

# IN-PHASE 2-WAY SMA & TYPE N DIVIDERS/COMBINER, POWER

## 0.5-18 GHz

# SERIES YL

### GENERAL SPECIFICATIONS

<b>Frequency Range:</b>	0.5-18.0 GHz
<b>RF Impedance:</b>	50 Ohms
<b>RF Power:</b>	The power handling capability for load VSWR's less than 1.50 is 1 watt CW and 1kW peak for frequencies up to 2.0 GHz, and 400 mW CW and 0.4 kW peak for frequencies from 2.0 GHz to 18.0 GHz.
<b>Operating Temperature:</b>	-55°C to +85°C
<b>Connectors:</b>	SMA or Type N Female



### ELECTRICAL PERFORMANCE

Model No.*	Frequency Range GHz	Maximum In/Out VSWR	Maximum Insertion Loss dB	Minimum Isolation dB	Phase Balance Degrees	Amplitude Balance dB	Outline		
							Fig. 1, 2 SMA	Fig. 2, 3 Type N	
YL-70	YL-70N	0.5-2.0	1.25/1.20	0.5	20**	2	0.2	6	9
YL-23	YL-23N	1.0-2.0	1.25/1.20	0.3	20	2	0.2	4	8
YL-71	YL-71N	1.0-4.0	1.30/1.20	0.5	20	2	0.2	4	8
YL-25	YL-25N	1.5-3.0	1.25/1.20	0.3	20	3	0.2	5	7
YL-33	YL-33N	2.0-4.0	1.25/1.20	0.3	21	3	0.2	3	7
YL-48	YL-48N	4.0-8.0	1.30/1.25	0.4	18	4	0.3	2	7
YL-74	N/A	6.0-18.0	1.50/1.40	1.0	16	6	0.4	1	N/A
YL-90	YL-90N	8.0-12.4	1.40/1.35	0.6	18	3	0.2	1	10
YL-92	N/A	12.0-18.0	1.50/1.40	0.7	18	6	0.3	1	N/A

\* Units with Type N connectors: up to 4GHz multiply VSWR's by 1.05 and subtract 2 dB from isolation. Above 4GHz multiply VSWR's by 1.10 and subtract 3dB from isolation.

\*\* Greater than 30 dB over most of the frequency band.

### MECHANICAL OUTLINES

Out-Line	A in[mm]	B in[mm]	C in[mm]	D in[mm]	E in[mm]
1	0.85[21,6]	0.82[20,83]	0.650[16,51]	0.38[9,65]	0.20[5,1]
2	0.85[21,6]	0.75[19,1]	0.650[16,51]	0.30[7,6]	0.20[5,1]
3	0.85[21,6]	1.00[25,4]	0.650[16,51]	0.50[12,7]	0.20[5,1]
4	1.00[25,4]	1.75[44,45]	0.800[20,3]	0.88[22,35]	0.20[5,1]
5	0.80[20,3]	1.25[31,75]	0.600[15,2]	0.63[16,0]	0.20[5,1]
6	1.30[33,02]	1.75[44,45]	1.100[27,94]	0.88[22,35]	0.20[5,1]
7	2.00[50,8]	1.53[38,86]	1.750[44,45]	0.50[12,7]	0.20[5,1]
8	2.00[50,8]	1.73[43,94]	1.750[44,45]	0.70[17,8]	0.50[12,7]
9	2.00[50,8]	1.45[36,8]	1.750[44,45]	0.88[22,35]	0.50[12,7]
10	2.00[50,8]	1.15[29,21]	1.750[44,45]	0.50[12,7]	0.50[12,7]

