



HASCO
COMPONENTS

888-498-3242
www.hasco-inc.com



Scan or Click to
[View and Download](#)
[HASCO Catalog Pages](#)

RF COAXIAL and WAVEGUIDE ADAPTERS

HASCO offers In-Series Adapters and Between Series Adapters in Precision, Low PIM and Coax-to-Waveguide Adapter options. Our Coax Adapters come in N, TNC, SMB, SMA, 3.5mm, 2.92mm, 2.4mm, 1.85mm and 1.0mm connector configurations, operating up to 110 GHz. HASCO's Coax to Waveguide Adapters interface to WR-10 through WR-430 waveguides, operating from 1.7 GHz to 110 GHz in both right angle and end launch designs.

IN-SERIES ADAPTERS

Type	Config.	Part #/Type	Specifications
1.0mm	Male to Male	2431-00SF  	Freq: DC-110 GHz VSWR: 1.28:1 Max Temp: -55° to 165°C
	Male to Female	2430-00SF  	Freq: DC-110 GHz VSWR: 1.28:1 Max Temp: -55° to 165°C
	Female to Female	2432-00SF  	Freq: DC-110 GHz VSWR: 1.28:1 Max Temp: -55° to 165°C
		2432-01SF Bulkhead  	Freq: DC-110 GHz VSWR: 1.28:1 Max Temp: -55° to 165°C
1.85mm	Male to Male	1831-00SF  	Freq: DC-67 GHz VSWR: 1.25:1 Max Temp: -55° to 165°C
		185P-185P-RA Right Angle  	Freq: DC-67 GHz VSWR: 1.35:1 Max Temp: -55° to 165°C
	Male to Female	1830-00SF  	Freq: DC-67 GHz VSWR: 1.25:1 Max Temp: -55° to 165°C
		185P-185J-RA Right Angle  	Freq: DC-67 GHz VSWR: 1.35:1 Max Temp: -55° to 165°C
	Female to Female	1832-00SF  	Freq: DC-67 GHz VSWR: 1.25:1 Max Temp: -55° to 165°C
		185J-185J-RA Right Angle  	Freq: DC-67 GHz VSWR: 1.35:1 Max Temp: -55° to 165°C
2.40mm	Male to Male	1431-00SF  	Freq: DC-50 GHz VSWR: 1.20:1 Max Temp: -55° to 135°C
		24P-24P-RA Right Angle  	Freq: DC-50 GHz VSWR: 1.30:1 Max Temp: -55° to 125°C
	Male to Female	1430-00SF  	Freq: DC-50 GHz VSWR: 1.20:1 Max Temp: -55° to 135°C
		24J-24P-RA-01 Right Angle  	Freq: DC-50 GHz VSWR: 1.30:1 Max Temp: -55° to 125°C
	Female to Female	1432-00SF  	Freq: DC-50 GHz VSWR: 1.20:1 Max Temp: -55° to 135°C
		24J-24J-RA Right Angle  	Freq: DC-50 GHz VSWR: 1.30:1 Max Temp: -55° to 125°C

Type	Config.	Part #/Type	Specifications
2.92mm	Male to Male	1031-00SF  	Freq: DC-40 GHz VSWR: 1.15:1 Max Temp: -55° to 165°C
		29P-29P-MM  	Freq: DC-40 GHz VSWR: 1.15:1 Max Temp: -55° to 105°C
		29P-29P-RA Right Angle  	Freq: DC-40 GHz VSWR: 1.25:1 Max Temp: -55° to 100°C
	Male to Female	1030-00SF  	Freq: DC-40 GHz VSWR: 1.15:1 Max Temp: -55° to 165°C
		1030-10SF Bulkhead  	Freq: DC-40 GHz VSWR: 1.15:1 Max Temp: -55° to 165°C
		29P-29J-MF  	Freq: DC-40 GHz VSWR: 1.15:1 Max Temp: -55° to 105°C
		29P-29J-RA-01 Right Angle  	Freq: DC-40 GHz VSWR: 1.15:1 Max Temp: -55° to 105°C
	Female to Female	1032-00SF  	Freq: DC-40 GHz VSWR: 1.15:1 Max Temp: -55° to 165°C
		1032-10SF Bulkhead  	Freq: DC-40 GHz VSWR: 1.15:1 Max Temp: -55° to 165°C
		1032-13SF Bulkhead 4-Hole Flange  	Freq: DC-40 GHz VSWR: 1.15:1 Max Temp: -55° to 165°C
		29J-29J-FF  	Freq: DC-40 GHz VSWR: 1.15:1 Max Temp: -55° to 105°C
		29J-29J-FF-BH Bulkhead  	Freq: DC-40 GHz VSWR: 1.15:1 Max Temp: -10° to 165°C
		29J-29J-RA-01 Right Angle  	Freq: DC-110 GHz VSWR: 1.28:1 Max Temp: -55° to 165°C
3.5mm	Male to Male	35P-35P-MM-01 	Freq: DC-33 GHz VSWR: 1.15:1 Max Temp: -65° to 165°C
	Male to Female	35P-35J-MF-01 	Freq: DC-33 GHz VSWR: 1.15:1 Max Temp: -65° to 165°C
	Female to Female	35J-35J-FF-01 	Freq: DC-33 GHz VSWR: 1.15:1 Max Temp: -65° to 165°C

