CERAMIC RESONATOR COAXIAL

Band Stop Filter

ZCBS4-632-S+

50Ω 622 to 642 MHz SMA-Male/Female

KEY FEATURES

- Low Insertion Loss, 1.3 dB Typ.
- Fast Roll-off
- Connectorized Package

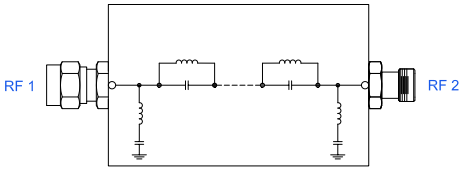


Generic photo used for illustration purposes only

APPLICATIONS

- Radio Astronomy

FUNCTIONAL DIAGRAM



PRODUCT OVERVIEW

Mini-Circuits' ZCBS4-632-S+ is a Ceramic resonator band stop filter that offer a good insertion loss and high rejection. This band stop filter rejects from 622 to 642 MHz. While passing 400 - 610 MHz and 655 - 800 MHz, this filter has high Q capacitors and inductors to achieve a low insertion loss. It has repeatable performance across production lots.

ELECTRICAL SPECIFICATIONS AT +25°C

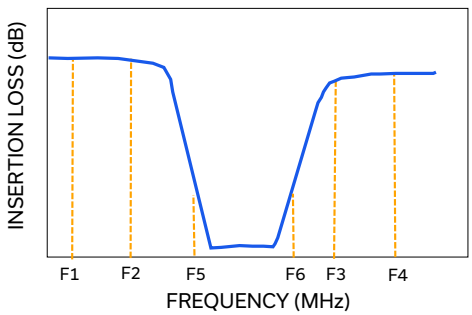
Parameter		F#	Frequency (MHz)	Min.	Typ.	Max.	Units
Passband, Lower	Insertion Loss	F1-F2	400 - 610	—	1.3	2	dB
	Return Loss	F1-F2	400 - 610	10	14	—	dB
Stopband	Rejection	F5-F6	622 - 642	12	16	—	dB
Passband, Upper	Insertion Loss	F3-F4	655 - 800	—	1.3	2	dB
	Return Loss	F3-F4	655 - 800	10	14	—	

ABSOLUTE MAXIMUM RATINGS[1]

Operating Temperature	-40°C to +85°C
Storage Temperature	-55°C to +100°C
Input Power[2]	5 W at +25°C

1. Permanent damage may occur if any of these limits are exceeded.
2. Power rating applies only to signals within the passband. Power rating above +25°C operating temperature decreases linearly to 1 W at +85°C.

TYPICAL FREQUENCY RESPONSE



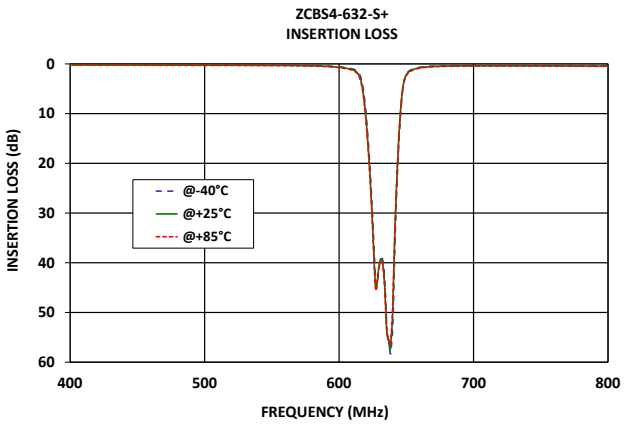
REV. OR
ECO-030757
ZCBS4-632-S+
EDU5510
URJ
260818