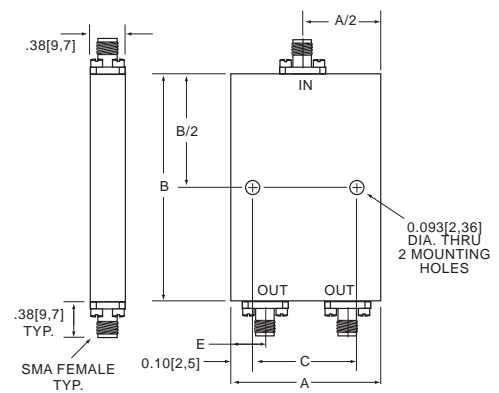


FIGURE 1 SERIES YL

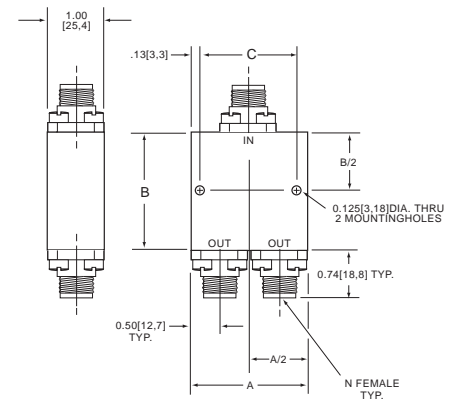


FIGURE 2 SERIES YL-N

KEY: Inches[Millimeters] .XX ±.03 .XXX ±.010 [.X ±0.8 .XX ±0.25]

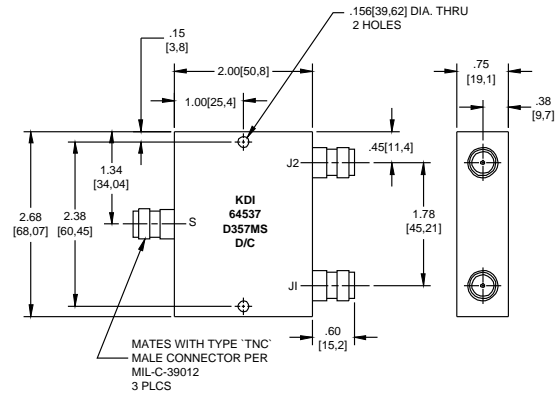
# 2 WAY DIVIDER/COMBINER, POWER

## ELECTRICAL SPECIFICATIONS

<b>Model:</b>	<b>D357MS</b>
<b>Connectors:</b>	TNC
<b>Frequency Range:</b>	850-900 MHz
<b>Insertion Loss:</b>	3.30 dB Maximum, 3.10 dB Typical
<b>Isolation:</b>	22.0 dB Minimum
<b>Amplitude Balance:</b>	±0.2 dB Maximum
<b>Phase Balance:</b>	±1° Maximum
<b>VSWR Input:</b>	1.20:1 Typical
<b>Output:</b>	1.35:1 Typical
<b>Operating Temperature:</b>	-30° to +70° C

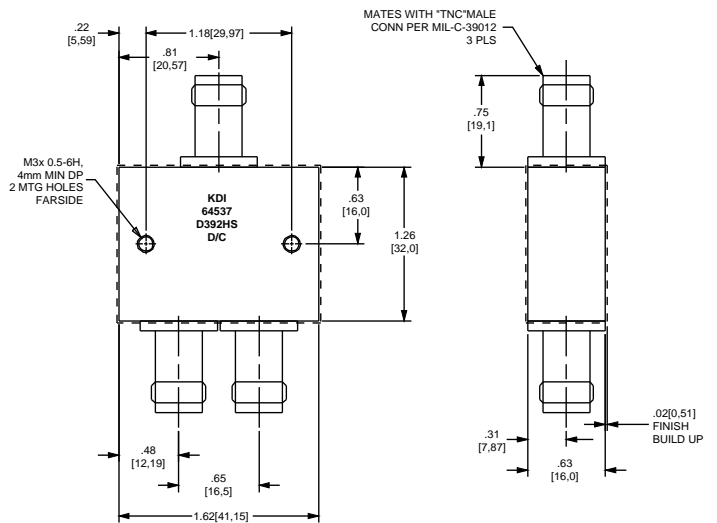
**Note:**

As a combiner input power is 2 watts maximum per port.  
Each input port is able to handle 5 watts if proper heat sink is used.



