



(LTCC) COAXIAL

Diplexer

ZDPL-6G-S+

50Ω DC to 6000 (DC to 1650 , 2400-6000) MHz SMA Female

KEY FEATURES

- Low Insertion Loss 1.80 dB Typ
- Wideband Rejection 20 dB Typ
- Good return loss 16 dB Typ
- Temperature Stable
- Connectorized Package

APPLICATIONS

- Satellite Communication systems
- Test and Measurement

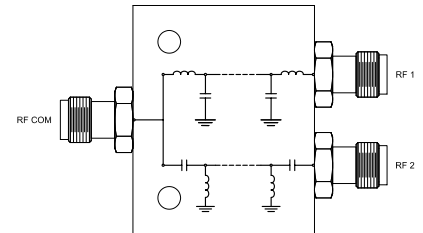
PRODUCT OVERVIEW

Mini-Circuits' Model-ZDPL-6G-S+ is a 50Ω good performance diplexer in a connectorized package with the Low pass port at DC-1650 MHz and High pass port at 2400-6000MHz. The model has Good return loss and rejection over extended frequency range. Easy to interface with other device and well suited for test setups.



Generic photo used for illustration purposes only

FUNCTIONAL DIAGRAM



ELECTRICAL SPECIFICATIONS AT ¹+25°C

Parameter	Function (Port)	Frequency (MHz)	Min.	Typ.	Max.	Unit
Insertion Loss	Low Pass (RF COM-RF1)	DC - 1650	—	—	1.80	dB
		High Pass (RF COM-RF2)	2400 - 2500	—	—	
	High Pass (RF COM-RF2)	2500 - 4200	—	—	1.80	
		4200 - 6000	—	—	2	
Pass Band	Low Pass (RF1)	DC - 1650	—	16	—	dB
		High Pass (RF2)	2400 - 2500	—	12	
	High Pass (RF2)	2500 - 4200	—	10	—	
		4200 - 6000	—	13	—	
	Common (COM)	DC - 1650	—	16	—	
		2400 - 2500	—	12	—	
2500 - 4200		—	10	—		
Stop Band	Low Pass (RF COM-RF1)	2400 - 4200	—	15	—	dB
		4200 - 6000	—	20	—	
	High Pass (RF COM-RF2)	DC - 200	—	20	—	
		200 - 1400	—	14	—	
		1400 - 1650	—	16	—	
		1650 - 2400	—	16	—	

1. This component should not be used as a DC-block. In applications where DC voltage and/or current is present either the input or output ports, external DC blocking capacitors are required.

ABSOLUTE MAXIMUM RATINGS²

Operating Temperature	-55 °C to +100 °C
Storage Temperature	-55 °C to +100 °C
Input Power (RF COM) ³	5.5W
Input Power (RF1) ⁴	5.5W
Input Power (RF2) ⁵	5.5W

2. Permanent damage may occur if any of these limits are exceeded.

3. Power rating applies only to signals within the passband. Power rating above +25°C operating temperature decreases linearly to 2.1 W at +100°C.

