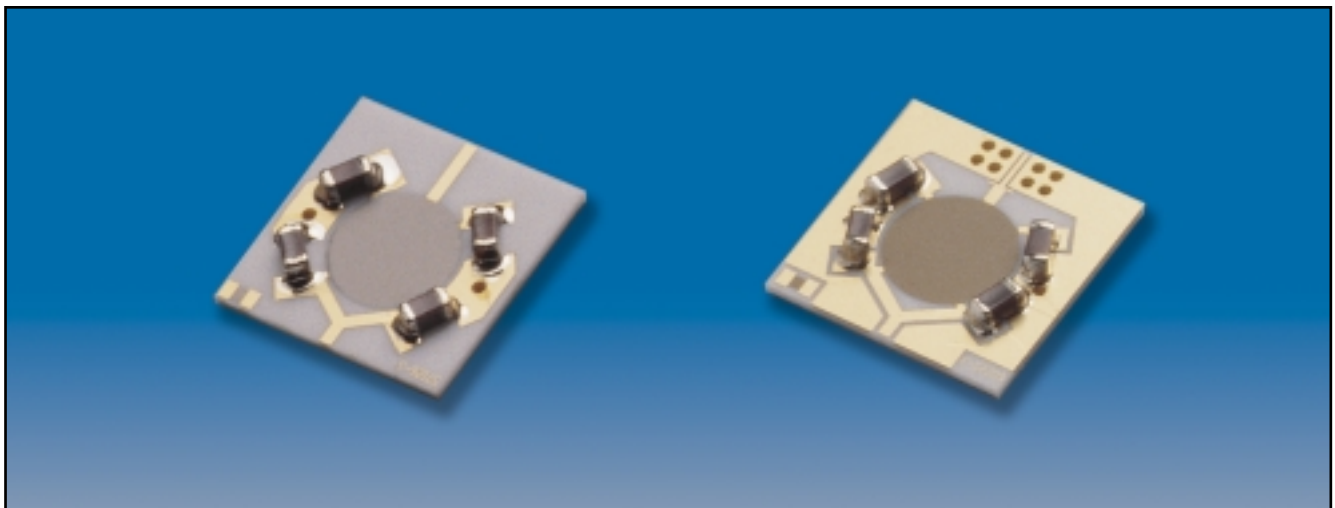


Bias Termination

Model DBT60, DBT60CPW

50 kHz to 65 GHz



Bias Termination

The Bias Termination is designed to meet the stringent electrical performance requirements and small size of passive components in optical communication networks. A broad bandwidth of 50 kHz to 65 GHz, with very good return loss, makes it ideal to provide DC Bias in 40 Gbps optical modulators. In addition, the small size of the Bias terminations makes integration of the Biasing network easier.

The two different models available are DBT60 and DBT60CPW. Depending on the type of substrate configuration used within an Optical Modulator, one can use the DBT60 for 0.25 mm thick Microstrip or DBT60CPW for 0.25 mm thick CPW substrate. Bias Terminations can be customized to meet customer requirements for different substrates types, substrate thickness, frequency ranges etc.

Features

- *Low SWR*
- *Broad Frequency Performance*
- *High Voltage Capacity*
- *Small Form Size*

Application

Figure 1 shows a typical block diagram of a Lithium Niobate Optical Modulator. Since the optical modulator is a voltage-controlled device. It does not require high current. In this case, bias can be provided through a high value shunt capacitor. Therefore DC voltage applied across the Optical Modulator will be the voltage applied across the Capacitor and the DC bias is supplied through the internal Bias Termination rather than using an external Bias Tee. This approach has the advantage of reducing the cost and size of the system by eliminating the need for an external Bias Tee.

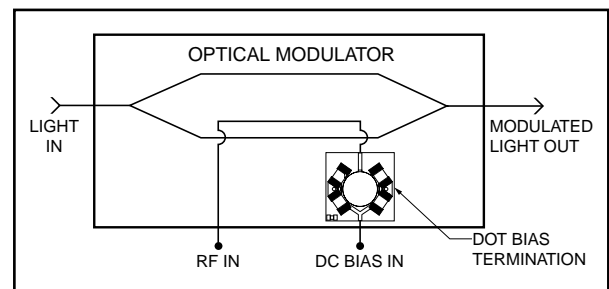
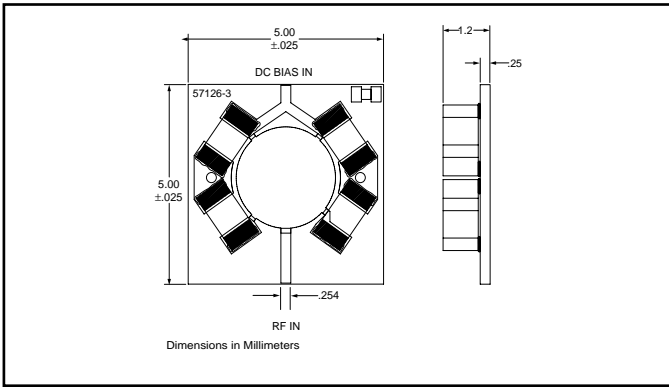