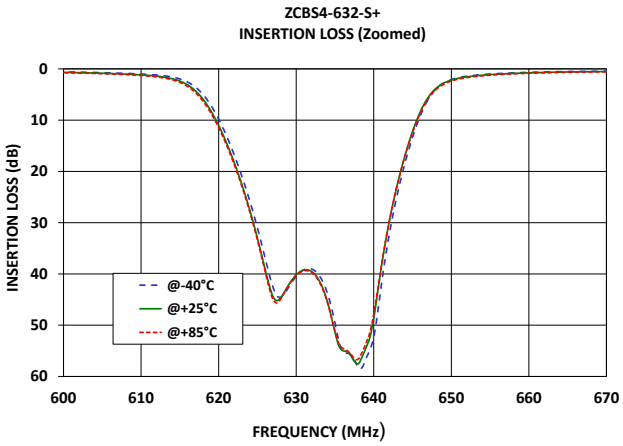
Band Stop Filter

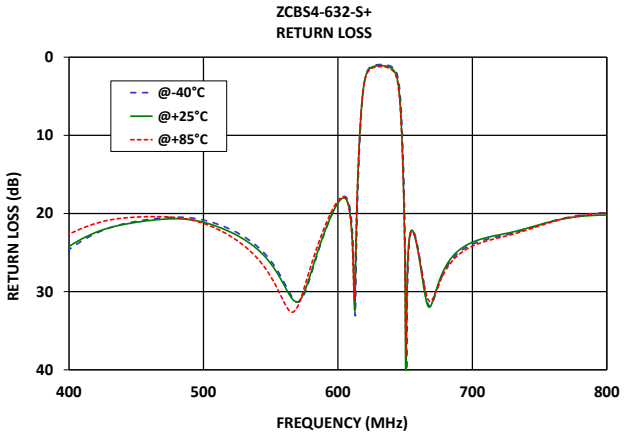
ZCBS4-632-S+

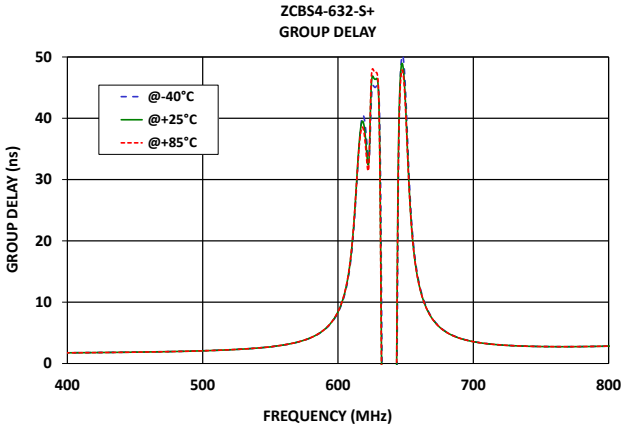
50Ω 622 to 642 MHz SMA-Male/Female

TYPICAL PERFORMANCE GRAPHS









Band Stop Filter

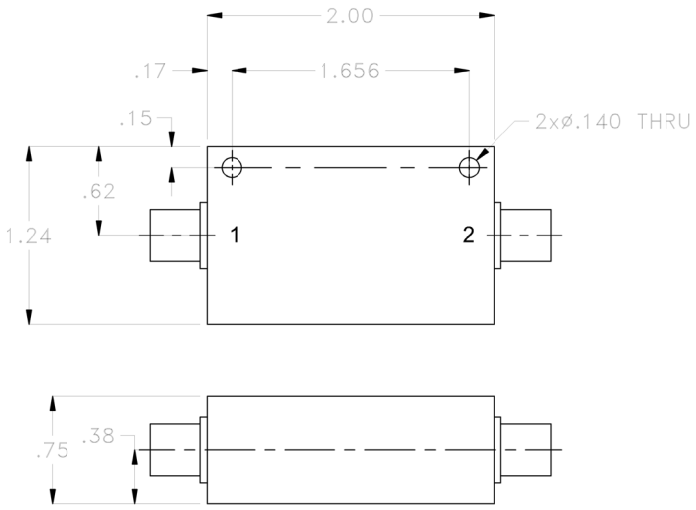
ZCBS4-632-S+

50Ω 622 to 642 MHz SMA-Male/Female

CONNECTOR DESCRIPTION

Function	Connector
RF1	SMA-Male
RF2	SMA-Female

CASE STYLE DRAWING



Weight: 57 gram
Dimensions are in inches (mm). Tolerances: 2Pl. ± .03; 3Pl. ± .015