IN-SERIES ADAPTERS

Type	Config.	Part #/Type	Specifications
SSMA	Male to Male	HAD-SSMAP-SSMAP 	Freq: DC-27 GHz VSWR: 1.20:1 Max
	Male to Female	HAD-SSMAP-SSMAJ 	Freq: DC-27 GHz VSWR: 1.20:1 Max
	Female to Female	HAD-SSMAJ-SSMAJ 	Freq: DC-27 GHz VSWR: 1.20:1 Max

BNC	Male to Male	HAD-BNCP-BNCP 	Freq: DC-4 GHz VSWR: 1.20:1 Max
	Female to Female	HAD-BNCJ-BNCJ 	Freq: DC-4 GHz VSWR: 1.20:1 Max
		HAD-BNCJ-BNCJ-BH Bulkhead 	Freq: DC-4 GHz VSWR: 1.20:1 Max
		HAD-BNCJ-BNCJ-T "T" 	Freq: DC-4 GHz VSWR: 1.20:1 Max

N	Male to Male	NP-NP-18 	Freq: DC-18 GHz VSWR: 1.15:1 Max
		NP-NP-18 -01 	Freq: DC-18 GHz VSWR: 1.15:1 Max Temp: -55° to 105°C
	Male to Female	NP-NJ-18 	Freq: DC-18 GHz VSWR: 1.15:1 Max
		NP-NJ-18-01 	Freq: DC-18 GHz VSWR: 1.15:1 Max Temp: -55° to 105°C
		NP-NJ-PO-MF Push-On 	Freq: DC-18 GHz VSWR: 1.10:1 Max
		NJ-NJ-18-01 	Freq: DC-18 GHz VSWR: 1.15:1 Max Temp: -55° to 105°C
	Female to Female		

Type	Config.	Part #/Type	Specifications
SMA	Male to Male	231-502SF  	Freq: DC-27 GHz VSWR: 1.15:1 Max Temp: -55° to 165°C
		SMAP-SMAP-MM-01 	Freq: DC-18 GHz VSWR: 1.25:1 Max Temp: -65° to 165°C
		SMAP-SMAP-MM-RA Right Angle 	Freq: DC-27 GHz VSWR: 1.35:1 Max Temp: -65° to 165°C
	Male to Female	230-506SF  	Freq: DC-27 GHz VSWR: 1.15:1 Max Temp: -55° to 165°C
		2082-PJ-SMA 	Freq: DC-18 GHz VSWR: 1.15:1 Max Temp: -65° to 125°C
		1312-33-50-QC3 Push-On 	Freq: DC-18 GHz
		SMAP-SMAJ-MF-RA Right Angle 	Freq: DC-27 GHz VSWR: 1.15:1 Max
	Female to Female	232-502SF  	Freq: DC-27 GHz VSWR: 1.15:1 Max Temp: -55° to 165°C
		232-510SF Bulkhead  	Freq: DC-27 GHz VSWR: 1.15:1 Max Temp: -55° to 165°C
		232-512SF Panel Mount 4-Hole Threaded  	Freq: DC-27 GHz VSWR: 1.15:1 Max Temp: -55° to 165°C
		232-514SF Panel Mount 4-Hole Un-Threaded  	Freq: DC-27 GHz VSWR: 1.15:1 Max Temp: -55° to 165°C
		1212-33-50-004 	Freq: DC-18 GHz VSWR: 1.20:1 Max Temp: -65° to 125°C
		SMAJ-SMAJ-FF-RA 	Freq: DC-27 GHz VSWR: 1.15:1 Max

IN-SERIES ADAPTERS

Type	Config.	Part #/Type	Specifications
SMB	Male to Male	HAD-SMBP-SMBP 	Freq: DC-4 GHz VSWR: 1.20:1 Max
		SMBP-SMBP-FF Push-On 	Freq: DC-4 GHz VSWR: 1.20:1 Max Temp: -55° to 125°C
	Male to Female	HAD-SMBP-SMBJ 	Freq: DC-4 GHz VSWR: 1.20:1 Max
	Female to Female	HAD-SMBJ-SMBJ 	Freq: DC-4 GHz VSWR: 1.20:1 Max
		HAD-SMBJ-SMBJ-BH Bulkhead 	Freq: DC-4 GHz VSWR: 1.20:1 Max
		SMBJ-SMBJ-MM Bulkhead Push-On 	Freq: DC-4 GHz VSWR: 1.20:1 Max Temp: -55° to 125°C
TNC	Male to Male	HAD-TNCP-TNCP 	Freq: DC-11 GHz VSWR: 1.20:1 Max Temp: -65° to 165°C
		TNCP-TNCP-58 5/8" Hex 	Freq: DC-18 GHz VSWR: 1.15:1 Max
		TNCP-TNCP-916 9/16" Hex 	Freq: DC-18 GHz VSWR: 1.15:1 Max
	Male to Female	TNCP-TNCJ 	Freq: DC-18 GHz VSWR: 1.15:1 Max
		HAD-TNCP-TNCJ 	Freq: DC-11 GHz VSWR: 1.20:1 Max
	Female to Female	TNCJ-TNCJ 	Freq: DC-18 GHz VSWR: 1.15:1 Max
		HAD-TNCJ-TNCJ 	Freq: DC-11 GHz VSWR: 1.20:1 Max
		HAD-TNCJ-TNCJ-BH Bulkhead 	Freq: DC-11 GHz VSWR: 1.20:1 Max
		HAD-TNCJ-TNCJ-4H 4-Hole Flange 	Freq: DC-11 GHz VSWR: 1.20:1 Max

Why Use an Adapter?