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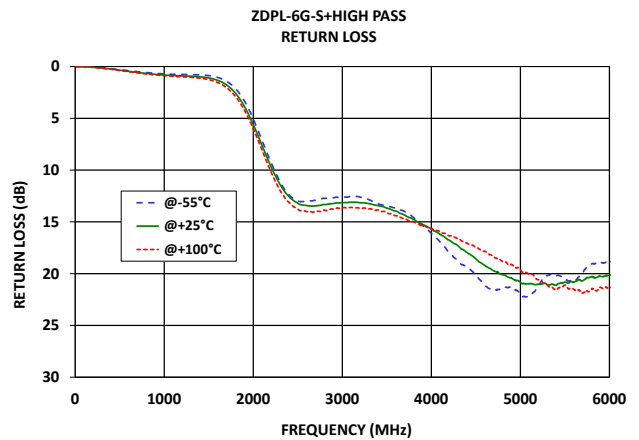
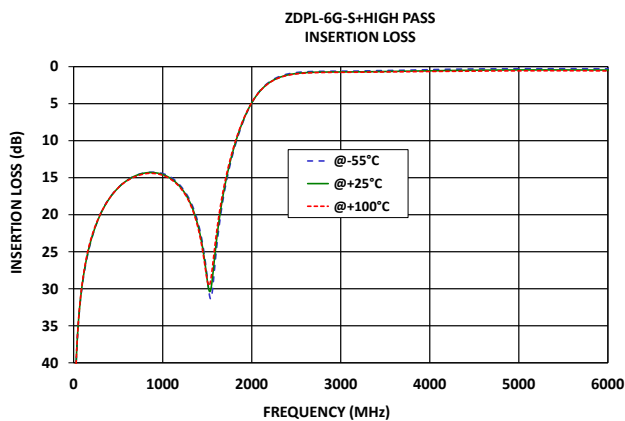
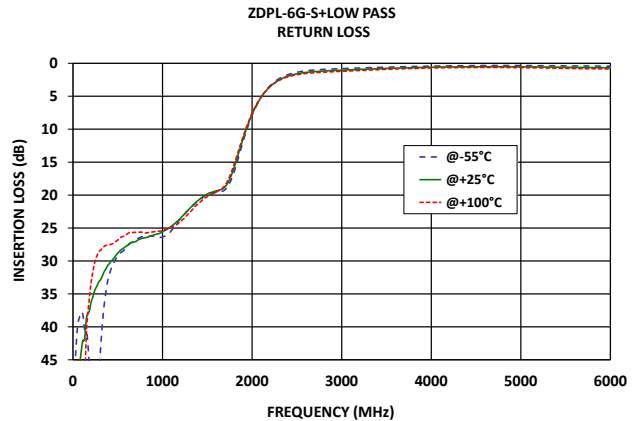
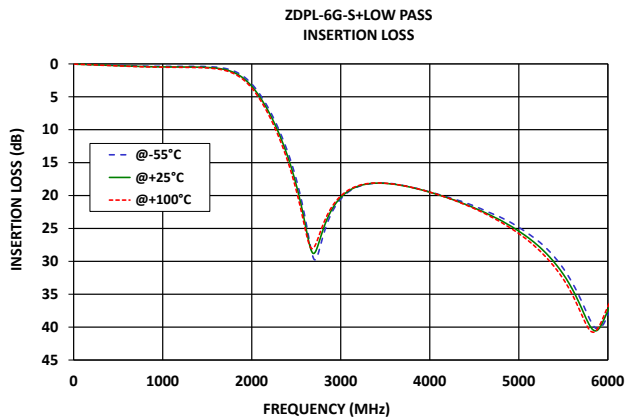
Diplexer

ZDPL-6G-S+

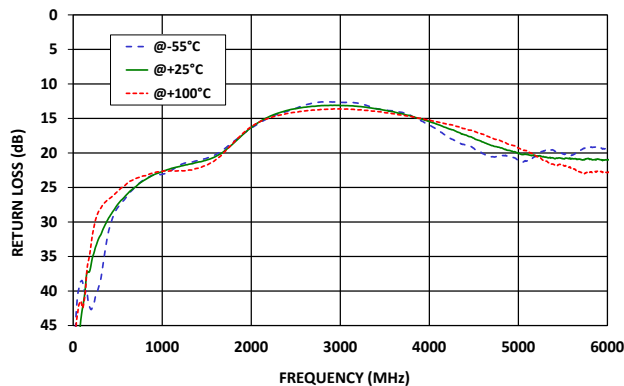
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50Ω DC to 6000 (DC to 1650 , 2400-6000) MHz SMA Female