PRODUCT MARKING*: ZCBS4-632-S+

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

Band Stop Filter

ZCBS4-632-S+

50Ω 622 to 642 MHz SMA-Male/Female

ADDITIONAL INFORMATION IS AVAILABLE ON OUR DASHBOARD CLICK HERE

Performance Data & Graphs	Data Graphs S-Parameter (S2P Files) Data Set (.zip file)
Case Style	FM587-1
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

Coaxial Band Stop Filter ZCBS4-632-S+

Typical Performance Data

FREQ.	INSERTION LOSS			INPUT RETURN LOSS			OUTPUT RETURN LOSS		
(MHz)	(dB)			(dB)			(dB)		
	@-40°C	@+25°C	@+85°C	@-40°C	@+25°C	@+85°C	@-40°C	@+25°C	@+85°C
400	0.15	0.20	0.23	24.62	24.22	22.65	24.27	23.95	22.51
405	0.16	0.20	0.23	24.01	23.69	22.24	23.73	23.46	22.12
410	0.16	0.20	0.24	23.47	23.21	21.87	23.24	23.03	21.77
415	0.17	0.21	0.24	22.97	22.79	21.55	22.81	22.66	21.48
420	0.17	0.21	0.25	22.53	22.41	21.26	22.44	22.34	21.24
425	0.18	0.22	0.25	22.16	22.10	21.03	22.13	22.08	21.05
430	0.18	0.22	0.25	21.84	21.83	20.84	21.85	21.85	20.89
435	0.18	0.22	0.26	21.58	21.61	20.70	21.61	21.65	20.77
440	0.19	0.23	0.26	21.36	21.43	20.59	21.39	21.47	20.66
445	0.19	0.23	0.26	21.17	21.27	20.52	21.19	21.30	20.57
450	0.19	0.24	0.27	21.01	21.13	20.46	21.02	21.16	20.51
455	0.20	0.24	0.27	20.86	21.00	20.42	20.86	21.02	20.45
460	0.20	0.24	0.28	20.75	20.90	20.41	20.73	20.91	20.43
470	0.21	0.25	0.28	20.56	20.73	20.42	20.56	20.76	20.45
475	0.21	0.25	0.28	20.50	20.69	20.46	20.52	20.74	20.50
480	0.21	0.26	0.29	20.47	20.68	20.52	20.52	20.75	20.60
485	0.21	0.26	0.29	20.49	20.71	20.63	20.57	20.83	20.75
490	0.22	0.26	0.29	20.55	20.80	20.79	20.67	20.95	20.95
495	0.22	0.26	0.29	20.67	20.93	21.00	20.82	21.12	21.20
500	0.22	0.27	0.30	20.84	21.13	21.27	21.02	21.35	21.51
505	0.22	0.27	0.30	21.06	21.37	21.59	21.26	21.61	21.85
510	0.22	0.27	0.30	21.34	21.66	21.97	21.56	21.93	22.27
515	0.22	0.27	0.30	21.65	21.99	22.41	21.88	22.27	22.72
520	0.22	0.27	0.30	22.02	22.37	22.90	22.26	22.67	23.24