In-Series, Between-Series, Millimeter Wave and Low PIM RF and Microwave adapters are used to enable connections between two connector types that would otherwise not mate.

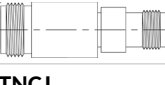
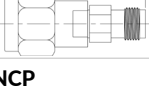
In this case, a low-loss or low-VSWR male to female adapter is placed on the more expensive components and equipment when they are put through many connect/disconnect cycles. This is to prevent damage to the connectors on the equipment.

Any damage caused by repeated connections will be born by the adapter, which is less expensive to replace. This is why male-to-female configured adapters are also known as “connector savers.”

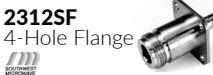
BETWEEN-SERIES ADAPTERS

Type	Config.	Part #/Type	Specifications	Type	Config.	Part #/Type	Specifications
1.85mm to 1.0mm	1.85mm Female to 1.0mm Female	182410-00SF 	Freq: DC-67 GHz VSWR: 1.25:1 Max Temp: -55° to 165°C	2.92mm to 2.4mm	2.92mm Female to 2.4mm Female	101410-00SF 	Freq: DC-40 GHz VSWR: 1.15:1 Max Temp: -55° to 135°C
	1.85mm Female to 1.0mm Male	182420-00SF 	Freq: DC-67 GHz VSWR: 1.25:1 Max Temp: -55° to 165°C			HAD-24J29J 	Freq: DC-40 GHz VSWR: 1.15:1 Max
	1.85mm Male to 1.0mm Female	182430-00SF 	Freq: DC-67 GHz VSWR: 1.25:1 Max Temp: -55° to 165°C			24J-29J-FF-RA Right Angle 	Freq: DC-40 GHz VSWR: 1.33:1 Max Temp: -55° to 100°C
	1.85mm Male to 1.0mm Male	182440-00SF 	Freq: DC-67 GHz VSWR: 1.25:1 Max Temp: -55° to 165°C			101420-00SF 	Freq: DC-40 GHz VSWR: 1.15:1 Max Temp: -55° to 135°C
2.92mm to 1.85mm	2.92mm Female to 1.85mm Female	101810-00SF 	Freq: DC-40 GHz VSWR: 1.15:1 Max Temp: -55° to 165°C		2.92mm Female to 2.4mm Male	HAD-24P29J 	Freq: DC-40 GHz VSWR: 1.15:1 Max
		29J-185J-FF 	Freq: DC-40 GHz VSWR: 1.15:1 Max Temp: -55° to 105°C			24P-29J-MF-RA Right Angle 	Freq: DC-40 GHz VSWR: 1.33:1 Max Temp: -55° to 100°C
	2.92mm Female to 1.85mm Male	101820-00SF 	Freq: DC-40 GHz VSWR: 1.15:1 Max Temp: -55° to 165°C		2.92mm Male to 2.4mm Female	101430-00SF 	Freq: DC-40 GHz VSWR: 1.15:1 Max Temp: -55° to 135°C
		29J-185P-FM 	Freq: DC-40 GHz VSWR: 1.15:1 Max Temp: -55° to 105°C			HAD-24J29P 	Freq: DC-40 GHz VSWR: 1.15:1 Max
	2.92mm Male to 1.85mm Female	101830-00SF 	Freq: DC-40 GHz VSWR: 1.15:1 Max Temp: -55° to 165°C			24J-29P-FM-RA Right Angle 	Freq: DC-40 GHz VSWR: 1.33:1 Max Temp: -55° to 100°C
		29P-185J-MF 	Freq: DC-40 GHz VSWR: 1.15:1 Max Temp: -55° to 105°C		2.92mm Male to 2.4mm Male	101440-00SF 	Freq: DC-40 GHz VSWR: 1.15:1 Max Temp: -55° to 135°C
	2.92mm Male to 1.85mm Male	101840-00SF 	Freq: DC-40 GHz VSWR: 1.15:1 Max Temp: -55° to 165°C			HAD-24P29P 	Freq: DC-40 GHz VSWR: 1.15:1 Max
		29P-185P-MM 	Freq: DC-40 GHz VSWR: 1.15:1 Max Temp: -55° to 105°C			24P-29P-MM-RA Right Angle 	Freq: DC-40 GHz VSWR: 1.33:1 Max Temp: -55° to 100°C
2.4mm to N	2.4mm Female to N Female	24J-NJ-FF 	Freq: DC-18 GHz VSWR: 1.15:1 Max Temp: -65° to 165°C	BNC to N	BNC Female to N Female	HAD-BNCP-NJ 	Freq: DC-4 GHz VSWR: 1.20:1 Max
	2.4mm Female to N Male	24J-NP-FM 	Freq: DC-18 GHz VSWR: 1.15:1 Max Temp: -65° to 165°C		BNC Male to N Female	HAD-BNCP-NJ 	Freq: DC-4 GHz VSWR: 1.20:1 Max
	2.4mm Male to N Female	24P-NJ-MF 	Freq: DC-18 GHz VSWR: 1.15:1 Max Temp: -65° to 165°C	BNC to SMA	BNC Female to SMA Male	HAD-SMAP-BNCJ 	Freq: DC-4 GHz VSWR: 1.20:1 Max
	2.4mm Male to N Male	24P-NP-MM 	Freq: DC-18 GHz VSWR: 1.15:1 Max Temp: -65° to 165°C		BNC Male to SMA Female	HAD-SMAJ-BNCP 	Freq: DC-4 GHz VSWR: 1.20:1 Max

