

555/556 Series

Bi-directional Couplers

Description

Mi-Wave's 555 Series Bi-directional couplers are broadband, broadwall waveguide type. The 556 are split block type components with a multi-hold directivity. The 555 Series couplers are available in 3, 6, 10, 20, 30, and 40 dB coupling values for standard waveguide bands from 18 to 220 GHz.

- High Directivity
- Accurate Coupling
- Full Waveguide Bandwidth

Applications

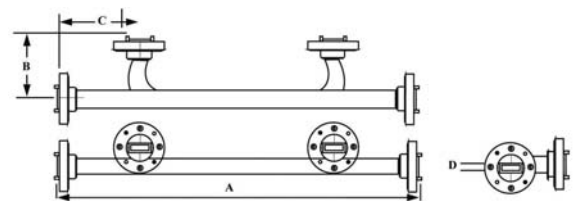
The 555 Series Bi-directional Couplers are used in applications that require precise sampling of both incident and reflected energy. The 3 dB couplers are especially useful in balanced mixer work where broadband power division of RF and LO signals is required to supply both sides of a balanced mixer unit. The 3 dB bi-directional couplers can provide full bandwidth power division.



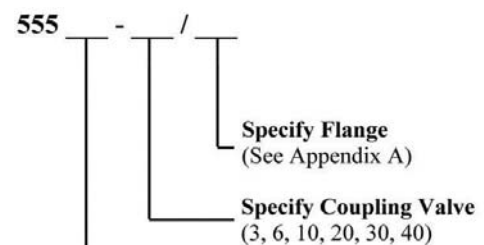
Dimensional Specifications								
Model No.	A		B		C		D	
	in.	mm	in.	mm	in.	mm	in.	mm
555A/10, 20, 30, 40	9.62	244.0	1.75	445	1.38	35.1	.16	4.06
555A/3, 6 dB	12.0	304.8	1.75	445	1.38	35.1	.16	4.06
555B/10, 20, 30, 40	8.40	213.0	1.64	41.7	1.30	33.0	.13	3.30
555B/3, 6 dB	10.25	259.1	1.64	41.7	1.30	33.0	.13	3.30
555U/10, 30, 30, 40	7.38	187.4	1.38	35.1	1.12	28.5	.111	2.80
555U/3, 6 dB	9.12	231.6	1.38	35.1	1.12	28.5	.11	2.80
555V/10, 20, 30, 40	6.25	159.0	1.13	28.6	0.88	22.4	.08	2.03
555V/3, 6 dB	7.25	184.1	1.13	28.7	0.88	22.4	.08	2.03
555E/10, 20, 30, 40	5.50	140.0	1.13	28.5	0.88	22.4	.07	1.78
555E/3, 6 dB	6.62	168.1	1.13	28.7	0.88	22.4	.07	1.78
555W/10, 20, 30, 40	4.50	114.0	1.00	25.4	0.81	20.6	0.6	1.52
555W/3, 6 dB	5.50	139.7	1.00	25.4	0.81	20.6	.06	1.52

Technical Specifications (typical)						
Model No.	555A	555B	555U	555V	555E	555W
Frequency Band (GHz)	26.5–40.0	33.0–50.0	40.0–60.0	50.0–75.0	60.0–90.0	75.0–110.0
Coupling (dB)	☒		3, 6, 10, 20, 30, 40	☒		
Coupling Variation (dB)	± 0.7	± 0.7	± 0.8	± 1.0	± 1.0	± 1.0
Coupling Accuracy (dB)	± 1.0	± 1.0	± 1.2	± 1.5	± 1.5	± 1.5
Directivity (dB) Typical	30	30	30	30	30	30
Main Line VSWR	1.05	1.05	1.10	1.10	1.10	1.10
Auxiliary Line VSWR	1.15	1.15	1.20	1.20	1.20	1.20
Weight (oz)	6.0	5.0	4.0	3.0	2.5	2.0

556 up to J Band



Ordering Information



OTHER WAVEGUIDE BANDS AVAILABLE:

WR-90
WR-75
WR-62

WR-51
WR-34

559 Series

Broadband Directional Couplers



Description

Each of Mi-Wave's 559 Series Broadband Directional Couplers are broadwall multi-hole energy-coupling devices. The 559 Series couplers are designed in 7 couplings of 3, 6, 10, 20, 30, 40 and 50 dB are offered to complement specific test set requirements. Other custom configurations are available upon request.