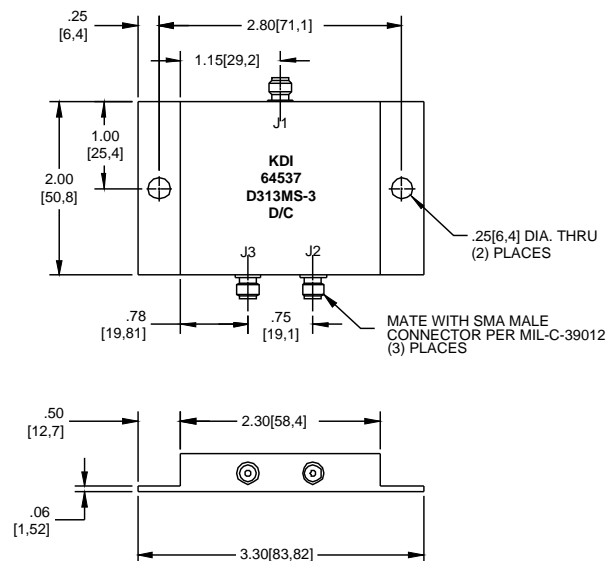
## ELECTRICAL SPECIFICATIONS

<b>Model:</b>	<b>D392HS</b>
<b>Connectors:</b>	TNC
<b>Frequency Range:</b>	810-920 MHz
<b>Insertion Loss:</b>	0.2 dB Maximum
<b>VSWR:</b>	1.2:1 Maximum
<b>Isolation:</b>	22 dB Minimum
<b>Amplitude Balance:</b>	±0.1 dB Maximum
<b>Phase Balance:</b>	±1° Maximum
<b>RF Power:</b>	1 W at each of the combined ports
<b>Third Ord Incp:</b>	+40 dBm Minimum
<b>Operating Temperature:</b>	-30° to +70° C



## ELECTRICAL SPECIFICATIONS

<b>Model:</b>	<b>D313MS-3</b>
<b>Connectors:</b>	SMA
<b>Frequency Range:</b>	0.8-2.0 GHz
<b>VSWR:</b>	1.25:1 Maximum J1-J3
<b>Isolation:</b>	20 dB Minimum J2-J3
<b>Insertion Loss:</b>	3.5 dB Maximum J1-J2 + J1-J3
<b>Internal Load Protection:</b>	0.15 watts Maximum
<b>Input Power:</b>	1 watt Maximum
<b>Amplitude Balance:</b>	±0.1 dB
<b>Phase Balance:</b>	±2° Maximum
<b>Operating Temperature:</b>	-30° to +70° C



KEY: Inches[Millimeters] .XX ±.03 .XXX ±.010 [.X ±0.8 .XX ±0.25]

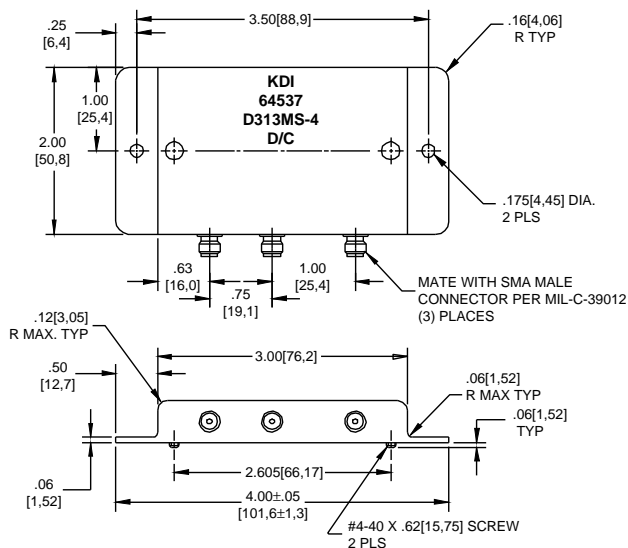


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# 2 WAY DIVIDER/COMBINER, POWER