BETWEEN-SERIES ADAPTERS

Type	Config.	Part #/Type	Specifications	Type	Config.	Part #/Type	Specifications
BNC to TNC	BNC Female to TNC Female	HAD-BNCJ-TNCJ 	Freq: DC-4 GHz VSWR: 1.20:1 Max	3.5mm to N	N Female to 3.5mm Female	NJ-35J-FF 	Freq: DC-18 GHz VSWR: 1.15:1 Max Temp: -65° to 165°C
	BNC Female to TNC Male	HAD-BNCJ-TNCP 	Freq: DC-4 GHz VSWR: 1.20:1 Max		N Female to 3.5mm Male	NJ-35P-FM 	Freq: DC-18 GHz VSWR: 1.15:1 Max Temp: -65° to 165°C
	BNC Male to TNC Female	HAD-BNCP-TNCJ 	Freq: DC-4 GHz VSWR: 1.20:1 Max		N Male to 3.5mm Female	NP-35J-MF 	Freq: DC-18 GHz VSWR: 1.15:1 Max Temp: -65° to 165°C
					N Male to 3.5mm Male	NP-35P-MM 	Freq: DC-18 GHz VSWR: 1.15:1 Max Temp: -40° to 165°C
3.5mm to 2.4mm	3.5mm Female to 2.4mm Female	61410-00SF 	Freq: DC-33 GHz VSWR: 1.15:1 Max Temp: -55° to 135°C	2.4mm to SSMA	SSMA Female to 2.4mm Female	11410-00SF 	Freq: DC-40 GHz VSWR: 1.15:1 Max Temp: -55° to 135°C
		24J-35J-FF 	Freq: DC-33 GHz VSWR: 1.15:1 Max Temp: -65° to 165°C		SSMA Female to 2.4mm Male	11420-00F 	Freq: DC-40 GHz VSWR: 1.15:1 Max Temp: -55° to 135°C
	3.5mm Female to 2.4mm Male	61420-00SF 	Freq: DC-338 GHz VSWR: 1.15:1 Max Temp: -55° to 135°C		SSMA Male to 2.4mm Female	11430-00F 	Freq: DC-40 GHz VSWR: 1.15:1 Max Temp: -55° to 135°C
		24P-35J-MF 	Freq: DC-33 GHz VSWR: 1.15:1 Max Temp: -65° to 165°C		SSMA Male to 2.4mm Male	11440-00F 	Freq: DC-40 GHz VSWR: 1.15:1 Max Temp: -55° to 135°C
	3.5mm Male to 2.4mm Female	61430-00SF 	Freq: DC-33 GHz VSWR: 1.15:1 Max Temp: -55° to 135°C	2.92mm to SSMA	SSMA Female to 2.92mm Female	HAD-29J-SSMAJ 	Freq: DC-40 GHz VSWR: 1.15:1 Max Temp: -40° to 165°C
		24J-35P-FM 	Freq: DC-33 GHz VSWR: 1.15:1 Max Temp: -65° to 165°C		SSMA Female to 2.92mm Male	HAD-29P-SSMAJ 	Freq: DC-40 GHz VSWR: 1.15:1 Max Temp: -40° to 165°C
		24J-35P 	Freq: DC-34 GHz VSWR: 1.25:1 Max Temp: -60° to 100°C		SSMA Male to 2.92mm Female	HAD-29J-SSMAP 	Freq: DC-40 GHz VSWR: 1.15:1 Max Temp: -40° to 165°C
	3.5mm Male to 2.4mm Male	61440-00SF 	Freq: DC-33 GHz VSWR: 1.15:1 Max Temp: -55° to 135°C		SSMA Male to 2.92mm Male	HAD-29P-SSMAP 	Freq: DC-40 GHz VSWR: 1.15:1 Max Temp: -40° to 165°C
		24P-35P-MM 	Freq: DC-33 GHz VSWR: 1.15:1 Max Temp: -65° to 165°C	TNC to 7mm	TNC Female to 7mm Male	7MM-TNCJ 	Freq: DC-18 GHz VSWR: 1.25:1 Max Temp: -65° to 165°C
		24P-35P 	Freq: DC-34 GHz VSWR: 1.25:1 Max Temp: -60° to 100°C		TNC Male to 7mm Male	7MM-TNCP 	Freq: DC-18 GHz VSWR: 1.25:1 Max Temp: -65° to 165°C
3.5mm to 2.92mm	3.5mm Female to 2.92mm Female	29J-35J 	Freq: DC-34 GHz VSWR: 1.25:1 Max Temp: -60° to 100°C	TNC to N	TNC Female to N Female	NJ-TNCJ 	Freq: DC-18 GHz VSWR: 1.15:1 Max
	3.5mm Female to 2.92mm Male	29P-35J 	Freq: DC-34 GHz VSWR: 1.25:1 Max Temp: -60° to 100°C		TNC Female to N Male	NP-TNCJ 	Freq: DC-18 GHz VSWR: 1.15:1 Max
	3.5mm Male to 2.92mm Female	29J-35P 	Freq: DC-34 GHz VSWR: 1.25:1 Max Temp: -60° to 100°C		TNC Male to N Female	NJ-TNCP 	Freq: DC-18 GHz VSWR: 1.15:1 Max
					TNC Male to N Male	NP-TNCP 	Freq: DC-18 GHz VSWR: 1.15:1 Max

