Components

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BIAS TEES MAGIC TEES

A **Bias Tee** is a diplexer, which splits incoming signals from a common port into two paths (sometimes called "channels"), dependent on frequency. It is a three-port network used to supply DC currents or voltages to RF devices, and for setting the DC bias point, without disturbing other components. The DC port injects a bias onto the RF path by adding a DC bias level to a radio-frequency signal from the RF port onto the RF-DC port. The biased RF signal can be sent to a remote device to provide both an RF signal and a DC supply.

A **Waveguide Magic Tee** is a four-port hybrid coupler and/or power divider with two collinear arms, an E-plane (difference) arm and an H-plane (sum) arm. HASCO Magic Tees offer a nominal insertion loss and high isolation between the two collinear arms and between the sum and difference arms.

BIAS TEES

рното	PART #	CONNECTOR	TYPE	SPECIFICATIONS
	HBT4-20040-MF	2.92mm Male to 2.92mm Female	Coaxial	Freq: 200 MHz - 40 GHz VSWR: 2.0:1 Max. IL: 1.5dB Typ. RL: -15dB Typ Voltage: 225mA Temp: -55° to 125°C
In this figure, an RF signal is introduced to the RF & DC port and a DC bias is added from the DC Only port. A Bias Tee can also work in reverse order to remove a DC bias that is received from the RF & DC port, while allowing only the RF signal to pass to the RF port. In the reverse scenario, the DC Only port can be c onnected to a VDC port of an active device, such as an amplifier, to power it.		$\begin{array}{c c} \text{RF only} & \longrightarrow & & \\ & & & & \\ & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & & $		Properties that are important to a bias tee are RF bandwidth, insertion loss and mismatch at the two RF ports, the maximum DC current, and video bandwidth of the DC port.

WAVEGUIDE MAGIC TEES

рното	PART #	WAGEGUIDE BAND	FLANGE	SPECIFICATIONS
Port Ports	HWMT10-9030T-ER	W-Band	WR-10 UG-387/UM	Freq: 75 - 105 GHz IL: 1.0dB Typ. RL: 14dB MIN (H Port) 12.5 dB Min (E Port) Isolation: 30 dB Min E-H Ports 20 dB Min Colinear Points Balance: 0.5 dB Max
Port i vot 2 Input 111 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	HWMT12-7330T-ER	E-Band	WR-12 UG-387/U	Freq: 60 - 86 GHz IL: .35dB Typ. RL: 14dB MIN (H Port) 12.5 dB Min (E Port) Isolation: 30 dB Min E-H Ports 20 dB Min Colinear Points Balance: 0.5 dB Max
Forn ports	HWMT15-6130T-ER	V-Band	WR-15 UG-385/U	Freq: 50 - 72 GHz IL: 1.0dB Typ. RL: 14dB MIN (H Port) 12.5 dB Min (E Port) Isolation: 30 dB Min E-H Ports 20 dB Min Colinear Points Balance: 0.5 dB Max

Product specifications subject to change without notification. Full specifications can be found at <u>www.hasco-inc.com</u>.