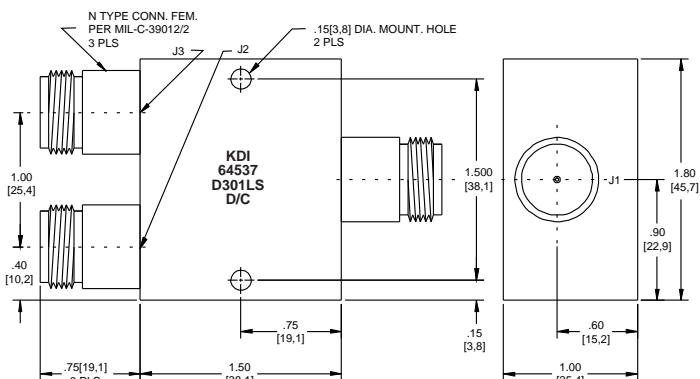
## ELECTRICAL SPECIFICATIONS

<b>Model:</b>	<b>D313MS-4</b>
<b>Connectors:</b>	SMA
<b>Frequency Range:</b>	0.8-2.0 GHz
<b>VSWR:</b>	1.25:1 Maximum J1-J3
<b>Isolation:</b>	20 dB Minimum J2-J3
<b>Insertion Loss:</b>	3.5 dB Maximum J1-J2; J1-J3
<b>Amplitude Balance:</b>	±0.1 dB Maximum
<b>Phase Balance:</b>	±2° Maximum
<b>Internal Load Dissipation:</b>	0.150 Watts Maximum
<b>Operating Temperature:</b>	-30° to +70° C



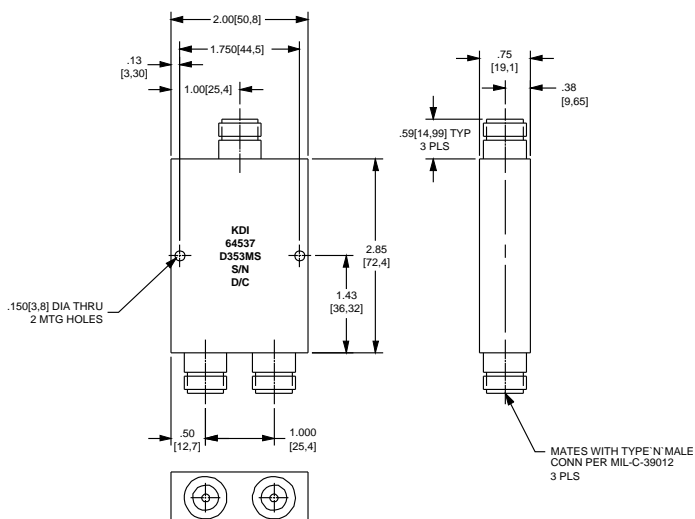
## ELECTRICAL SPECIFICATIONS

<b>Model:</b>	<b>D301LS</b>
<b>Connectors:</b>	Type N
<b>Frequency Range:</b>	880-894 MHz
<b>Insertion Loss:</b>	3.8 dB Maximum
<b>VSWR:</b>	1.30 Maximum
<b>Isolation:</b>	25 dB Minimum
<b>RF Power:</b>	1 Watt combined total
<b>Amplitude Balance:</b>	±0.1 dB Maximum
<b>Phase Balance:</b>	±1.0° Maximum
<b>Operating Temperature:</b>	-55° C to +85° C



## ELECTRICAL SPECIFICATIONS

<b>Model:</b>	<b>D353MS</b>
<b>Connectors:</b>	Type N
<b>Frequency Range:</b>	0.5-2.0 GHz
<b>VSWR:</b>	1.4:1 Typical
<b>Isolation:</b>	18 dB Minimum
<b>Insertion Loss:</b>	3.8 dB Maximum
<b>Input Power:</b>	Unit operates as divider 1 KW Peak Maximum Duty cycle 1.1% Maximum
<b>Amplitude Balance:</b>	±0.2 dB Maximum
<b>Phase Balance:</b>	±5° Maximum
<b>Operating Temperature:</b>	-30° C to +70° C