BETWEEN-SERIES ADAPTERS

Type	Config.	Part #/Type	Specifications	Type	Config.	Part #/Type	Specifications	
SMA to BMA	SMA Female to BMA Female	HAD-SMAJ-BMAJ 	Freq: DC-18 GHz VSWR: 1.15:1 Max	SMA to HUMC	SMA Female to HUMC Female	HAD-SMAJ-HUMCJ 	Freq: DC-6 GHz VSWR: 1.20:1 Max	
		HAD-SMAJ-BMAJ-2H 	Freq: DC-18 GHz VSWR: 1.15:1 Max		SMA Female to HUMC Male	HAD-SMAJ-HUMCP 	Freq: DC-6 GHz VSWR: 1.20:1 Max	
		HAD-SMAJ-BMAJ-BH 	Freq: DC-18 GHz VSWR: 1.15:1 Max		SMA Male to HUMC Female	HAD-SMAP-HUMCJ 	Freq: DC-6 GHz VSWR: 1.20:1 Max	
	SMA Female to BMA Male	HAD-SMAJ-BMAP 	Freq: DC-18 GHz VSWR: 1.20:1 Max	SMA to N	SMA Female to N Female	2310SF 	Freq: DC-18 GHz VSWR: 1.15:1 Max Temp: -55° to 165°C	
	SMA Male to BMA Female	HAD-SMAP-BMAP 	Freq: DC-18 GHz VSWR: 1.20:1 Max			NJ-SMAJ-FF 	Freq: DC-18 GHz VSWR: 1.25:1 Max Temp: -65° to 125°C	
SMA to SSMA		NJ-SMAJ-FF-01 	Freq: DC-18 GHz VSWR: 1.15:1 Max Temp: -65° to 165°C					
SMA Female to SSMA Female	HAD-SMAJ-SSMAJ 	Freq: DC-18 GHz VSWR: 1.20:1 Max	NJ-SMAJ-BH Bulkhead 			Freq: DC-18 GHz VSWR: 1.15:1 Max		
SMA Female to SSMA Male	HAD-SMAJ-SSMAP 	Freq: DC-18 GHz VSWR: 1.20:1 Max	2312SF 4-Hole Flange 			Freq: DC-18 GHz VSWR: 1.15:1 Max Temp: -55° to 165°C		
SMA to SMP	SMA Female to SMP Female	HAD-SMAJ-SMPJ 	Freq: DC-27 GHz VSWR: 1.15:1 Max		SMA Female to N Male	2320SF 	Freq: DC-18 GHz VSWR: 1.25:1 Max Temp: -65° to 165°C	
	SMA Male to SMP Female	HAD-SMAP-SMPJ 	Freq: DC-27 GHz VSWR: 1.15:1 Max			NP-SMAJ-MF 	Freq: DC-18 GHz VSWR: 1.25:1 Max Temp: -65° to 125°C	
		NP-SMAJ-MF-01 	Freq: DC-18 GHz VSWR: 1.15:1 Max Temp: -65° to 165°C			SMA Male to N Female	2330SF 	Freq: DC-18 GHz VSWR: 1.15:1 Max Temp: -55° to 165°C
SMA to SMPM	SMA Female to SMPM Male	HAD-SMAJ-SMPMJ 	Freq: DC-27 GHz VSWR: 1.15:1 Max		NJ-SMAP-FM 		Freq: DC-18 GHz VSWR: 1.25:1 Max Temp: -65° to 125°C	
	SMA Male to SMPM Female	HAD-SMAP-SMPMJ 	Freq: DC-27 GHz VSWR: 1.15:1 Max		NJ-SMAP-FM-01 		Freq: DC-18 GHz VSWR: 1.15:1 Max Temp: -65° to 165°C	
SMA to TNC	SMA Female to TNC Female	TNCJ-SMAJ 	Freq: DC-18 GHz VSWR: 1.15:1 Max Temp: -55° to 100°C		SMA Male to N Male		2311SF 	Freq: DC-18 GHz VSWR: 1.15:1 Max Temp: -55° to 165°C
	SMA Female to TNC Male	TNCJ-SMAP 	Freq: DC-18 GHz VSWR: 1.15:1 Max Temp: -55° to 100°C				2340SF 4-Hole Flange 	Freq: DC-18 GHz VSWR: 1.15:1 Max Temp: -55° to 165°C
	SMA Male to TNC Female	TNCP-SMAJ 	Freq: DC-18 GHz VSWR: 1.15:1 Max Temp: -55° to 100°C			NP-SMAP-MM 	Freq: DC-18 GHz VSWR: 1.25:1 Max Temp: -65° to 125°C	
	SMA Male to TNC Male	TNCP-SMAP 	Freq: DC-18 GHz VSWR: 1.15:1 Max Temp: -55° to 100°C			NP-SMAP-MM-01 	Freq: DC-18 GHz VSWR: 1.15:1 Max Temp: -65° to 165°C	