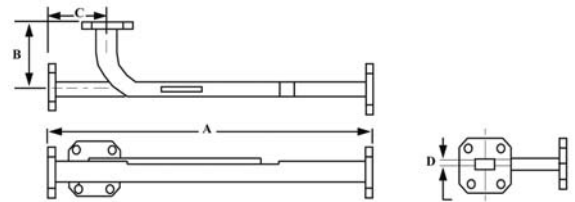
- Broadband
- Low VSWR
- High Directivity
- Rugged Construction
- High Coupling Accuracy
- Calibrated Coupling Values
- Minimum Coupling Variation with Frequency

Applications

The 559 Series Directional Couplers provide an efficient and convenient means for sampling a finite quantity of power flowing in a transmission line or for injecting a desired signal into the line.

Dimensional Specifications

Model No.	A		B		C		D	
	in.	mm	in.	mm	in.	mm	in.	mm
559K/10, 20, 30, 40	11.50	292.0	2.00	50.8	1.50	38.1	.25	6.35
559K/3, 6 dB	12.75	323.9	2.00	50.8	1.50	38.1	.25	6.35
559A/10, 20, 30, 40	9.62	244.0	1.75	44.5	1.38	35.1	.16	4.06
559A/3, 6 dB	12.0	304.8	1.75	44.5	1.38	35.1	.16	4.06
559B/10, 30, 30, 40	8.40	213.0	1.64	41.7	1.30	33.0	.13	3.30
559B/3, 6 dB	10.25	259.1	1.64	41.7	1.30	33.0	.13	3.30
559U/10, 20, 30, 40	7.38	187.4	1.38	35.1	1.12	28.5	.11	2.80
559U/3, 6 dB	9.12	231.6	1.38	35.1	1.12	28.5	.11	2.80
559V/10, 20, 30, 40	6.25	159.0	1.13	8.6	0.88	22.4	.08	2.03
559V/3, 6 dB	7.25	184.1	1.13	28.7	0.88	22.4	.08	2.03
559E/10, 20, 30, 40	5.50	140.0	1.13	28.5	0.88	22.4	.07	1.78
559E/3, 6 dB	6.62	168.1	1.13	28.7	0.88	22.4	.07	1.78
559W/10, 20, 30, 40	4.50	114.0	1.00	25.4	0.81	20.6	.06	1.52
559W/3, 6 dB	5.50	139.7	1.00	25.4	0.81	20.6	.06	1.52



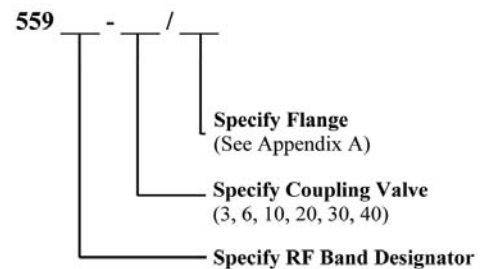
OTHER BANDS AVAILABLE:

- WR-90
- WR-75
- WR-51
- WR-34

Technical Specifications (typical)

