Agilent 355C/D

VHF Attenuators dc to 1 GHz

Data Sheet

Features and applications

- Broad frequency coverage, dc to 1000 megahertz
- Low insertion loss
- Low SWR and negligible leakage

- Measure gain, attenuation, frequency response
- Broaden usefulness of present equipment
- Calibrate signal sources

Description

Precision attenuation from dc to1000 MHz is available with these attenuators. Model 355C provides 0 to 12 dB in 1-dB steps and Model 355D provides 0 to 120 dB in 10-dB steps. Standard 355C's and D's are equipped with BNC connectors. Units can be coupled together with a standard UG-491A/U male-to-male BNC adapter. Option 001 Type N connector 355's are ideally suited for applications such as receiver testing where minimum leakage is important. Option 001 355's may be coupled together with the 1250-0778 Type N male-to-male adapter (UG-57B/U). Using the 355C and 355D in series provides precision, the attenuation in 1-dB steps from 0 to 132 dB. Also, these attenuators may be connected with either terminal as input or output.

Basic design

A departure from the usual attenuator design has resulted in an accurate, compact, and rugged attenuator with low insertion loss and low SWR. Error is reduced to a minimum on all steps. Attenuator sections are inserted and removed by camactuated microswitches which keep lead lengths short. This system minimizes stray capacitances and inductances and extends the upper frequency limit of the 355 attenuators to 1000 MHz. In addition, the phase shift is kept at a minimum. Electrical length for the 355 C/D is approximately 60 cm at 0 dB (no sections engaged). For each section engaged, the electrical length decreases approximately 2 cm.

In addition, the design provides a rugged, compact unit in which the component parts are rigidly positioned and well shielded so that neither stray pickup nor signal leakage is a problem. The 355 attenuators are available for either bench or panel mounting (Option 003). To enable the attenuator to be panel mounted, the shaft has been extended 0.18 in. and the casting drilled and tapped for (4) 6-32 screws. Remotely programmable units are also available under model numbers 355E and 355F.

Specifications

Model 355C

Attenuation: 12 dB in 1-dB steps.
Frequency range: DC to 1000 MHz.
Overall accuracy: ±0.1 dB at 1000 MHz;
± 0.25 dB dc, to 500 MHz; ± 0.35 dB, dc to 1000 MHz.

Model 355D

Attenuation: 120 dB in 10-dB steps.
Frequency range: DC to 1000 MHz.
Overall accuracy: ± 0.3 dB to 120 dB at 1000 Hz;
± 1.5 dB to 90 dB below 1000 MHz; ± 3 dB to 120 dB below 1000 MHz.

For both models

Impedance: 50 ohms nominal.
Power handling capability: 0.5 watt average, 350 watts peak.
Maximum SWR (input and output): 1.2 below 250 MHz;
1.3 below 500 MHz; 1.5 below 1000 MHz.
Maximum insertion loss (insertion loss at 0 dB):
0.20 dB + 2.30 dB/GHz.
Dimensions (maximum envelope, bench or panel mount):
152 x 71 x 69 mm (6 in. long, 2 13/16 in. wide, 2 11/16. high).
Weight (bench or panel mount): net, 0.7 kg (1 1/2 lb);
shipping, 1.4 kg (3 lb).
Option 001: 355C, 355D Type-N connectors
Option 003: 355C, 355D panel mounting capability
Option 005: 355C

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