BETWEEN-SERIES ADAPTERS

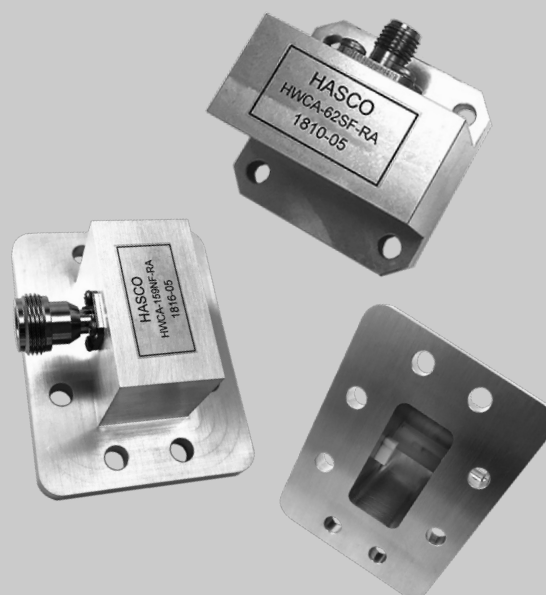
Type	Config.	Part #/Type	Specifications
SMA to 2.4mm	SMA Female to 2.4mm Female	24J-SMAJ-FF 	Freq: DC-26.5 GHz VSWR: 1.25:1 Max Temp: -65° to 165°C
	SMA Female to 2.4mm Male	24P-SMAJ-MF 	Freq: DC-26.5 GHz VSWR: 1.25:1 Max Temp: -65° to 165°C
	SMA Male to 2.4mm Female	24J-SMAP-FM 	Freq: DC-26.5 GHz VSWR: 1.25:1 Max Temp: -65° to 165°C
	SMA Male to 2.4mm Male	24P-SMAP-MM 	Freq: DC-26.5 GHz VSWR: 1.25:1 Max Temp: -65° to 165°C
SMA to MCX	SMA Female to MCX Male	HAD-SMAJ-MCXP 	Freq: DC-6 GHz VSWR: 1.20:1 Max
	SMA Male to MCX Male	HAD-SMAP-MCXP 	Freq: DC-6 GHz VSWR: 1.20:1 Max
SMA to MMCX	SMA Female to MMCX Male	HAD-SMAJ-MMCXP 	Freq: DC-6 GHz VSWR: 1.20:1 Max
	SMA Male to MMCX Male	HAD-SMAP-MMCXP 	Freq: DC-6 GHz VSWR: 1.20:1 Max
SMB to N	SMB Female to N Female	SMBJ-NJ-MF 	Freq: DC-6 GHz VSWR: 1.20:1 Max Temp: -55° to 125°C
	SMB Female to N Male	SMBJ-NP-FM 	Freq: DC-6 GHz VSWR: 1.20:1 Max Temp: -55° to 125°C
	SMB Male to N Female	SMBP-NJ-FF 	Freq: DC-6 GHz VSWR: 1.20:1 Max Temp: -55° to 125°C
SMB to SMA	SMB Female to SMA Male	HAD-SMAP-SMBJ 	Freq: DC-4 GHz VSWR: 1.20:1 Max
		SMBJ-SMAP-MM 	Freq: DC-6 GHz VSWR: 1.20:1 Max Temp: -55° to 125°C
	SMB Male to SMA Female	HAD-SMAJ-SMBP 	Freq: DC-4 GHz VSWR: 1.20:1 Max
		SMBP-SMAJ-FF 	Freq: DC-6 GHz VSWR: 1.20:1 Max Temp: -55° to 125°C
	SMB Male to SMA Male	SMBP-SMAP-FM 	Freq: DC-6 GHz VSWR: 1.20:1 Max Temp: -55° to 125°C



Waveguide to Coax Adapters

HASCO's offerings of Waveguide to Coax adapters are known for their superior performance as well as low-loss and low VSWR characteristics.

Available in WR-10 to WR-430.