Model No.	559K	559A	559B	559U	559V	559E	559W
Frequency Band (GHz)	18.0–26.5	26.5–40.0	33.0–50.0	40.0–60.0	50.0–75.0	60.0–90.0	75.0–110.0
Coupling (dB)	☑ 3, 6, 10, 20, 30, 40 ☑						
Coupling Variation (dB)	±1.0	±1.0	±1.0	±1.0	±1.0	±1.0	±1.0
Coupling Accuracy (dB) (at center freq.)	±1.0	±1.0	±1.0	±1.0	±1.0	±1.0	±1.0
Directivity (dB) Typical	40	40	40	40	40	40	40
Main Line VSWR (typ)	1.05	1.05	1.05	1.10	1.10	1.10	1.10
Auxiliary Line VSWR (typ)	1.12	1.12	1.12	1.15	1.15	1.15	1.17

Ordering Information



*Coupling fluctuates +/- 1dB or +/- 5% whichever is greater

560 Series

Broadband Directional Couplers

Description

Mi-Wave's 560 Series Broadband Directional Couplers are broadwall E-plane multi-hole energy-coupling devices. The 560 Series couplers are designed in 8 waveguide sizes from 12.4 to 110 GHz. Nominal couplings of 3, 6, 10, 20, 30, 40 and 50 dB are offered to complement specific test set requirements.

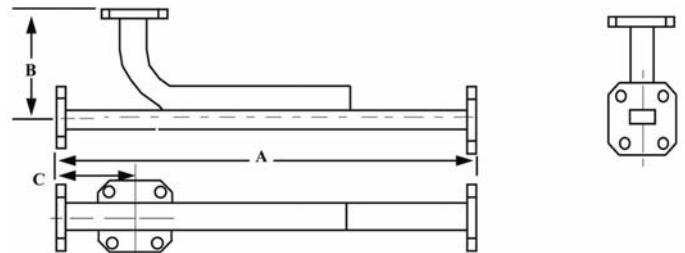
Applications

The 560 Series directional couplers provide an efficient and convenient means for sampling a finite quantity of power flowing in a transmission line or for injecting a desired signal into the line.

- *Broadband*
- *Low VSWR*
- *E-plane Design*
- *High Directivity*
- *Rugged Construction*
- *High Coupling Accuracy*
- *Calibrated Coupling Values*
- *Minimum Coupling Variation with Frequency*



Dimensional Specifications						
Model No.	A		B		C	
	in.	mm	in.	mm	in.	mm
560K/10, 20, 30, 40	11.50	292.0	2.00	50.8	1.50	38.1
560K/3, 6 dB	12.75	323.9	2.00	50.8	1.50	38.1
560A/10, 20, 30, 40	9.62	244.0	1.75	44.5	1.38	35.1
560A/3, 6 dB	12.0	304.8	1.75	44.5	1.38	35.1
560B/10, 20, 30, 40	8.40	213.0	1.64	41.7	1.30	33.0
560B/3, 6 dB	10.25	259.1	1.64	41.7	1.30	33.0
560U/10, 30, 30, 40	7.38	187.4	1.38	35.1	1.12	28.5
560U/3, 6 dB	9.12	231.6	1.38	35.1	1.12	28.5
560V/10, 20, 30, 40	6.25	159.0	1.13	28.6	0.88	22.4
560V/3, 6 dB	7.25	184.1	1.13	28.7	0.88	22.4
560E/10, 20, 30, 40	5.50	140.0	1.13	28.5	0.88	22.4
560E/3, 6 dB	6.62	168.1	1.13	28.7	0.88	22.4
560W/10, 20, 30, 40	4.50	114.0	1.00	25.4	0.81	20.6
560W/3, 6 dB	5.50	139.7	1.00	25.4	0.81	20.6

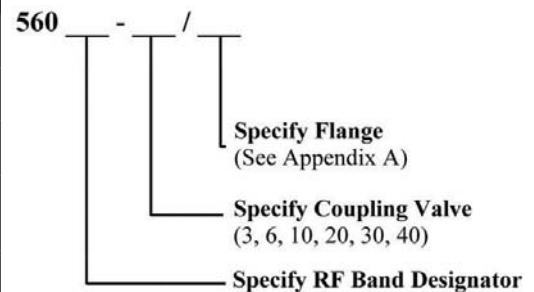


OTHER WAVEGUIDE BANDS AVAILABLE:

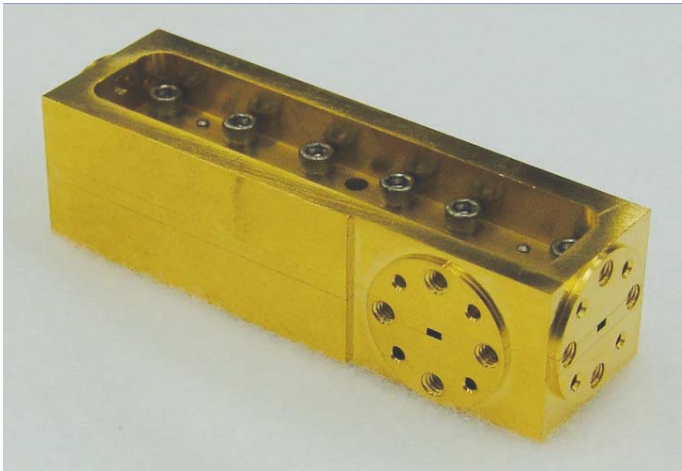
- | | |
|-------|-------|
| WR-90 | WR-51 |
| WR-75 | WR-34 |
| WR-62 | |

Technical Specifications (typical)							
Model No.	560K	560A	560B	560U	560V	560E	560W
Frequency Band (GHz)	18.0–26.5	26.5–40.0	33.0–50.0	40.0–60.0	50.0–75.0	60.0–90.0	75.0–110.0
Coupling (dB)	☒ 3, 6, 10, 20, 30, 40 ☒						
Coupling Variation (dB)	± 1.0	± 1.0	± 1.0	± 1.0	± 1.0	± 1.0	± 1.0
Coupling Accuracy (dB) (at center freq)	± 1.0	± 1.0	± 1.0	± 1.0	± 1.0	± 1.0	± 1.0
Directivity (dB) Typical	40	40	40	40	40	40	40
Main Line VSWR (typ)	1.05	1.05	1.05	1.10	1.10	1.10	1.10
Auxiliary Line VSWR	1.12	1.12	1.12	1.15	1.15	1.15	1.17

Ordering Information



*Coupling fluctuates +/- 1dB or +/- 5% whichever is greater



Description

Mi-Wave's 561 Series Broadband Directional Couplers are broadwall multihole energy-coupling devices. The 561 Series devices are available in various waveguide sizes ranging in frequency from 18.0 to 500 GHz.

Nominal couplings of 3, 6, 10, 20, 30, 40 and 50 dB are offered to complement specific test set requirements.

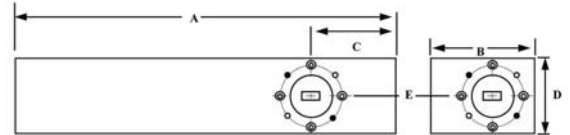
- *Broadband*
- *Low VSWR*
- *High Directivity*
- *Rugged Construction*
- *High Coupling Accuracy*
- *Calibrated Coupling Values*
- *Minimum Coupling Variation with Frequency*

Applications

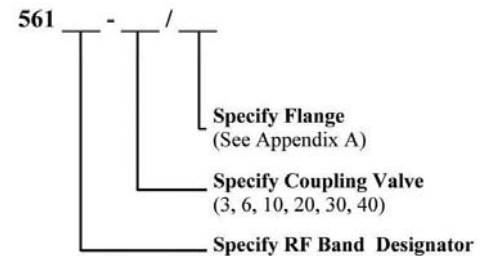
The 561 Series Directional Couplers provide an efficient and convenient means for sampling a finite quantity of power flowing in a transmission line or for injecting a desired signal into the line.