TYPICAL PERFORMANCE GRAPHS



ZDPL-6G-S+ COMMON PORT





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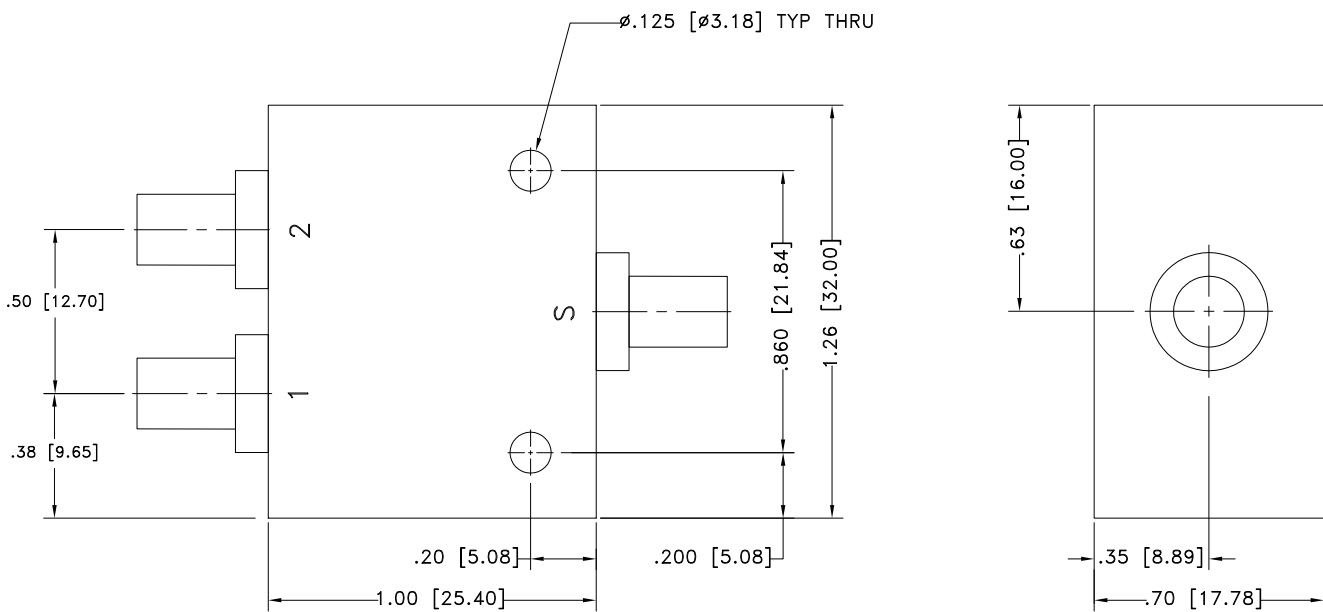
Mini-Circuits

50Ω DC to 6000 (DC to 1650 , 2400-6000) MHz SMA Female

CONNECTOR DESCRIPTION

Function	Marking on Unit	Connector
RF COM	S	SMA Female
RF1	1	SMA Female
RF2	2	SMA Female

CASE STYLE DRAWING



Unit Weight: 24.0 Grams.

Dimensions are in inches (mm). Tolerances: 2 Pl. ± .03; 3 Pl. ± .015

PRODUCT MARKING*: ZDPL-6G-S+

*Marking may contain other features or characters for internal lot control.





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ZDPL-6G-S+

50Ω DC to 6000 (DC to 1650 , 2400-6000) MHz SMA Female

ADDITIONAL INFORMATION IS AVAILABLE ON OUR DASHBOARD

[CLICK HERE](#)

Performance Data & Graphs	<p>Data</p> <p>Graphs</p> <p>S-Parameter (SXP Files) Data Set (.zip file)</p>
Case Style	F183
RoHS Status	Compliant
Environmental Ratings	ENV46

NOTES

- A. Performance and quality attributes and conditions not expressly stated in this specification document are intended to be excluded and do not form a part of this specification document.
- B. Electrical specifications and performance data contained in this specification document are based on Mini-Circuits' applicable established test performance criteria and measurement instructions.
- C. The parts covered by this specification document are subject to Mini-Circuits' standard limited warranty and terms and conditions (collectively, "Standard Terms"); Purchasers of this part are entitled to the rights and benefits contained therein. For a full statement of the standard terms and the exclusive rights and remedies thereunder, please visit Mini-Circuits' website at www.minicircuits.com/terms/viewterm.html