WAVEGUIDE TO COAX ADAPTERS

PHOTO	CONFIG.	PART #/TYPE	SPECIFICATIONS
	WR-10 to 1.0mm (F) Straight End-Launch	HWCA-101F-EL	Freq: 75-110 GHz VSWR: $\sqrt{1.7:1}$ (17dB RL) Typ. Flange: UG387/UM Temp: -20° to +50°C
	WR-10 to 1.0mm (F) Right Angle	HWCA-101F-RA	Freq: 75-110 GHz VSWR: 1.4:1 Max Flange: UG387/UM Max Power: 10W (CW)
	WR-10 to 1.0mm (F) Right Angle	HWCA-101F-RAR	Freq: 75-110 GHz VSWR: 1.4:1 Max Flange: UG387/UM Max Power: 10W (CW)
	WR-112 to SMA (F) Right Angle	HWCA-112SF-RA	Freq: 7.05-10.0 GHz VSWR: 1.25:1 Max Flange: UG138/U IL: 0.15 dB Typ.
	WR-12 to 1.0mm (F) Straight End-Launch	HWCA-121F-EL	Freq: 60-90 GHz VSWR: $\sqrt{1.7:1}$ (17dB RL) Typ Flange: UG387/U Temp: -20° to +50°C
	WR-12 to 1.0mm (F) Right Angle	HWCA-121F-RA	Freq: 60-90 GHz VSWR: 1.4:1 Max Flange: UG387/U Max Power: 10W (CW)
	WR-12 to 1.0mm (F) Right Angle	HWCA-121F-RAR	Freq: 60-90 GHz VSWR: 1.4:1 Max Flange: UG387/U Max Power: 10W (CW)
	WR-15 to 1.0mm (F) Straight End-Launch	HWCA-151F-EL	Freq: 50-75 GHz VSWR: $\sqrt{1.7:1}$ (17dB RL) Typ Flange: UG385/U Temp: -20° to +50°C
	WR-15 to 1.0mm (F) Right Angle	HWCA-151F-RA	Freq: 50-75 GHz VSWR: 1.4:1 Max Flange: UG385/U Max Power: 10W (CW)
	WR-15 to 1.0mm (F) Right Angle	HWCA-151F-RAR	Freq: 50-75 GHz VSWR: 1.4:1 Max Flange: UG385/U Max Power: 10W (CW)
	WR-15 to 1.85mm (F) Right Angle	HWCA-1518F-RAR	Freq: 50-67 GHz VSWR: 1.4:1 Max Flange: UG385/U Max Power: 30W (CW)
	WR-15 to 1.85mm (F) Straight End-Launch	HWCA-15VF-EL	Freq: 50-70 GHz VSWR: $\sqrt{1.7:1}$ (17dB RL) Typ Flange: UG385/U Temp: -20° to +50°C
	WR-159 to N (F) Right Angle	HWCA-159NF-RA	Freq: 4.90-7.05 GHz VSWR: 1.25:1 Max Flange: CPR159F
	WR-187 to N (F) Right Angle	HWCA-187NF-RA	Freq: 3.95-5.85 GHz VSWR: 1.25:1 Max Flange: CMR187
	WR-229 to N (F) Right Angle	HWCA-229NF-RA	Freq: 3.30-4.90 GHz VSWR: 1.25:1 Max Flange: CMR229
	WR-284 to N (F) Right Angle	HWCA-284NF-RA	Freq: 3.30-4.90 GHz VSWR: 1.25:1 Max Flange: UG1484/U
	WR-28 to 2.92mm (F) Right Angle	HWCA-2829F-RA	Freq: 2.6-3.95 GHz VSWR: 1.20:1 Max Flange: UG599/U IL: 0.010 dB Typ.

PHOTO	CONFIG.	PART #/TYPE	SPECIFICATIONS
	WR-34 to 2.92mm (F) Straight End-Launch	ADP-W-27500-11000-34-2F-E	Freq: 22-33 GHz IL: <0.4 dB Typ Flange: UG1530/U Temp: -25° to +65°C
	WR-34 to 2.92mm (F) Right Angle	HWCA-3429F-RA	Freq: 22-33 GHz VSWR: 1.25:1 Max Flange: UG1530/U IL: 0.30 dB Typ.
	WR-34 to N (F) Right Angle	HWCA-340NF-RA	Freq: 2.1 - 3.0 GHz VSWR: 1.25:1 Max Flange: UG554F/U Temp: -40° to +85°C
	WR-42 to SMA (F) Right Angle	HWCA-42SF-RA	Freq: 18-26.5 GHz VSWR: 1.30:1 Max Flange: UG595/U & UG597/U Temp: -55° to +120°C
	WR-430 to N (F) Right Angle	HWCA-430NF-RA	Freq: 1.7-2.6 GHz VSWR: 1.20:1 Max Flange: UG437F IL: 0.15 dB Typ.
	WR-51 to SMA (F) Right Angle	HWCA-515SF-RA	Freq: 15-22 GHz VSWR: 1.20:1 Max Flange: WR51 IL: 0.10 dB Typ.
	WR-62 to SMA (F) Right Angle	HWCA-62SF-RA	Freq: 12.4-18.0 GHz VSWR: 1.25:1 Max Flange: UG1665/U IL: 0.30 dB Typ.
	WR-75 to SMA (F) Right Angle	ADP-W-12500-5000-75-E	Freq: 10-15 GHz IL: 0.15 dB Typ Flange: UBR120 Temp: -50° to +85°C
	WR-75 to SMA (F) Right Angle	HWCA-75SF-RA	Freq: 10-15 GHz VSWR: 1.25:1 Max Flange: WR-75 Cover IL: 0.30 dB Typ.
	WR-75 to SMA (F) Right Angle	HWCA-75SF-RA-01	Freq: 10-15 GHz VSWR: 1.25:1 Max Flange: WR-75 Cover IL: 0.30 dB Typ.
	WR-90 to SMA (F) Right Angle	HWCA-90SF-RA	Freq: 8.2-12.4 GHz VSWR: 1.25:1 Max Flange: UG135/U IL: 0.30 dB Typ.
	WR-90 to N (F) Right Angle	HWCA-90NF-RA	Freq: 8.2-12.4 GHz VSWR: 1.25:1 Max Flange: UG135/U

Ask us about your specific requirement.

HASCO can provide engineering assistance to fulfill many specialized requirements.

