR as low as ±2ppm/ºC
- Tape & Reel packaging

• Standard Electrical Specifications

- Tolerance (Code): ±0.05% (A), ±0.1% (B), ±0.25% (C), ±0.5% (D), ±1% (F)
- TCR (Code): ±25ppm (E), ±50ppm (F)

Type	Power Rating at 70°C	Operating Temp Range	Max Operating Voltage	Max Overload Voltage	Tolerance / Resistance Range					TCR (PPM°C)
					±0.05%	±0.1%	±0.25%	±0.5%	±1%	
APC0201	1/32W	-55 to +155°C	15V	30V	N/A			49.9Ω to 4.99KΩ		±25
								49.9Ω to 33KΩ		±50
APC0402	1/16W	-55 to +155°C	25V	50V	49.9Ω to 12KΩ	10Ω to 255KΩ	4.7Ω to 511KΩ			±25
										±50
APC0603	1/16W	-55 to +155°C	50V	100V	4.7Ω to 332KΩ	4.7Ω to 1MΩ	1Ω to 1MΩ			±25
										±50
APC0805	1/10W	-55 to +155°C	100V	200V	4.7Ω to 1MΩ	4.7Ω to 2MΩ	1Ω to 2MΩ			±25
										±50
APC1206	1/8W	-55 to +155°C	150V	300V	4.7Ω to 1MΩ	4.7Ω to 2.49MΩ	1Ω to 2.49MΩ			±25
APC1210	1/4W									±50
APC2010	1/4W	-55 to +155°C	150V	300V	4.7Ω to 1MΩ	4.7Ω to 3MΩ	1Ω to 3MΩ			±25
APC2512	1/2W									±50

• Special Electrical Specifications

- Tolerance (Code): ±0.01% (T), ±0.05% (A), ±0.1% (B), ±0.25% (C), ±0.5% (D), ±1% (F)
- TCR (Code): ±2ppm (X), ±3ppm (Y), ±5ppm (Z), ±10ppm (B), ±15ppm (A)

Type	Power Rating at 70°C	Operating Temp Range	Max Operating Voltage	Max Overload Voltage	Resistance Range						TCR (PPM°C)
					±0.01%	±0.05%	±0.1%	±0.25%	±0.5%	±1%	
APC0402	1/16W	-55 to +155°C	25V	50V	49.9Ω to 4.99KΩ			N/A			±2, ±3
					49.9Ω to 4.99KΩ						±5
					49.9Ω to 12KΩ		49.9Ω to 60KΩ				±10
							49.9Ω to 69.8KΩ				±15
APC0603	1/16W	-55 to +155°C	50V	100V	24.9Ω to 15KΩ			N/A			±2, ±3
					24.9Ω to 15KΩ						±5
					24.9Ω to 100KΩ	4.7Ω to 332KΩ	4.7Ω to 511KΩ				±10, ±15
APC0805	1/10W	-55 to +155°C	100V	200V	24.9Ω to 30KΩ			N/A			±2, ±3
					24.9Ω to 30KΩ						±5
					24.9Ω to 200KΩ	4.7Ω to 1MΩ					±10, ±15
APC1206	1/8W	-55 to +155°C	150V	300V	24.9Ω to 49.9KΩ			N/A			±2, ±3
					24.9Ω to 49.9KΩ						±5
					24.9Ω to 499KΩ	4.7Ω to 1MΩ					±10, ±15
APC1210	1/4W	-55 to +155°C	150V	300V	24.9Ω to 49.9KΩ			N/A			±2, ±3
					24.9Ω to 49.9KΩ						±5
					24.9Ω to 499KΩ	4.7Ω to 1MΩ					±10, ±15
APC2010	1/4W	-55 to +155°C	150V	300V	24.9Ω to 100KΩ			N/A			±2, ±3
					24.9Ω to 100KΩ						±5
					24.9Ω to 499KΩ	4.7Ω to 1MΩ					±10, ±15
APC2512	1/2W	-55 to +155°C	150V	300V	24.9Ω to 100KΩ			N/A			±2, ±3
					24.9Ω to 100KΩ						±5
					24.9Ω to 499KΩ	4.7Ω to 1MΩ					±10, ±15

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The information contained herein does not form part of a contract and is subject to change without notice. ARCOL operate a policy of continual product development, therefore, specifications may change.

It is the responsibility of the customer to ensure that the component selected from our range is suitable for the intended application. If in doubt please ask ARCOL.

