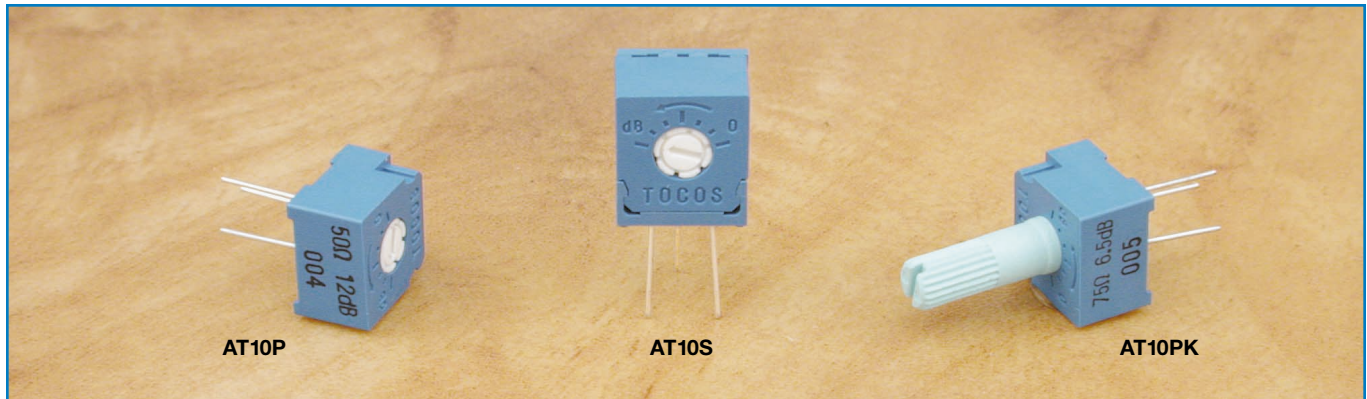


10mm Square, Single-Turn, Through-Hole Sealed Cermet Attenuators



Features

- 10mm square, single-turn, through-hole, sealed attenuators
- Cermet element
- Top and side adjust styles available
- Flush single-slot rotor adjustment
- Optional 20mm or 30mm plastic shaft with knurled, slotted end style
- 50Ω, 75Ω or 600Ω nominal impedance
- 6.5dB, 12dB or 20dB nominal attenuation
- 3-pin triangular PCB patterns
- Meets UL 94V-0 flammability requirements
- Sealed to withstand immersion cleaning

Specifications

Electrical

Nominal Impedance 50Ω, 75Ω, 600Ω

Attenuation Range at DC

Nominal Attenuation	6.5dB	12dB	20dB
Attenuation Tolerance	±0.7dB	±1.1dB	±1.5dB
Minimum Attenuation	0.4dB max.	0.6dB max.	1.2dB max.

Power Rating 0.2 watt at +70°C, 0 watt at +100°C

Insulation Resistance 100MΩ minimum at 1,000VDC

Dielectric Strength 1,000VAC, 1 minute

Adjustment Travel 140° ± 10°

Mechanical

Mechanical Travel 150° ± 10°

Shaft Torque 25 to 200 gf·cm (0.35 to 2.77 oz·in)

Stop Strength 800 gf·cm (11.09 oz·in) max.

Flammability of Plastic Materials Meets UL 94V-0

Nominal Weight 1.4g (P); 1.7g (S)
1.7g (PK 20mm shaft length)
2.0g (PK 30mm shaft length)

Marking Impedance, attenuation, dial locators,
terminal identification, date code

Environmental

Temperature Range -55°C to +100°C

Load Life +70°C, 250 hours with rated load
ΔA ≤ 0.5dB, ΔI ≤ 5%

Moisture and Load Life +40°C, 90-95% RH
90 minutes on, 30 minutes off,
0.2 watt, 120 cycles
ΔA ≤ 0.5dB, ΔI ≤ 5%

Thermal Shock -55°C, +100°C,
30 minutes each, 5 cycles without load
ΔA ≤ 0.5dB, ΔI ≤ 5%

Shock 50G, 11ms, 6 directions, 3 times each
ΔA ≤ 0.5dB, ΔI ≤ 5%

Vibration 10-55Hz, 1.5mm amplitude,
3 directions, 2 hours each
ΔA ≤ 0.5dB, ΔI ≤ 5%

Soldering Heat Resistance 350°C, 3 seconds
ΔA ≤ 0.1dB, ΔI ≤ 1%

Seal Test +85°C, hot water for 1 minute

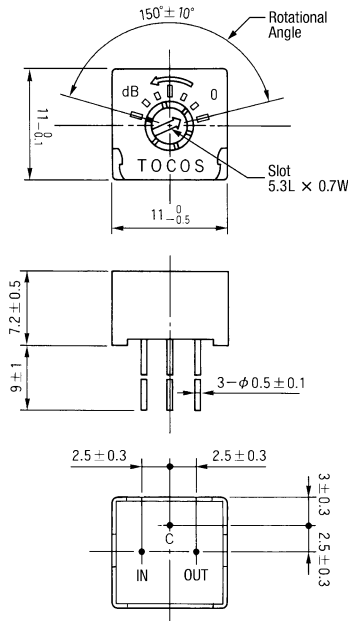
Rotational Life 50 cycles without load
ΔA ≤ 1dB, ΔI ≤ 10%