LOW PIM ADAPTERS

Type	Config.	Part #/Type	Specifications
IN-SERIES LOW PIM ADAPTERS			
4.3-10	4.3-10 Male to 4.3-10 Female	4310P-4310J-RA-SLP Right Angle 	Freq: DC-6 GHz VSWR: 1.45:1 Max PIM: <-165 dBc
7/16 DIN	716 DIN Female to 716 DIN Female	716J-716J-SLP 	Freq: DC-6 GHz VSWR: 1.20:1 Max PIM: <-168 dBc
	716 DIN Male to 716 DIN Female	716P-716J-SLP 	Freq: DC-6 GHz VSWR: 1.20:1 Max PIM: <-168 dBc
	716 DIN Male to 716 DIN Male	716P-716P-SLP 	Freq: DC-6 GHz VSWR: 1.20:1 Max PIM: <-168 dBc
N	N Female to N Female	NJ-NJ-SLP 	Freq: DC-6 GHz VSWR: 1.20:1 Max PIM: <-160 dBc
	N Male to N Female	NP-NJ-SLP 	Freq: DC-6 GHz VSWR: 1.20:1 Max PIM: <-160 dBc
	N Male to N Male	NP-NP-SLP 	Freq: DC-6 GHz VSWR: 1.20:1 Max PIM: <-160 dBc
SMA	SMA Female to SMA Female	1212-35-50-LPIM 	Freq: DC-18 GHz VSWR: 1.35:1 Max PIM: <-150 dBc Temp: -65° to 125°C

LOW PIM CABLE ASSEMBLIES ALSO AVAILABLE


7/16 to 7/16 • 4.1/9.5 to 4.1/9.5 • N to N • SMA to SMA

BETWEEN-SERIES LOW PIM ADAPTERS			
N to Mini DIN	N Male to Mini DIN Female	MDP-NJ-SLP 	Freq: DC-6 GHz VSWR: 1.20:1 Max PIM: <-168 dBc
	N Male to Mini DIN Male	MDP-NP-SLP 	Freq: DC-6 GHz VSWR: 1.20:1 Max PIM: <-168 dBc
4.3-10 to SMA	4.3-10 Female to SMA Female	4310J-SMAJ-SLP 	Freq: DC-6 GHz VSWR: 1.30:1 Max PIM: <-165 dBc
	4.3-10 Male to SMA Male	4310P-SMAP-SLP 	Freq: DC-6 GHz VSWR: 1.25:1 Max PIM: <-165 dBc

Type	Config.	Part #/Type	Specifications
4.3-10 to N	4.3-10 Female to N Female	4310J-NJ-SLP 	Freq: DC-6 GHz VSWR: 1.25:1 Max PIM: <-168 dBc
	4.3-10 Female to N Male	4310J-NP-SLP 	Freq: DC-6 GHz VSWR: 1.20:1 Max PIM: <-168 dBc
	4.3-10 Male to N Female	4310P-NJ-RA-SLP Right Angle 	Freq: DC-6 GHz VSWR: 1.45:1 Max PIM: <-160 dBc
	4.3-10 Male to N Male	4310P-NP-SLP 	Freq: DC-6 GHz VSWR: 1.25:1 Max PIM: <-168 dBc
4.3-10 to 7/16 DIN	4.3-10 Female to 7/16 DIN Female	4310J-716J-SLP 	Freq: DC-6 GHz VSWR: 1.30:1 Max PIM: <-168 dBc
	4.3-10 Female to 7/16 DIN Male	4310J-716P-SLP 	Freq: DC-6 GHz VSWR: 1.20:1 Max PIM: <-168 dBc
7/16 DIN to SMA	716 DIN Female to SMA Female	716J-SMJ-SLP 	Freq: DC-6 GHz VSWR: 1.20:1 Max PIM: <-160 dBc
	716 DIN Female to SMA Male	716J-SMP-SLP 	Freq: DC-6 GHz VSWR: 1.20:1 Max PIM: <-160 dBc
	716 DIN Male to SMA Female	716P-SMJ-SLP 	Freq: DC-6 GHz VSWR: 1.20:1 Max PIM: <-160 dBc
	716 DIN Male to SMA Male	716P-SMP-SLP 	Freq: DC-6 GHz VSWR: 1.20:1 Max PIM: <-160 dBc
7/16 DIN to N	716 DIN Female to N Female	716J-NJ-SLP 	Freq: DC-6 GHz VSWR: 1.20:1 Max PIM: <-168 dBc
	716 DIN Female to N Male	716J-NP-SLP 	Freq: DC-6 GHz VSWR: 1.20:1 Max PIM: <-168 dBc
	716 DIN Male to N Female	716P-NJ-SLP 	Freq: DC-6 GHz VSWR: 1.20:1 Max PIM: <-168 dBc
	716 DIN Male to N Male	716P-NP-SLP 	Freq: DC-6 GHz VSWR: 1.20:1 Max PIM: <-168 dBc
7/16 DIN to Mini DIN	716 DIN Female to Mini DIN Male	716J-MDP-SLP 	Freq: DC-6 GHz VSWR: 1.20:1 Max PIM: <-168 dBc
	716 DIN Male to Mini DIN Female	716P-MDP-SLP 	Freq: DC-6 GHz VSWR: 1.20:1 Max PIM: <-168 dBc
	716 DIN Male to Mini DIN Male	716P-MDJ-SLP 	Freq: DC-6 GHz VSWR: 1.20:1 Max PIM: <-168 dBc