Dimensional Specifications

Model No.	A		B		C		D		E	
	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm
561A	6.21	157.7	0.93	23.6			0.69	17.5	0.65	16.5
561B	8.0	203.2	1.30	33.0	1.50	38.1	1.30	33.0	0.65	16.5
561U	7.0	177.8	1.30	33.0	1.30	33.0	1.30	33.0	0.65	16.5
561V	6.0	152.4	1.30	33.0	1.25	31.8	1.00	25.4	0.50	12.7
561E	5.0	127.0	1.10	27.9	1.00	25.4	1.00	25.4	0.50	12.7
561W	4.0	101.6	1.10	27.9	0.80	20.32	1.00	25.4	0.50	12.7
561F	2.88	73.15	1.10	27.9	0.80	20.32	1.00	25.4	0.50	12.7
561D	2.88	73.15	1.10	27.9	0.80	20.32	1.00	25.4	0.50	12.7
561G	2.88	73.15	1.10	27.9	0.80	20.32	1.00	25.4	0.50	12.7



Ordering Information



Technical Specifications (typical)

Model No.	561A	561B	561U	561V	561E	561W	561F	561D	561G
Frequency Band (GHz)	26.5–40.0	33.0–50.0	40.0–60.0	50.0–75.0	60.0–90.0	75.0–110.0	90.0–140.0	110.0–170.0	140.0–220.0
Coupling (dB)	☒ 3, 6, 10, 20, 30, 40 ☒								
Coupling Variation (dB)	± 1.0	± 1.0	± 1.0	± 1.0	± 1.0	± 1.0	± 1.5	± 1.5	± 1.5
Coupling Accuracy (dB) (at center frequency)	± 1.0	± 1.0	± 1.0	± 1.5	± 1.5	± 1.5	± 2.0	± 2.0	± 2.0
Directivity (dB) Typical	35	35	35	35	35	35	25	25	25
Main Line VSWR	1.05	1.05	1.05	1.10	1.10	1.10	1.15	1.15	1.15
Auxiliary Line VSWR	1.12	1.12	1.12	1.15	1.15	1.17	1.20	1.20	1.20

*Coupling fluctuates +/- 1dB or +/- 5% whichever is greater

Description

Mi-Wave's 564 Series Cross Guide Coupler consists of two waveguides at right angles to each other, joined by small coupling slots whose size, location, and orientation determine the coupling and directivity of the unit. All ports are available for sampling or injecting energy and are clearly marked to indicate the coupling direction.

- *Low VSWR*
- *Four-port Device*
- *Rugged Construction*
- *Broadband Operation*

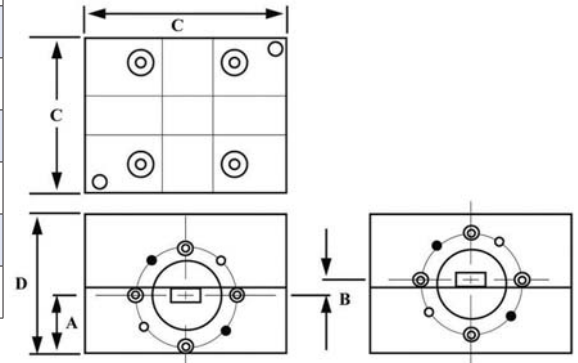
Applications

The 564 Series Cross Guide Directional Couplers provide an efficient means for sampling power or injecting a signal into a waveguide transmission line.

