

Model 3456
Programmable Attenuator
with optional TTL Interface

dc to 3.0 GHz
1 Watt
75 Ω



Features

- /// Higher Frequency range to 3 GHz.
- /// Cost Effective design for Wireless/Cable Applications.
- /// Custom Configurations including bus controlled attenuator subsystems.

Description

The 3456 Series 75 Ω Programmable Step Attenuators are designed for use in automatic test equipment and OEM systems operating in the dc to 3 GHz frequency range. Custom designed configurations are available upon request. Each cell contains a double-pole, double-throw relay that provides a zero path or attenuated path for the RF signal.

Microstrip circuitry and special compensation techniques produce flat attenuation versus frequency characteristics. The microstrip construction, using thin-film circuit elements, ensures product uniformity. To minimize RF leakage, the 3400 Series Attenuators are provided with gold-plated contact areas and feedthrough filters at each control terminal.

Specifications

NOMINAL IMPEDANCE: 75 Ω
FREQUENCY RANGE: dc to 3.0 GHz

MAXIMUM SWR:	
Frequency Range (GHz)	SWR
dc - 2.15	1.45
2.15 - 3	1.50

CELL CONFIGURATIONS:			
Model Number	NO. Cells	Attenuation Range/Steps (dB)	Cell Increments (dB)
3456-63	6	63/1	1, 2, 4, 8, 16, 32

Programmable Attenuators

INCREMENTAL ATTENUATION ACCURACY:	
Attenuation Range (dB)	Accuracy
1 - 31	±0.5 dB or 3% whichever is greater
32 - 63	

MAXIMUM INSERTION LOSS (dB):	
Frequency Range (GHz)	Loss (dB)
dc - 2.15	2.10
2.15 - 3	3.30

- MONOTONICITY:** dc to 3.0 GHz
POWER RATING: 1 watt average to 25°C ambient temperature, derated linearly to 0.25 watt @ 70°C. 50 watts peak (5 μsec pulse width; 1% duty cycle)
POWER COEFFICIENT: <0.005 dB/dB/watt
RATED SWITCH LIFE: 300,000 cycles minimum per cell @ 30 dBm
SWITCHING TIME: 10 msec maximum at nominal rated voltage
RELEASE TIME: 6 msec maximum
CYCLING RATE: 5 Hz maximum per relay
OPERATING VOLTAGE: +12 Vdc (+13 V maximum; +9 V minimum)
OPERATING CURRENT: 40 mA typical per cell @ +12 V
TEMPERATURE RANGE (Operating): -30°C to +70°C
TEST DATA: Test data is available at additional cost.
CONNECTORS: Type F female connectors per MIL-STD-348 interface dimensions - mate nondestructively with MIL-C-39012 connectors.
CONTROL TERMINALS: 0.040 inch (1 mm) diameter solderable leads.
CONSTRUCTION:

Housing: Aluminum
 Connectors: Brass body with Nickel plating and brass contact with gold plating.

Control terminals: Brass/Copper, Silver plated

WEIGHT (Typical): 99 g (3.5 oz)

CONTROL CONFIGURATION:

Standard Unit: One terminal is connected to case ground and the remaining terminals are provided for activation of individual cells. Attenuation is fail-safe to "0" setting in the absence of a control voltage. Application of a voltage (+) to a particular cell causes it to switch to the attenuate position.