525	0.23	0.28	0.30	22.45	22.80	23.46	22.68	23.12	23.82
530	0.23	0.28	0.31	22.95	23.30	24.11	23.20	23.64	24.51
535	0.23	0.28	0.31	23.53	23.88	24.86	23.81	24.26	25.32
540	0.23	0.29	0.32	24.20	24.55	25.72	24.54	25.01	26.30
545	0.24	0.29	0.32	25.03	25.38	26.78	25.44	25.93	27.52
550	0.24	0.30	0.33	26.05	26.41	28.07	26.52	27.05	28.99
555	0.25	0.30	0.34	27.30	27.66	29.62	27.88	28.46	30.83
560	0.25	0.31	0.35	28.83	29.19	31.38	29.46	30.11	32.81
656	0.92	1.03	1.13	22.18	22.35	22.41	22.12	22.34	22.43
570	0.28	0.34	0.38	31.32	31.30	31.90	31.72	32.04	32.42
575	0.29	0.36	0.40	30.30	30.02	29.45	30.39	30.36	29.53
580	0.32	0.39	0.43	27.81	27.53	26.65	27.81	27.64	26.62
585	0.35	0.42	0.48	25.06	24.86	24.06	25.06	24.91	24.03
590	0.40	0.48	0.54	22.53	22.41	21.77	22.53	22.43	21.75
595	0.47	0.56	0.62	20.34	20.30	19.84	20.32	20.29	19.79
600	0.58	0.68	0.75	18.61	18.66	18.37	18.53	18.58	18.25
605	0.74	0.86	0.94	17.82	18.03	17.94	17.59	17.76	17.62
610	1.00	1.17	1.29	20.69	21.61	22.00	19.40	19.88	19.88
615	1.97	2.38	2.64	16.20	14.68	14.19	15.28	13.99	13.46
620	9.79	11.02	11.46	2.90	2.87	2.99	3.26	3.28	3.41
622	16.74	18.22	18.62	1.72	1.82	1.96	2.20	2.37	2.54
624	25.69	27.46	27.83	1.28	1.41	1.55	1.91	2.13	2.32
628	44.57	44.66	44.92	1.00	1.14	1.26	2.18	2.54	2.80
630	40.48	40.19	40.29	0.96	1.09	1.21	2.74	3.23	3.57
632	39.06	39.54	39.74	0.94	1.08	1.20	3.73	4.40	4.83
634	43.67	45.27	45.47	0.95	1.10	1.23	4.61	5.22	5.64
636	55.26	54.95	54.50	1.00	1.16	1.29	4.07	4.38	4.69
638	58.29	57.56	56.62	1.08	1.26	1.40	3.00	3.23	3.49
642	32.27	29.79	29.73	1.51	1.81	2.00	2.20	2.49	2.73
650	2.08	2.18	2.38	23.81	28.78	28.34	17.10	18.21	18.28
655	1.00	1.12	1.23	22.09	22.13	22.24	21.71	21.83	21.96
670	0.44	0.52	0.58	31.57	31.43	31.08	35.19	35.22	35.11
680	0.36	0.43	0.48	27.12	26.83	27.30	28.31	28.06	28.84
700	0.31	0.38	0.43	23.93	23.67	24.18	25.03	24.76	25.48
750	0.32	0.39	0.44	21.47	21.43	21.58	22.09	22.03	22.23
800	0.37	0.45	0.50	19.89	20.20	19.93	20.35	20.66	20.39