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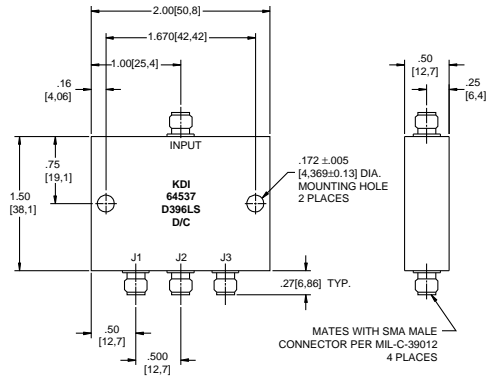


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# 3 WAY DIVIDERS/COMBINERS, POWER

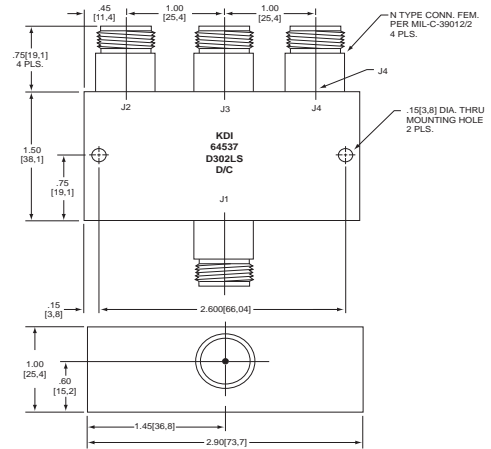
## ELECTRICAL SPECIFICATIONS

Model:	D396LS
Connectors:	SMA
Frequency:	820-900 MHz
VSWR:	1.3:1 Maximum
Isolation:	20 dB Minimum
Insertion Loss:	5.4 dB Maximum (incl. div. loss)
Amplitude Balance:	±0.2 dB Maximum
Phase Balance:	±2° dB Maximum
RF Power:	1 watt Maximum (at input as divider)
Operating Temperature:	0° to +70°C



## ELECTRICAL SPECIFICATIONS

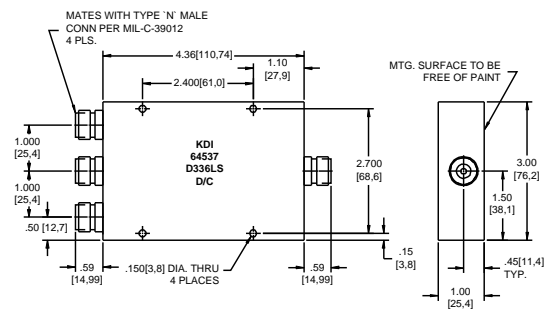
Model:	D302LS
Connectors:	Type N
Frequency:	880-894 MHz
Insertion Loss:	5.4 dB Maximum
VSWR:	1.25 Maximum
Isolation:	30 dB Minimum
RF Power:	1 Watt combined total
Amplitude Balance:	±0.2 dB Maximum
Phase Balance:	±2° dB Maximum
Operating Temperature:	-55° to +85° C



## ELECTRICAL SPECIFICATIONS

Model:	D336LS
Connectors:	Type N
Frequency:	880-900 MHz
Insertion Loss:	5.6 dB Minimum
Isolation:	20 dB Minimum
VSWR:	1.30:1 Maximum
Amplitude Balance:	±0.6 dB Maximum
Phase Balance:	±2° dB Maximum

Internal termination not to dissipate more than 75 W over the temperature range of -55° to 85° C at the mounting surface.



### WHEN USED AS A POWER DIVIDER

Power In	Maximum Ret. Loss*
25W	0 dB
50W	0 dB
100W	2 dB
300W	7 dB
500W	13 dB

\*At outputs any phase

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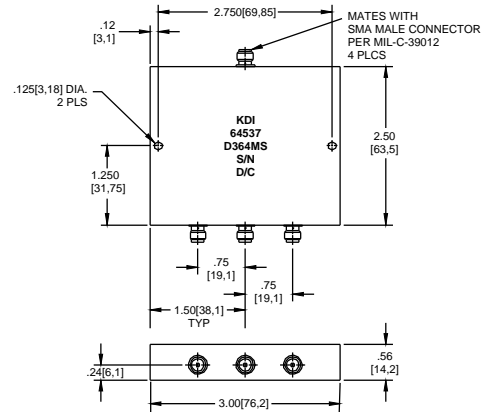