565 has 4th port terminated
Check with Miwave for dimensions



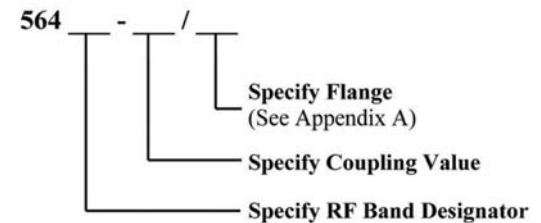
Dimensional Specifications								
Model No.	A		B		C		D	
	in.	mm	in.	mm	in.	mm	in.	mm
564K	.568	14.4	0.18	4.6	1.62	41.1	1.31	33.3
564A	.580	14.7	0.15	3.8	1.62	41.1	1.31	33.3
564B	.594	15.1	0.12	3.0	1.62	41.1	1.31	33.3
564U	.603	15.3	0.10	2.5	1.62	41.1	1.31	33.3
564V	.588	14.9	0.08	2.01	1.25	31.8	1.25	31.8
564E	.595	15.1	0.07	1.8	1.25	31.8	1.25	31.8
564W	.600	15.2	0.05	1.3	1.25	31.8	1.25	31.8
564F	.600	15.2	0.05	1.3	1.25	31.8	1.25	31.8



Technical Specifications (typical)									
Model No.	564K	564A	564B	564U	564V	564E	564W	564F	564D
Frequency Band (GHz)	18.0–26.5	26.5–40.0	33.0–50.0	40.0–60.0	50.0–75.0	60.0–90.0	75.0–110.0	90.0–140.0	110–170
Standard Coupling Values (dB) Nom.	☒ 16, 20, 30, 40, 50 ☒								
Directivity (dB) Typical	15	15	15	15	15	15	15	15	14
VSWR (typica)	1.15	1.15	1.15	1.15	1.20	1.20	1.20	1.20	1.5
Weight (oz)	2	2	2	2	3	3	3	3	3

1. Any coupling values area available upon request
2. Nominal ± 2.0 dB coupling variation cover over the waveguide band when set for coupling value at the band center.

Ordering Information



566 Series

Cross Guide Directional Couplers

Description

Mi-Wave's 566 Series Cross Guide Directional Coupler Consists of two waveguides at right angles to each other, joined by small coupling slots whose size, location, and orientation determine the coupling and directivity of the unit. All ports are available for sampling or injecting energy and are clearly marked to indicate the coupling direction.

- *Low Cost*
- *Low VSWR*
- *Four-port Device*
- *Rugged Construction*
- *Broadband Operation*

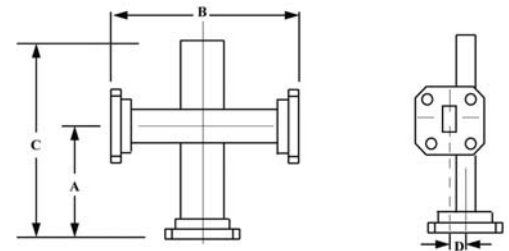
Applications

The 566 Series Cross Guide Directional Couplers provide an efficient means for sampling power or injecting a signal into a waveguide transmission line.



Dimensional Specifications

Model No.	A		B		C		D	
	in.	mm	in.	mm	in.	mm	in.	mm
566K	1.00	25.4	2.00	50.8	2.00	50.8	.187	4.74
566A	.75	.19	1.50	38.1	1.50	38.1	.161	4.09
566B	.75	.19	1.50	38.1	1.50	38.1	.127	3.22
566U	.75	.19	1.50	38.1	1.50	38.1	.11	2.80
566V	.75	.19	1.50	38.1	1.50	38.1	.090	2.29



OTHER WAVEGUIDE BANDS AVAILABLE:

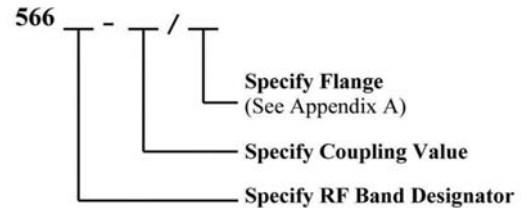
WR-90 WR-51
WR-75 WR-34
WR-62

Technical Specifications (typical)

Model No.	566K	566A	566B	566U	566V
Frequency Band (GHz)	18.0–26.5	26.5–40.0	33.0–50.0	40.0–60.0	50.0–75.0
Standard Coupling Values (dB) Nom.	☒ 20, 30, 40, 50 ☒				
Directivity (dB) Typical	15	15	15	15	15
VSWR Max.	1.15	1.15	1.15	1.15	1.20
Weight (oz)	3.0	3.0	3.0	3.0	2.0

1. Any coupling values area available upon request
2. Nominal ± 2.0 dB coupling variation cover over the waveguide band when set for coupling value at the band center.

