ATC AT Series 0603 RF/Microwave Attenuator

- Thin Film Design
- Power Rating Up to 1 watt
- Frequency Response +/- 0.5 dB
- Characterized to 20 GHz
- CPW and Microstrip
 Applications

- EIA 0603 SMT
- Highest Power in Class
- AIN construction
- Balanced Pi design
- Non-Magnetic
- RoHs compliant

ATC's new RF/Microwave SMT Attenuator Series (AT) is manufactured with the highest quality materials for reliable and repeatable performance. These devices are constructed with Aluminum Nitride (AIN) and are available in a standard EIA 0603 case size. The AT Series exhibits excellent performance characteristics for the most demanding RF/ Microwave applications.

The AT provides virtually flat loss over a broad frequency spectrum. Thin film metallization provides for very stable characteristics over temperature and time. Its balanced PI design provides even current distribution and accurate attenuation characteristics from DC to 20 GHz. It is designed to meet a wide range of RF and microwave large and small signal level applications. The AT is ideal for impedance matching, input padding, signal level tuning, and many other critical RF/Microwave applications. The AT is rated highest power in class and is suitable for microstrip and CPW applications.

The non-magnetic termination is available providing a range of attachment options such as eutectic die-bonding, conductive epoxies, and soldering. The AT is fully compatible with high speed automated pick-and-place processing.

Typical applications: Telecommunications, Satellite Communications, Cellular Base Stations, Microwave Radio, ISM, RF/Microwave Power, Military /Aerospace, Test and Measurement.

Functional applications: Impedance Matching, Input Padding, Signal Level Tuning, Signal Conditioning.

Note: Consult Factory for other attenuation values, termination styles and case sizes.



ENVIRONMENTAL SPECIFICATIONS

OPERATING TEMPERATURE: -55°C to +150°C 100% inspection Per MIL-STD-883

ELECTRICAL AND MECHANICAL SPECIFICATIONS

NOMINAL IMPEDANCE: 50 Ohms

FREQUENCY RANGE: DC to 20 GHz

VALUES AVAILABLE: 0 to 10 dB (1 dB increments)

INPUT POWER CW: 1W: 0 to 6 dB 0.75W: 7 to 10 dB

VSWR: 1.25:1 typical

FREQUENCY RESPONSE (dB):

D.C. to 10 GHz: ±0.50 dB >10 GHz: ±1 dB

SUBSTRATE MATERIALS: AIN (1 to 10 dB) Al₂O₃ (0 dB)

RESISTORS: Tantalum Nitride

TERMINAL: Thin Film metal stack, Au

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THE ENGINEERS' CHOICE®

www.atceramics.com

Mechanical Configurations



Dimensions are in inches

Part Thickness .020 ± .001 (all values)



ATC PART NUMBER CODE



ATC Europe saleseur@atceramics.com ATC Asia sales@atceramics-asia.com

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ATC AT Series 0603 RF/Microwave Attenuator Performance Data





All testing performed on 13.3-mil-thick Rogers RO4350 microstrip board, with the UUT subtending a 44 mil gap in a 30 mil-wide center trace (nominal 50-ohm characteristic impedance). Measurements were made using a four-receiver architecture. Measurements have been de-embedded to the edges of the UUT using a standard TRL calibration procedure.



RF / Microwave Attenuator Modeled Data Description

Models were simulated using Ansoft HFSS version 14 in a perfect 50 ohm environment with ideal ports placed at the edge of the pads to ground. The boundary condition was set to be a radiating boundary in air.

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ATC # 001-1149 Rev. D, 11/19

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Kyocera AVX:				
AT0603T03ECATE	AT0603C10ECAC	7 AT0603T06ECATI	AT0603C10ECAT	D AT0603T06ECAS3
AT0603T03ECAS3	AT0603T06ECAC7	AT0603C10ECAS3	AT0603T03ECAC7	AT0603T08ECATD
AT0603T08ECAC7	AT0603T02ECAC7	AT0603T02ECATD	AT0603T00ECATD	AT0603T02ECATB
AT0603T05ECAS3	AT0603T04ECATB	AT0603T05ECAC7	AT0603T01ECATB	AT0603T07ECATB
AT0603T09ECATD	AT0603T02ECAS3	AT0603T09ECAC7	AT0603T07ECAS3	AT0603T05ECATD
AT0603T04ECAC7	AT0603T04ECAS3	AT0603T04ECATD	AT0603T07ECAC7	AT0603T01ECATD
AT0603T01ECAC7	AT0603T01ECAS3	AT0603T07ECATD	AT0603T06ECATB	AT0603T09ECATB
AT0603T03ECATB	AT0603T00ECAC7	AT0603T09ECAS3	AT0603T08ECAS3	AT0603T00ECATB
AT0603T08ECATB	AT0603T05ECATB	AT0603C08ECAS3	AT0603C07ECATB	AT0603C09ECAS3
AT0603C08ECATD	AT0603C09ECATB	AT0603C08ECAC7	AT0603C08ECATB	AT0603C09ECATD
AT0603C07ECAS3	AT0603C07ECATD	AT0603C09ECAC7	AT0603C07ECAC7	