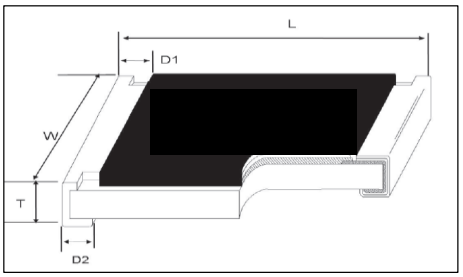
Characteristics

Item	Tol. ≤ 0.05%	Tol. > 0.05%	Method
Short Time Overload	ΔR ±0.05%	ΔR ±0.02%	RCWV*2.5 or Max. Overload Voltage - whichever is lower for 5 secs.
Insulation Resistance	> 1000 MΩ		Apply 100V DC for 1 minute
Endurance	ΔR ±0.05%	ΔR ±0.02%	70 ±2°C RCWV for 1000 hours with 1.5 hrs ON and 0.5 hrs OFF
Thermal Shock	ΔR ±0.05%	ΔR ±0.025%	-55 to +155°C, 100 Cycles
Low Temp Operation	ΔR ±0.05%	ΔR ±0.2%	1 hour, -65°C followed by 45 mins of RCWV

*RCWV (Rated Continuous Working Voltage) = √(P*R) or Max. Operating Voltage - whichever is lower

Dimensions (mm)

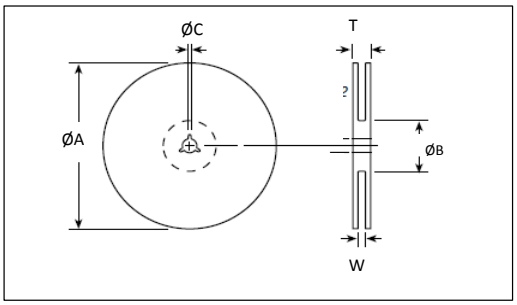
Type	L	W	T	D1	D2
APC0201	0.58 ±0.05	0.29 ±0.05	0.23 ±0.05	0.12 ±0.05	0.15 ±0.05
APC0402	1.00 ±0.05	0.50 ±0.05	0.30 ±0.05	0.20 ±0.05	0.20 ±0.05
APC0603	1.55 ±0.10	0.80 ±0.10	0.45 ±0.10	0.30 ±0.20	0.30 ±0.20
APC0805	2.00 ±0.15	1.25 ±0.15	0.55 ±0.10	0.30 ±0.20	0.40 ±0.20
APC1206	3.05 ±0.15	1.55 ±0.15	0.55 ±0.10	0.42 ±0.20	0.35 ±0.25
APC1210	3.10 ±0.15	2.40 ±0.15	0.55 ±0.10	0.40 ±0.20	0.55 ±0.25
APC2010	4.90 ±0.15	2.40 ±0.15	0.55 ±0.10	0.60 ±0.30	0.50 ±0.25
APC2512	6.30 ±0.15	3.10 ±0.15	0.55 ±0.10	0.60 ±0.30	0.50 ±0.25



Reel Dimensions (mm)

Size	ØA	ØB	ØC	W	T	Qty Per Reel
0201*	178 ±1.0	60 ±1.0	13.5 ±0.7	9.5 ±1.0	11.5 ±1.0	10,000
0402*	178 ±1.0	60 ±1.0	13.5 ±0.7	9.5 ±1.0	11.5 ±1.0	10,000
0603*	178 ±1.0	60 ±1.0	13.5 ±0.7	9.5 ±1.0	11.5 ±1.0	5,000
0805*	178 ±1.0	60 ±1.0	13.5 ±0.7	9.5 ±1.0	11.5 ±1.0	5,000
1206*	178 ±1.0	60 ±1.0	13.5 ±0.7	9.5 ±1.0	11.5 ±1.0	5,000
1210*	178 ±1.0	60 ±1.0	13.5 ±0.7	9.5 ±1.0	11.5 ±1.0	5,000
2010**	178 ±1.0	60 ±1.0	13.5 ±0.7	13.5 ±1.0	15.5 ±1.0	4,000
2512**	178 ±1.0	60 ±1.0	13.5 ±0.7	13.5 ±1.0	15.5 ±1.0	4,000

* Paper Tape
** Plastic Embossed Tape



Ordering Procedure

Standard Resistor: Series, Size, Tol Code, Resistance Value, TCR Code

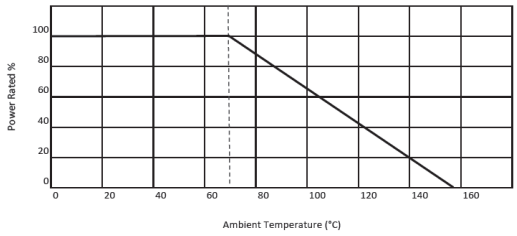
Eg: APC0603A100RB

- APC0603 — 1/16 watt (0603 size)
- A — ±0.05%
- 100R — 100Ω
- B — ±10ppm

Tol: ±0.01% (T), ±0.05% (A), ±0.1% (B), ±0.25% (C), ±0.5% (D), ±1% (F)

TCR: ±2ppm (X), ±3ppm (Y), ±5ppm (Z), ±10ppm (B), ±15ppm (A), ±25ppm (E), ±50ppm (F)

Derating Curve



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