Typical Performance Data

FREQUENCY (MHz)	INSERTION LOSS (dB)					
	Lowpass port			Highpass port		
	@-55°C	@+25°C	@+125°C	@-55°C	@+25°C	@+125°C
10.0	0.02	0.03	0.03	49.10	49.07	49.02
50.0	0.05	0.05	0.05	35.19	35.09	35.01
100.0	0.06	0.07	0.07	29.27	29.11	28.96
150.0	0.08	0.10	0.10	25.82	25.64	25.46
200.0	0.10	0.12	0.13	23.35	23.24	23.08
250.0	0.12	0.14	0.15	21.44	21.42	21.32
300.0	0.14	0.17	0.18	19.93	19.96	19.92
350.0	0.16	0.19	0.21	18.74	18.80	18.79
400.0	0.18	0.22	0.24	17.79	17.83	17.84
450.0	0.21	0.24	0.26	17.01	17.03	17.04
500.0	0.23	0.27	0.29	16.36	16.37	16.38
550.0	0.25	0.29	0.32	15.79	15.81	15.84
600.0	0.28	0.32	0.34	15.34	15.36	15.41
650.0	0.30	0.34	0.37	14.96	14.99	15.06
700.0	0.32	0.37	0.39	14.68	14.70	14.79
750.0	0.33	0.39	0.41	14.48	14.51	14.59
800.0	0.35	0.41	0.44	14.33	14.36	14.44
850.0	0.36	0.42	0.45	14.26	14.30	14.38
900.0	0.37	0.43	0.46	14.27	14.32	14.39
950.0	0.38	0.44	0.48	14.33	14.40	14.47
1000.0	0.39	0.45	0.49	14.47	14.57	14.65
1100.0	0.40	0.46	0.50	15.03	15.18	15.26
1200.0	0.40	0.47	0.51	16.13	16.28	16.37
1300.0	0.40	0.48	0.52	17.96	18.18	18.29
1400.0	0.40	0.49	0.54	21.28	21.63	21.86
1500.0	0.43	0.54	0.60	28.51	28.79	28.88
1600.0	0.52	0.64	0.71	24.90	23.93	23.09
1650.0	0.60	0.73	0.81	19.99	19.41	18.86
1700.0	0.72	0.87	0.96	16.38	15.98	15.60
1800.0	1.12	1.31	1.44	11.21	10.96	10.78
1900.0	1.88	2.11	2.28	7.51	7.40	7.32
2000.0	3.11	3.39	3.61	4.90	4.89	4.87
2100.0	4.86	5.19	5.47	3.16	3.21	3.21
2200.0	7.13	7.53	7.88	2.06	2.14	2.16
2300.0	9.93	10.40	10.84	1.40	1.50	1.54
2400.0	13.35	13.91	14.45	1.02	1.13	1.17
2500.0	17.67	18.39	19.01	0.82	0.92	0.97
2600.0	23.58	24.32	24.89	0.71	0.81	0.86
3000.0	20.48	20.29	20.12	0.62	0.71	0.75
3200.0	18.62	18.56	18.50	0.61	0.69	0.74
3400.0	18.12	18.12	18.09	0.56	0.67	0.72
3600.0	18.25	18.28	18.27	0.53	0.63	0.69
3800.0	18.79	18.79	18.77	0.48	0.60	0.66
4000.0	19.49	19.49	19.47	0.43	0.56	0.63
4200.0	20.28	20.35	20.34	0.38	0.52	0.60
4400.0	21.15	21.34	21.38	0.35	0.49	0.58
4600.0	22.23	22.48	22.58	0.33	0.47	0.56
4800.0	23.42	23.80	24.00	0.32	0.45	0.55
4900.0	24.10	24.57	24.83	0.31	0.45	0.54
5000.0	24.92	25.42	25.72	0.30	0.44	0.54
5100.0	25.82	26.36	26.70	0.30	0.44	0.54
5200.0	26.83	27.44	27.86	0.30	0.44	0.53
5300.0	28.01	28.70	29.17	0.31	0.44	0.53
5400.0	29.45	30.19	30.72	0.30	0.44	0.52
5500.0	31.21	31.98	32.56	0.30	0.44	0.53
5600.0	33.39	34.21	34.86	0.30	0.45	0.53
5700.0	36.08	36.98	37.72	0.31	0.44	0.53
5800.0	39.07	39.84	40.36	0.32	0.45	0.54
5900.0	40.32	40.22	39.99	0.32	0.45	0.54
6000.0	38.11	37.48	36.97	0.32	0.46	0.55