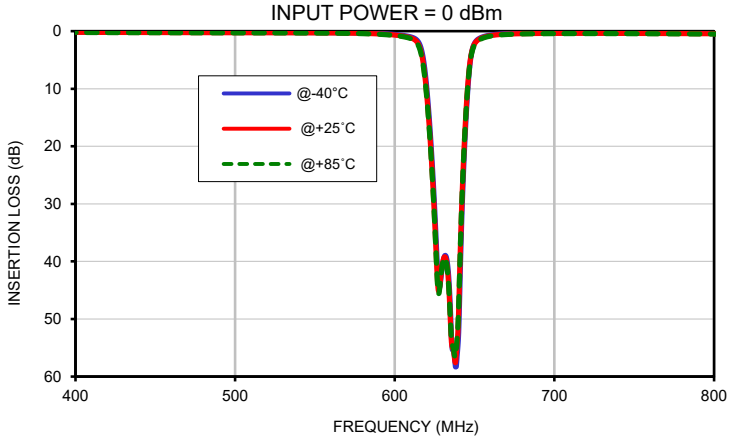
Typical Performance Data

FREQ.	GROUP DELAY-1		
(MHz)	(ns)		
	@-40°C	@+25°C	@+85°C
400	1.75	1.75	1.74
405	1.76	1.76	1.75
410	1.77	1.76	1.76
415	1.78	1.77	1.77
420	1.79	1.78	1.78
425	1.80	1.79	1.79
430	1.81	1.80	1.80
435	1.82	1.82	1.81
440	1.83	1.83	1.82
445	1.84	1.84	1.84
450	1.86	1.85	1.85
455	1.87	1.87	1.87
460	1.89	1.89	1.88
465	1.91	1.90	1.90
470	1.93	1.92	1.92
475	1.94	1.94	1.94
480	1.97	1.96	1.96
485	1.99	1.99	1.98
490	2.02	2.01	2.01
495	2.04	2.04	2.04
500	2.08	2.07	2.07
505	2.11	2.11	2.11
510	2.15	2.15	2.15
515	2.20	2.19	2.19
520	2.24	2.24	2.24
525	2.30	2.30	2.30
530	2.36	2.36	2.36
535	2.43	2.43	2.44
540	2.52	2.52	2.52
545	2.61	2.61	2.62
550	2.70	2.71	2.71
555	2.86	2.87	2.87
560	3.02	3.03	3.04
565	3.23	3.23	3.24
570	3.48	3.49	3.49
575	3.79	3.81	3.81
580	4.20	4.22	4.23
585	4.74	4.78	4.79
590	5.50	5.55	5.56
600	8.30	8.43	8.46
610	17.84	18.46	18.59

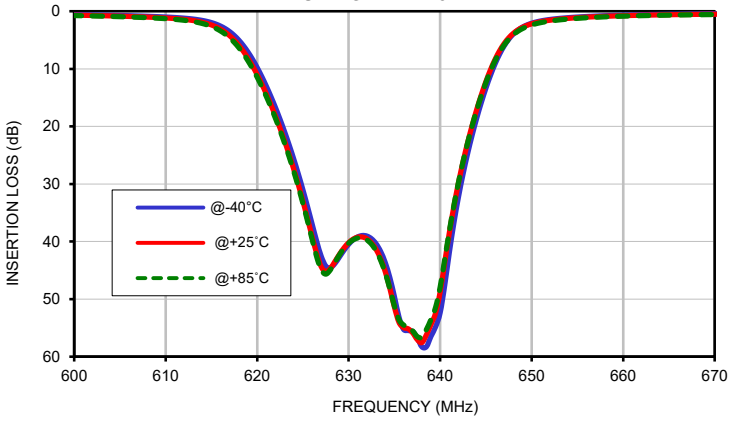
FREQ.	GROUP DELAY-2		
(MHz)	(ns)		
	@-40°C	@+25°C	@+85°C
655	21.50	20.59	20.52
656	19.07	18.36	18.31
657	17.13	16.55	16.51
658	15.54	15.07	15.04
660	13.10	12.77	12.75
662	11.32	11.06	11.05
668	8.01	7.89	7.88
670	7.31	7.20	7.20
680	5.17	5.12	5.12
690	4.15	4.12	4.12
700	3.58	3.56	3.57
701	3.54	3.53	3.53
702	3.50	3.48	3.49
704	3.43	3.41	3.42
705	3.39	3.38	3.38
706	3.36	3.35	3.35
707	3.33	3.32	3.32
708	3.30	3.29	3.29
709	3.27	3.26	3.26
710	3.25	3.23	3.24
711	3.22	3.21	3.21
712	3.20	3.19	3.19
713	3.17	3.16	3.17
714	3.15	3.14	3.14
715	3.13	3.12	3.12
716	3.11	3.10	3.10
717	3.09	3.08	3.08
718	3.07	3.06	3.07
719	3.05	3.04	3.05
720	3.04	3.03	3.03
722	3.01	3.00	3.00
724	2.98	2.97	2.97
726	2.95	2.94	2.95
728	2.93	2.92	2.92
730	2.91	2.90	2.90
740	2.82	2.82	2.82
750	2.77	2.77	2.77
760	2.75	2.75	2.75
770	2.75	2.74	2.75
780	2.76	2.76	2.76
800	2.83	2.84	2.84