ΔA = Attenuation Change at DC; ΔI = Impedance Change Ratio

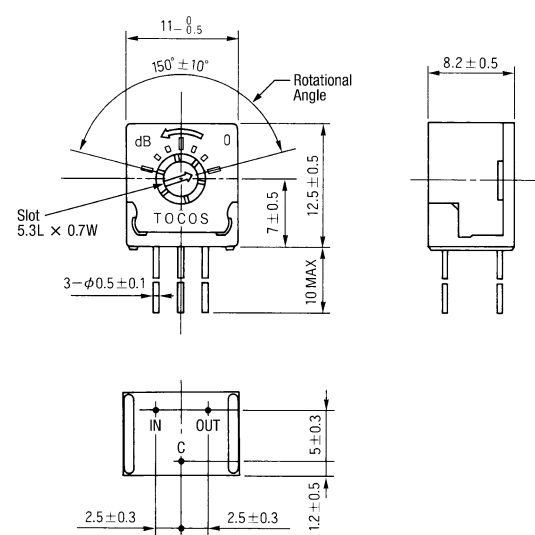
Model	Nominal Impedance	Nominal Attenuation	Frequency Range	Attenuation Flatness	Return Loss	
				dB max.	dB min.	VSWR max.
AT10P & AT10PK	50Ω	6.5dB	DC ~ 300MHz	0.2	18	1.29
			DC ~ 500MHz	0.3	14	1.50
		12dB	DC ~ 300MHz	0.2	17	1.33
			DC ~ 500MHz	0.3	13	1.58
		20dB	DC ~ 300MHz	A* = 0~10dB: 0.2	20	1.22
				A* = 10~20dB: 2.0		
		DC ~ 500MHz	A* = 0~10dB: 0.3	16	1.38	
			A* = 10~20dB: 4.5			
	75Ω	6.5dB	DC ~ 300MHz	0.2	23	1.15
			DC ~ 500MHz	0.3	17	1.33
		12dB	DC ~ 300MHz	0.2	20	1.22
			DC ~ 500MHz	0.3	16	1.38
		20dB	DC ~ 300MHz	A* = 0~10dB: 0.2	20	1.15
				A* = 10~20dB: 2.0		
		DC ~ 500MHz	A* = 0~10dB: 0.3	16	1.38	
		A* = 10~20dB: 4.5				
600Ω	6.5dB	DC ~ 100kHz	0.3	23	1.15	
	12dB	DC ~ 100kHz	0.3	20.8	1.20	
	20dB	DC ~ 100kHz	0.3	20.8	1.20	
AT10S	50Ω	6.5dB	DC ~ 300MHz	0.15	23	1.15
			DC ~ 500MHz	0.4	14	1.50
		12dB	DC ~ 300MHz	0.15	21	1.20
			DC ~ 500MHz	0.4	13	1.58
		20dB	DC ~ 300MHz	A* = 0~13dB: 0.15	19	1.25
				A* = 13~20dB: 0.7		
		DC ~ 500MHz	A* = 0~13dB: 0.4	12	1.67	
			A* = 13~20dB: 3.0			
	75Ω	6.5dB	DC ~ 250MHz	0.2	20	1.22
		12dB	DC ~ 250MHz	0.2	19	1.25
		20dB	DC ~ 250MHz	A* = 0~14dB: 0.25	17	1.33
			A* = 14~20dB: 1.3			
	600Ω	6.5dB	DC ~ 100kHz	0.3	23	1.15
		12dB	DC ~ 100kHz	0.3	20.8	1.20
		20dB	DC ~ 100kHz	0.3	20.8	1.20

* A = Attenuation

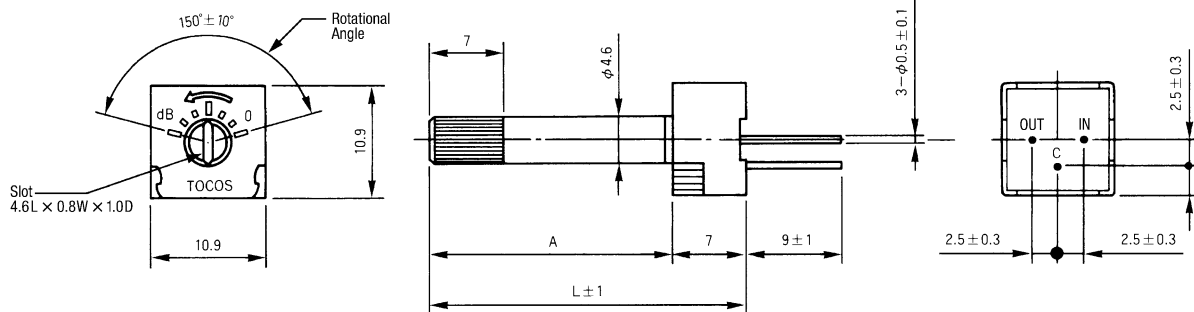
AT10P
No Shaft, Flush Single-Slot, Top Adjust
P Terminal Style