Ordering Information





Description

Mi-Wave's 567 Series Dual-directional Couplers are broadband, broadwall components with a multi-hole directivity. The 567 Series Couplers are available in 3, 6, 10, 20, 30, 40 and 50 dB coupling values for standard waveguide bands from 18 to 170.0 GHz.

- High Directivity
- Accurate Coupling
- Full Waveguide Bandwidth

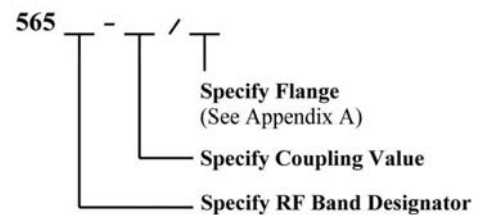
Applications

The 567 Series Dual-directional couplers are used in applications that require precise sampling of both incident and reflected energy. The 3 dB couplers are especially useful in balanced mixer work where broadband power division of RF and LO signals is required to supply both sides of a balanced mixer unit. The 3 dB bi-directional couplers can provide full bandwidth power division.

Dimensional Specifications

Model No.	A		B		C		D	
	in.	mm	in.	mm	in.	mm	in.	mm
567A/10, 20, 30, 40	9.62	244.0	1.75	44.5	1.38	35.1	.16	4.06
567A/3, 6 dB	12.0	304.8	1.75	44.5	1.38	35.1	.16	4.06
567B/10, 30, 30, 40	8.40	213.0	1.64	41.7	1.30	33.0	.13	3.30
567B/3, 6 dB	10.25	259.1	1.64	41.7	1.30	33.0	.13	3.30
567U/10, 20, 30, 40	7.38	187.4	1.38	35.1	1.12	28.5	.11	2.80
567U/3, 6 dB	9.12	231.6	1.38	35.1	1.12	28.5	.11	2.80
567V/10, 20, 30, 40	6.25	159.0	1.13	8.6	0.88	22.4	.08	2.03
567V/3, 6 dB	7.25	184.1	1.13	28.7	0.88	22.4	.08	2.03
567E/10, 20, 30, 40	5.50	140.0	1.13	28.5	0.88	22.4	.07	1.78
567E/3, 6 dB	6.62	168.1	1.13	28.7	0.88	22.4	.07	1.78
567W/10, 20, 30, 40	4.50	114.0	1.00	25.4	0.81	20.6	.06	1.52
567W/3, 6 dB	5.50	139.7	1.00	25.4	0.81	20.6	.06	1.52

Ordering Information



OTHER BANDS AVAILABLE:

- WR-90
- WR-75
- WR-62
- WR-51
- WR-34

Technical Specifications (typical)

Model No.	559K	559A	559B	559U	559V	559E	559W
Frequency Band (GHz)	18.0–26.5	26.5–40.0	33.0–50.0	40.0–60.0	50.0–75.0	60.0–90.0	75.0–110.0
Coupling (dB)	☒ 3, 6, 10, 20, 30, 40 ☒						
Coupling Variation (dB)	± 1.0	± 1.0	± 1.0	± 1.0	± 1.0	± 1.0	± 1.0
Coupling Accuracy (dB) **	± 1.0	± 1.0	± 1.0	± 1.0	± 1.0	± 1.0	± 1.0
Directivity (dB) Typical	40	40	40	40	40	40	40
Main Line VSWR	1.05	1.05	1.05	1.10	1.10	1.10	1.10
Auxiliary Line VSWR	1.12	1.12	1.12	1.15	1.15	1.15	1.17

** at center frequency

*Coupling fluctuates +/- 1dB or +/- 5% whichever is greater