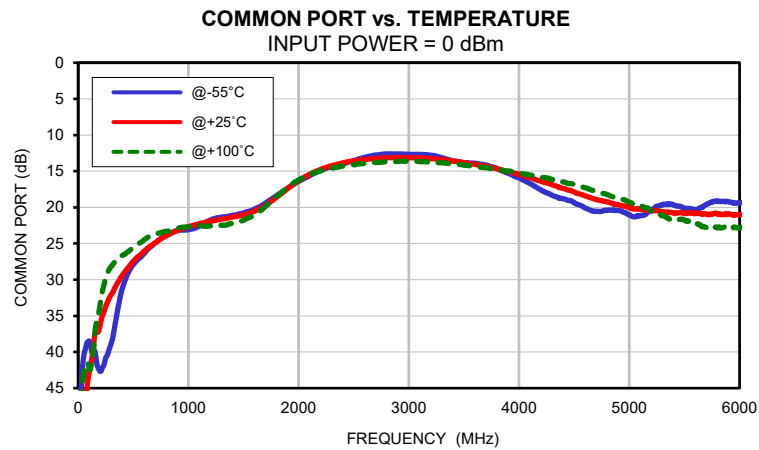
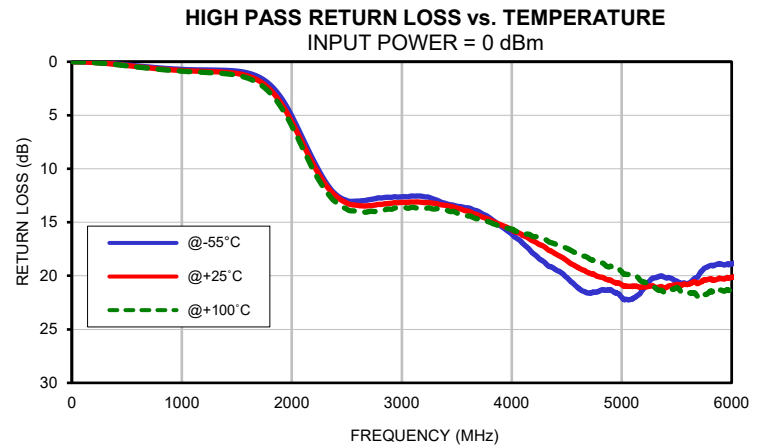
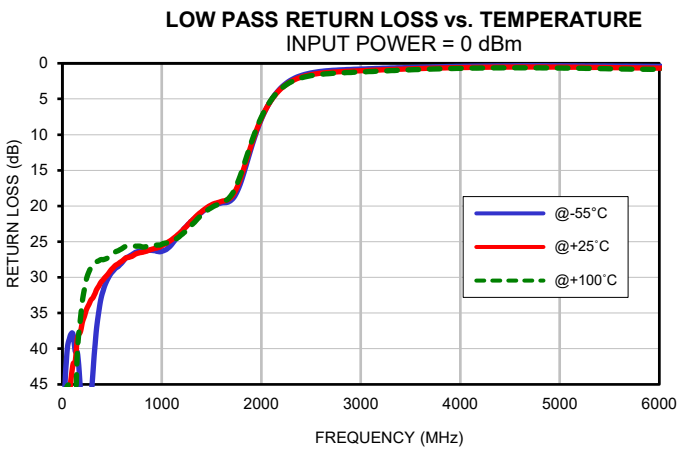
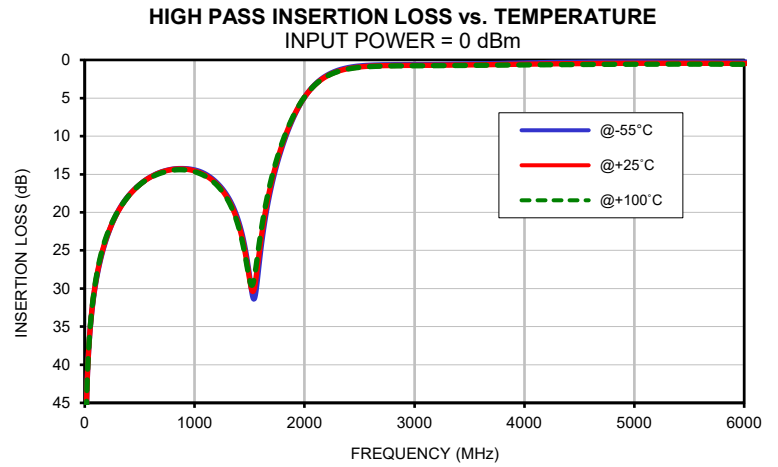
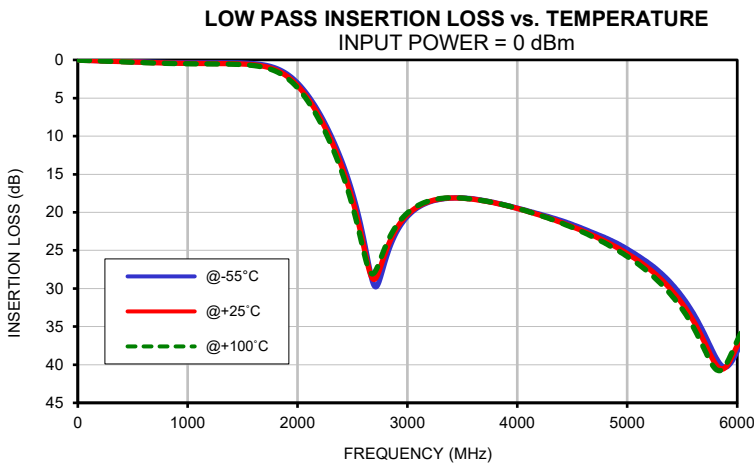
Ceramic Diplexer