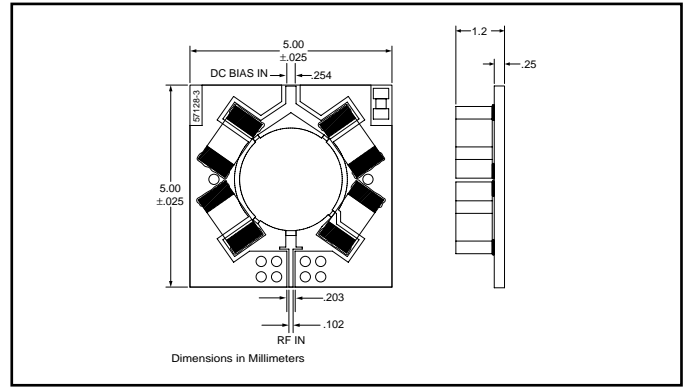
Figure 1, Lithium Niobate Optical Modulator

Specifications

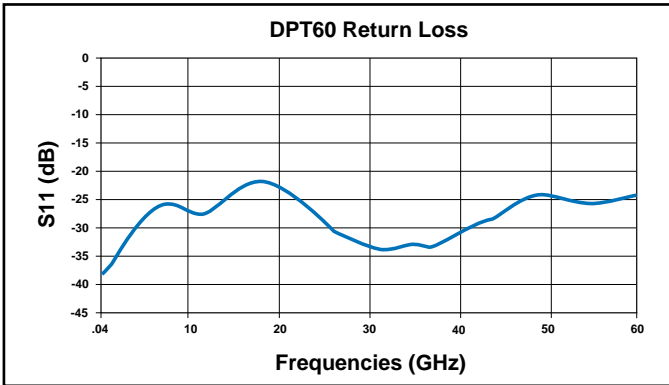
Model Number	Frequency Range	Return Loss	DC Voltage	DC Current	Operating Temperature
DBT60	50 KHz to 60 GHz	≥18 dB typical	16V	200 mA	0°C to 70°C
DBT60CPW	50 kHz to 50 GHz 50 GHz to 60 GHz	≥17 dB typical ≥14 dB typical	16V	200 mA	0°C to 70°C



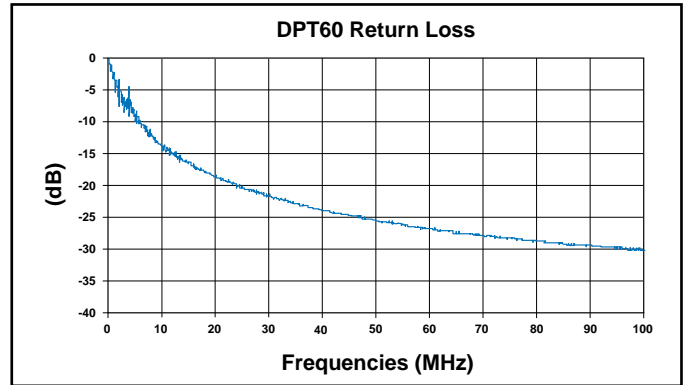
DBT60 Outline Drawing



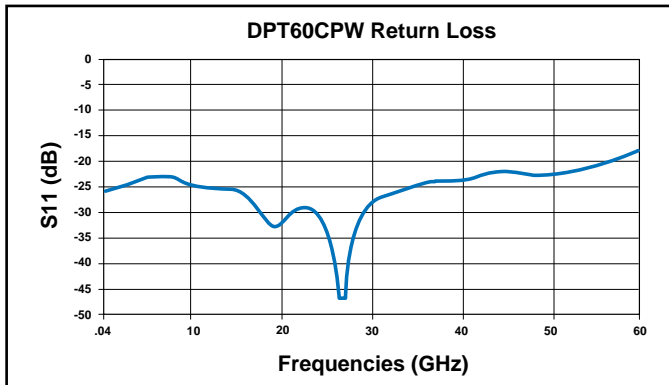
DBT60CPW Outline Drawing



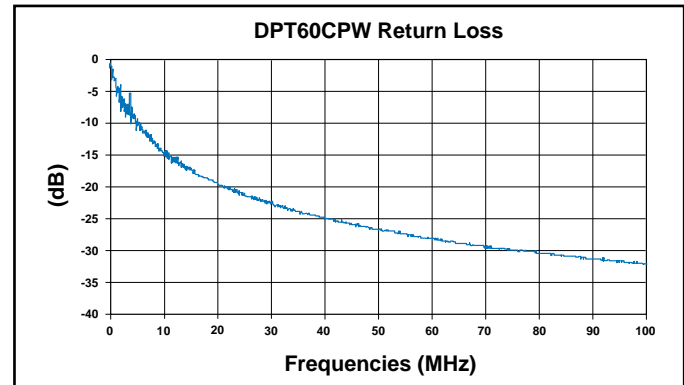
Typical High Frequency Return Loss measured on DBT60 over the range of 40 MHz to 65 GHz using Anritsu 37397C VNA.



Typical DBT60 Low Frequency Return Loss Performance



Typical High Frequency Return Loss measured on DBT60CPW over the range of 40 MHz to 65 GHz using Anritsu 37397C VNA.



Typical DBT60CPW Low Frequency Return Loss Performance

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