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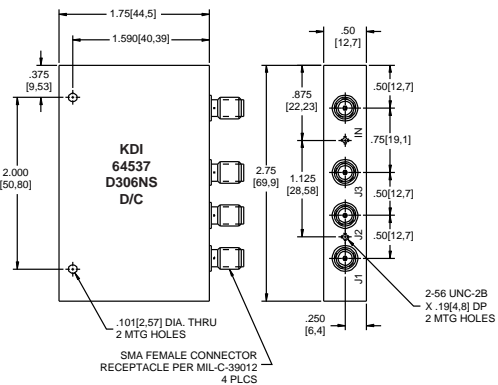
## ELECTRICAL SPECIFICATIONS

Model:	D364MS
Connectors:	SMA
Frequency:	400-2000 MHz
Insertion Loss above 4.8 dB:	1.0 dB
Isolation:	14 dB Minimum
Amplitude Balance:	± 0.2 dB Maximum
Phase Balance:	± 3° Maximum
VSWR:	1.35 Maximum
RF Power:	1 watt Maximum
Operating Temperature:	-30° C to +70° C



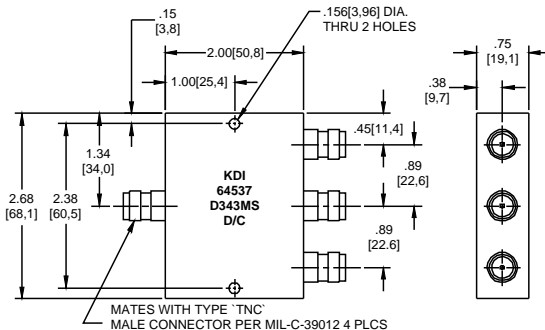
## ELECTRICAL SPECIFICATIONS

Model:	D306NS
Connectors:	SMA
Frequency:	1090 ±10 MHz
VSWR:	1.3:1 Maximum all ports
Isolation:	20 dB Minimum
Differential Loss from J1 to J2 & J3:	.3-.4 dB Typical
Insertion Loss:	In to J2, J3: 0.5 dB above 4.8 dB
Amplitude Balance:	± 0.2 dB Maximum
Phase Balance:	±2° Maximum
RF Power:	1 watt Maximum (matched as divider)
Operating Temperature:	-30° C to +70° C



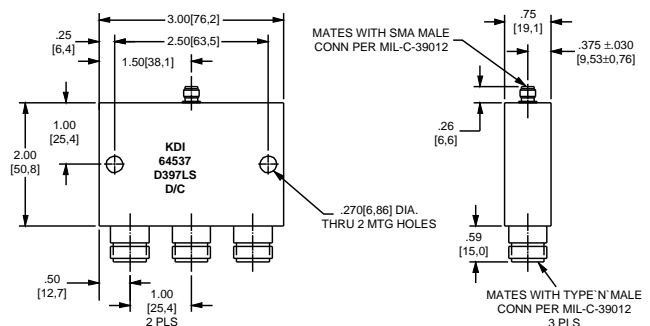
## ELECTRICAL SPECIFICATIONS

Model:	D343MS
Connectors:	TNC
Frequency:	850-900 MHz
Insertion Loss:	0.5 dB Maximum
Isolation:	20 dB Minimum
Amplitude Balance:	±0.2 dB Maximum
Phase Balance:	±2° Maximum
VSWR:	1.3:1 Maximum for all ports
RF Power:	1 watt Maximum
Operating Temperature:	-30° C to +70° C



## ELECTRICAL SPECIFICATIONS

Model:	D397LS
Connectors:	SMA/N
Frequency:	800-900 MHz
VSWR:	1.2:1 dB Maximum
Isolation:	20.0 dB Minimum
Insertion Loss:	5.3 dB Maximum (incl. divide loss)
RF Power:	0.5 watts Minimum at combined port
Amplitude Balance:	±0.2 dB Maximum
Phase Balance:	±2° Maximum
Operating Temperature:	-30° C to +70° C



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