Typical Performance Curves

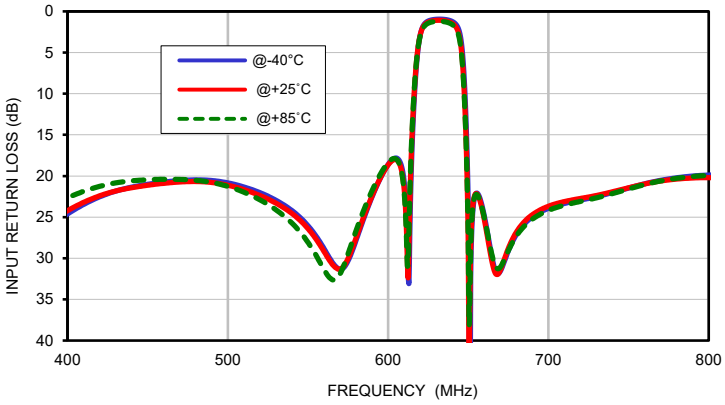
INSERTION LOSS vs. TEMPERATURE
INPUT POWER = 0 dBm



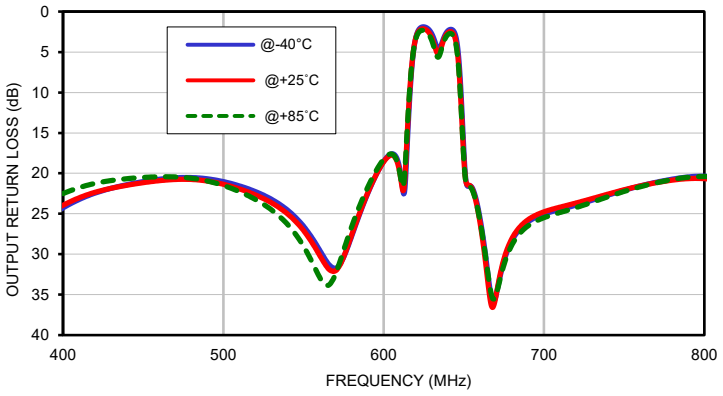
INSERTION LOSS vs. TEMPERATURE (Stop Band)
INPUT POWER = 0 dBm



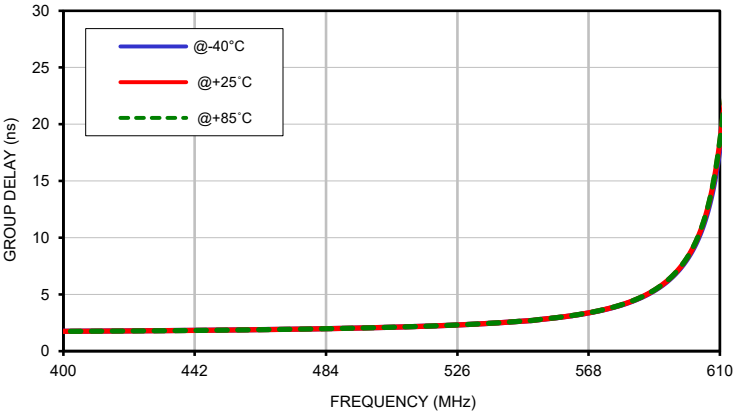
INPUT RETURN LOSS vs. TEMPERATURE
INPUT POWER = 0 dBm



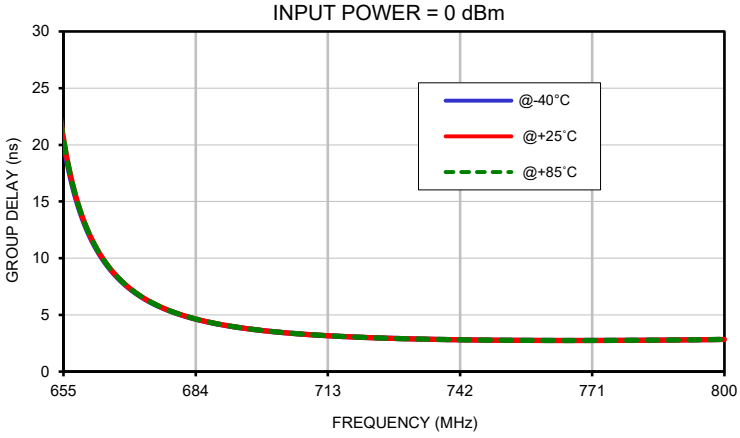
OUTPUT RETURN LOSS vs. TEMPERATURE
INPUT POWER = 0 dBm