ZDPL-6G-S+

Typical Performance Data

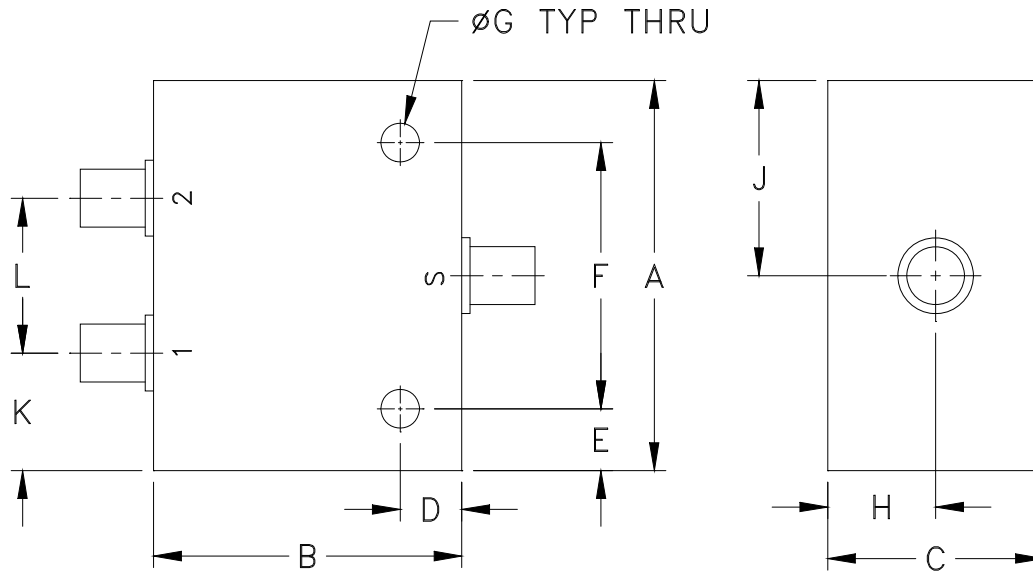
FREQUENCY (MHz)	RETURN LOSS (dB)								
	Common port			Lowpass port			Highpass port		
	@-55°C	@+25°C	@+125°C	@-55°C	@+25°C	@+125°C	@-55°C	@+25°C	@+125°C
10.0	57.80	65.90	55.11	52.57	65.29	63.24	0.00	0.00	0.01
50.0	41.49	50.64	46.01	40.81	50.04	49.06	0.00	0.00	0.01
100.0	38.87	42.82	43.54	38.13	42.87	57.27	0.01	0.02	0.02
150.0	39.43	37.61	37.73	40.14	38.70	40.39	0.03	0.04	0.05
200.0	41.93	36.27	33.85	46.99	36.38	33.96	0.05	0.07	0.08
250.0	40.05	33.67	30.44	49.17	34.26	30.59	0.08	0.10	0.12
300.0	37.67	32.06	28.90	42.30	32.98	29.21	0.12	0.14	0.16
350.0	34.10	30.65	27.91	35.57	31.58	28.42	0.17	0.19	0.21
400.0	30.81	29.38	27.15	31.91	30.48	27.96	0.21	0.24	0.26
450.0	28.96	28.40	26.63	30.22	29.69	27.72	0.26	0.29	0.31
500.0	27.87	27.45	26.02	29.25	28.80	27.24	0.31	0.35	0.38
550.0	27.18	26.73	25.47	28.71	28.19	26.77	0.36	0.40	0.43
600.0	26.43	26.05	24.92	28.09	27.72	26.39	0.41	0.46	0.49
650.0	25.57	25.42	24.43	27.30	27.23	26.04	0.46	0.52	0.54
700.0	24.86	24.92	24.08	26.84	27.05	26.03	0.50	0.57	0.60
750.0	24.23	24.35	23.79	26.41	26.66	25.94	0.55	0.62	0.66
800.0	23.82	23.93	23.55	26.33	26.49	25.98	0.60	0.67	0.71
850.0	23.50	23.55	23.28	26.31	26.31	25.88	0.63	0.71	0.75
900.0	23.22	23.19	23.04	26.25	26.06	25.72	0.67	0.75	0.79
950.0	23.08	22.93	22.83	26.28	25.88	25.60	0.70	0.79	0.83
1000.0	22.97	22.69	22.71	26.18	25.58	25.41	0.73	0.82	0.87
1100.0	22.51	22.25	22.50	25.32	24.72	24.83	0.77	0.87	0.92
1200.0	21.79	21.94	22.44	23.64	23.54	23.87	0.79	0.90	0.97
1300.0	21.33	21.63	22.31	22.06	22.09	22.53	0.81	0.93	1.02
1400.0	21.15	21.34	22.06	20.91	20.79	21.20	0.84	0.99	1.10
1500.0	20.82	21.02	21.67	19.92	19.84	20.16	0.91	1.10	1.23
1600.0	20.22	20.51	20.97	19.47	19.36	19.54	1.10	1.33	1.50
1650.0	19.89	20.17	20.53	19.40	19.19	19.24	1.26	1.52	1.70