AT10S
No Shaft, Flush Single-Slot, Side Adjust
S Terminal Style



AT10PK
13mm or 23mm Plastic Shaft with Knurled, Slotted End Style, Top Adjust, PK Terminal Style

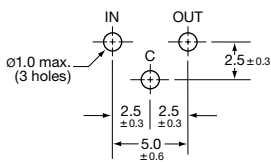


AT10PK Shaft Codes and Dimensions

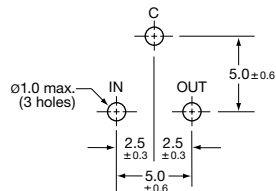
Shaft Code	L Shaft + Housing Length	A Actual Shaft Length
20S	20mm	13mm
30S	30mm	23mm

Recommended PCB Layouts

P & PK Pin-Out

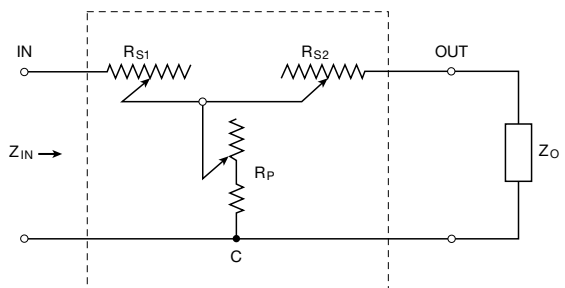


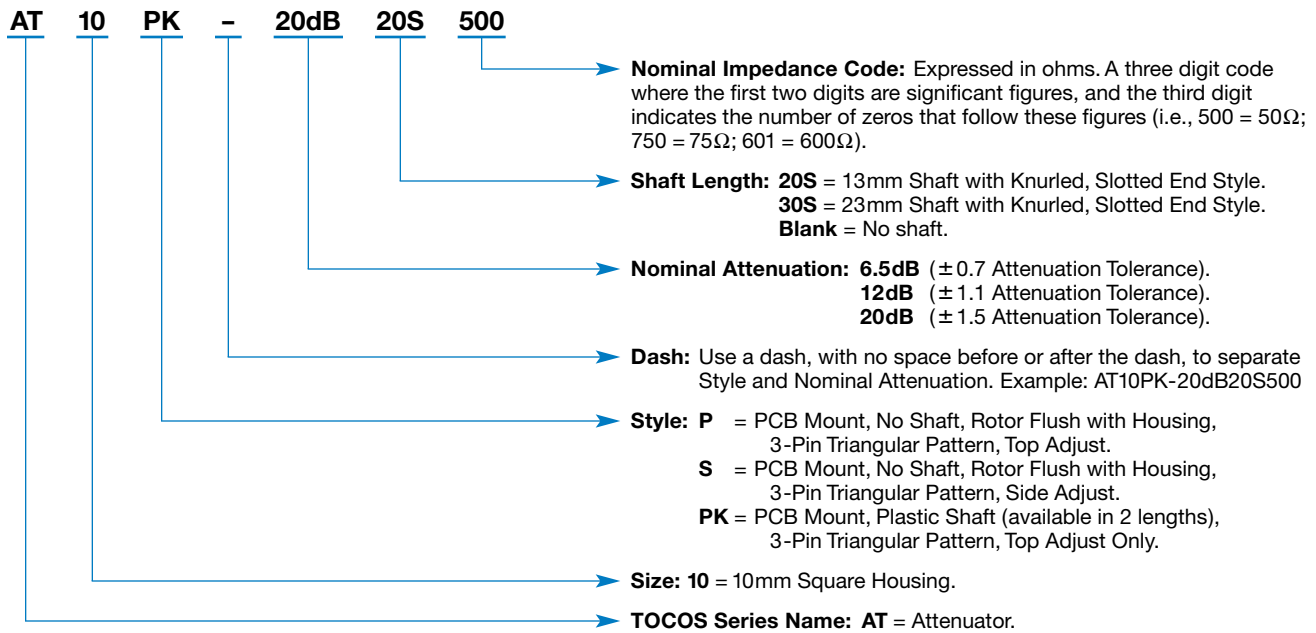
S Pin-Out



Unit: mm

Electrical Schematic





Packaging

Standard: **Bulk Packaging** **Quantity**
 100 pieces per box.

Soldering and Cleaning Guidelines

For soldering, cleaning and other information, refer to the Guidelines and Precautions.