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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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.

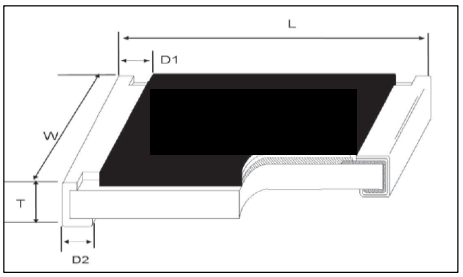
Characteristics

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)

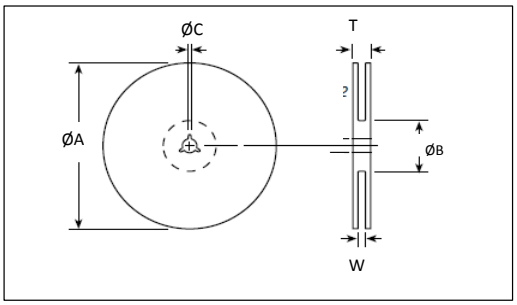
Type	L	W	T	D1	D2
APC0201	0.58 ±0.05	0.29 ±0.05	0.23 ±0.05	0.12 ±0.05	0.15 ±0.05
APC0402	1.00 ±0.05	0.50 ±0.05	0.30 ±0.05	0.20 ±0.05	0.20 ±0.05
APC0603	1.55 ±0.10	0.80 ±0.10	0.45 ±0.10	0.30 ±0.20	0.30 ±0.20
APC0805	2.00 ±0.15	1.25 ±0.15	0.55 ±0.10	0.30 ±0.20	0.40 ±0.20
APC1206	3.05 ±0.15	1.55 ±0.15	0.55 ±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

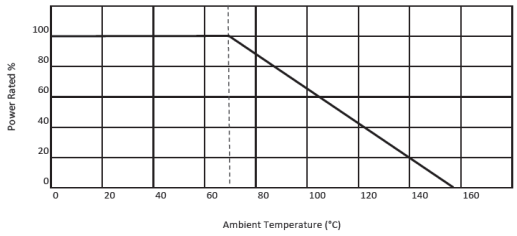
Eg: APC0603A100RB

- 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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Mouser Electronics

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Ohmite:

APC0805B100KN APC1206B100KN APC0603B15K0N APC0603B15K4N APC1206B100RN APC0805T100RZ APC1206T499RZ APC1206B1K00N APC0805T4K99Z APC1206T49K9Z APC1206B499RN APC1206T200RZ APC0805B100RN APC0805T10K0Z APC1206B10K0N APC0603B20K0N APC0603B49K9N APC1206B2K00N APC0603B332KN APC0603T100RZ APC0603T4K99Z APC0603B1K00N APC0805B24R9N APC1206B49R9N APC1206B250RN APC0805T1K00Z APC0805T200RZ APC0805B250RN APC0603B4K99N APC0603B100KN APC0603B205KN APC0603T10K0Z APC0805T499RZ APC1206T100RZ APC1206T4K99Z APC0603B2K00N APC1206T10K0Z APC0805T49R9Z APC0603B19K1N APC0805B1K00N APC0805B200RN APC0805T24R9Z APC0603B200KN APC0805B49K9N APC1206B4K99N APC0805B4K99N APC0603B75K0N APC1206T49R9Z APC0603B10K0N APC0805B2K00N APC0603T15K0Z APC1206B200RN APC1206B49K9N APC1206T2K00Z APC1206T1K00Z APC0603T200RZ APC0805B499RN APC0805B10K0N