1700.0	19.45	19.70	19.91	19.06	18.71	18.56	1.49	1.77	1.98
1800.0	18.45	18.61	18.61	16.34	15.78	15.44	2.21	2.58	2.82
1900.0	17.35	17.40	17.33	11.73	11.41	11.18	3.42	3.85	4.14
2000.0	16.37	16.31	16.26	7.82	7.73	7.62	5.16	5.60	5.92
2100.0	15.55	15.43	15.46	5.15	5.18	5.15	7.25	7.65	8.00
2200.0	14.84	14.74	14.88	3.43	3.54	3.56	9.34	9.68	10.06
2300.0	14.35	14.23	14.46	2.38	2.54	2.60	11.17	11.39	11.78
2400.0	13.98	13.85	14.13	1.76	1.95	2.04	12.45	12.55	12.94
2500.0	13.56	13.58	13.92	1.40	1.59	1.70	13.04	13.21	13.59
2600.0	13.10	13.37	13.72	1.18	1.39	1.51	13.08	13.42	13.79
3000.0	12.75	13.12	13.45	0.85	1.04	1.16	12.74	13.15	13.50
3200.0	12.82	13.25	13.62	0.75	0.93	1.05	12.68	13.15	13.57
3400.0	13.52	13.60	13.88	0.67	0.83	0.93	13.24	13.43	13.77
3600.0	13.87	14.04	14.29	0.58	0.73	0.82	13.66	13.95	14.33
3800.0	14.62	14.68	14.77	0.51	0.66	0.74	14.60	14.75	14.97
4000.0	15.82	15.44	15.32	0.46	0.60	0.69	16.02	15.70	15.71
4200.0	17.45	16.42	16.01	0.42	0.56	0.65	17.78	16.77	16.46
4400.0	18.66	17.39	16.72	0.39	0.53	0.63	19.28	17.96	17.26
4600.0	19.91	18.42	17.55	0.37	0.52	0.62	20.90	19.21	18.12
4800.0	20.24	19.27	18.51	0.37	0.52	0.62	21.20	20.11	19.10
4900.0	20.27	19.65	19.07	0.38	0.53	0.64	21.15	20.40	19.43
5000.0	20.94	20.08	19.57	0.38	0.53	0.64	21.84	20.82	19.88
5100.0	21.02	20.21	19.93	0.39	0.55	0.66	21.93	20.95	20.30
5200.0	20.42	20.45	20.65	0.40	0.56	0.67	21.13	21.05	20.84
5300.0	19.76	20.60	21.24	0.41	0.57	0.68	20.29	21.05	21.21
5400.0	19.82	20.78	21.66	0.42	0.59	0.71	20.30	21.12	21.58
5500.0	20.27	20.82	21.67	0.43	0.60	0.73	20.55	20.81	21.07
5600.0	20.39	20.78	21.98	0.44	0.62	0.75	20.76	20.82	21.44
5700.0	19.85	20.96	22.55	0.45	0.64	0.77	20.08	20.67	21.67
5800.0	19.40	20.91	22.43	0.46	0.65	0.78	19.20	20.29	21.21
5900.0	19.46	20.93	22.42	0.47	0.66	0.80	19.06	20.26	21.12
6000.0	19.72	21.00	22.48	0.49	0.68	0.81	19.10	20.14	21.07