GROUP DELAY-1 vs. TEMPERATURE
INPUT POWER = 0 dBm



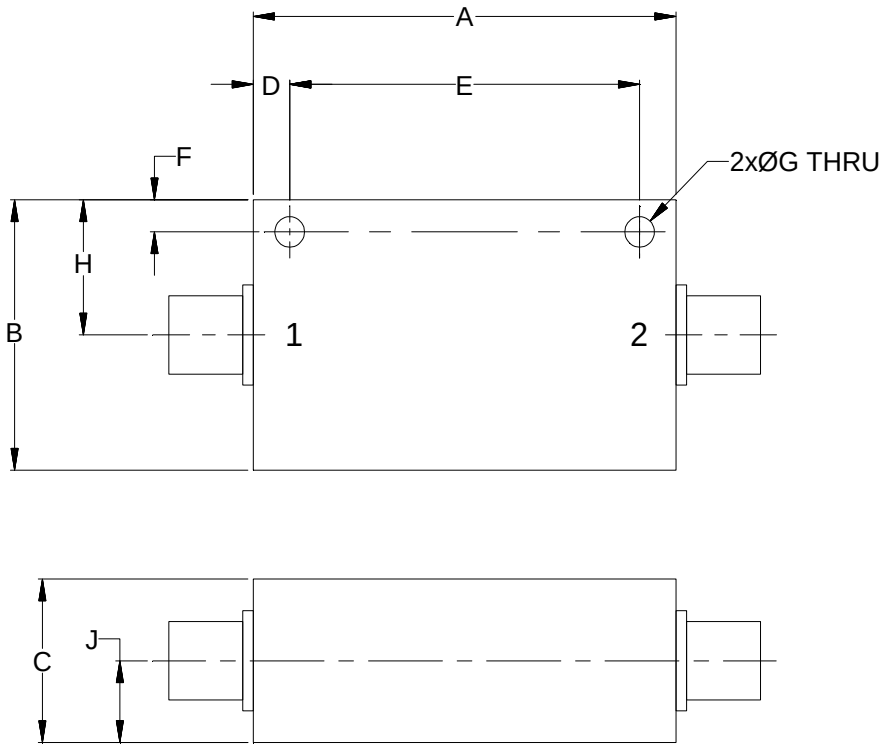
GROUP DELAY-2 vs. TEMPERATURE
INPUT POWER = 0 dBm



Case Style FM

Outline Dimensions

FM587-1



CASE #.	A	B	C	D	E	F	G	H	J	WT, GRAM
FM587-1	2.00 (50.80)	1.24 (31.50)	.75 (19.05)	.17 (4.32)	1.656 (42.06)	.15 (3.81)	.140 (3.56)	.62 (15.75)	.38 (9.65)	57

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

Notes:

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

Mini-Circuits®
ISO 9001 ISO 14001 CERTIFIED
ALL NEW minicircuits.com
P.O. Box 350166, Brooklyn, New York 11235-0003 (718) 934-4500 Fax (718) 332-4661 For detailed performance specs & shopping online see Mini-Circuits web site
The Design Engineers Search Engine Provides ACTUAL Data Instantly From MINI-CIRCUITS At: www.minicircuits.com
RF/IF MICROWAVE COMPONENTS

This document and its contents are the property of Mini-Circuits.

Mini-Circuits

Environmental Specifications ENV46

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, Condintion 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

This document and its contents are the property of Mini-Circuits.