Typical Performance Curves



Outline Dimensions

F183



CASE #	A	B	C	D	E	F	G	H	J	K	L	WT. GRAM
F183	1.26 (32.00)	1.00 (25.40)	.70 (17.78)	.20 (5.08)	.200 (5.08)	.860 (21.84)	.125 (3.18)	.35 (8.89)	.63 (16.00)	.38 (9.65)	.50 (12.70)	24.0

Dimensions are in inches (mm). Tolerances: 2Pl. ± .03; 3Pl. ± .015

Notes:

- Case material: Aluminum alloy.
- Case finish:
For RoHS Case Styles: Clear chemical conversion coating, non-chrome or trivalent chrome based.
- Refer to the individual model data sheet for the type of connectors available.

Mini-Circuits®

INTERNET <http://www.minicircuits.com>

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Mini-Circuits ISO 9001 & ISO 14001 Certified

All Mini-Circuits products are manufactured under exacting quality assurance and control standards, and are capable of meeting published specifications after being subjected to any or all of the following physical and environmental test.

Specification	Test/Inspection Condition	Reference/Spec
Operating Temperature	-55° to 100°C Ambient Environment	Individual Model Data Sheet
Storage Temperature	-55° to 100° C Ambient Environment	Individual Model Data Sheet
Humidity	90 to 95% RH, 40°C, 96 hours; Units may require bake-out after humidity to restore full performance.	MIL-STD-202, Method 103, Condition B
Thermal Shock	-55° to 100°C, 100 cycles	MIL-STD-202, Method 107, Condition A-3, except +100°C
Vibration (High Frequency)	20g peak, 10-2000 Hz, 12 times in each of three perpendicular directions (total 36)	MIL-STD-202, Method 204, Condition D
Mechanical Shock	50g, 11ms half-sine, 3 shocks each direction 3 axes (total 18)	MIL-STD-202, Method 213, Condition A