



Q-Zorb RFSB absorbers are resonantly tuned to discrete frequencies between 500MHz and 100GHz. They are designed to reduce energy reflections off of a conductive ground plane by > 99% (-20dB) at normal angles of incidence. The performance is based upon the principle of phase cancellation by the incident energy reflection being out of phase with the ground plane reflection. For further discussion on resonant absorbers see "Introduction to Microwave Absorbers" on page 3.

The materials are thin, flexible and easy to cut and install. They are elastomer-based with a variety of choices available. For example, silicone is chosen for high-temperature applications, nitrile for fuel and oil resistance and natural rubber for commercial applications. Several magnetic fillers are available; carbonyl iron powder is standard, but other materials such as iron silicide (FeSi) are used for corrosion-resistant applications. The density of the materials is based on the volume percentage of magnetic filler. Table 1 gives the relationship between resonant frequency, weight and thickness.



RFSB absorbers require a conductive backing to achieve the reflectivity results shown. For applications where a conductive backing is not available, R&F can supply a ground plane bonded to the sheet. Pressure-sensitive adhesives can also be provided for ease of installation.

TABLE 1: RFSB WEIGHT AND THICKNESS VS. FREQUENCY

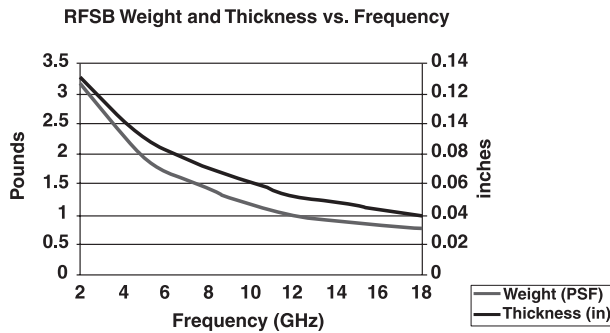


FIGURE 1.

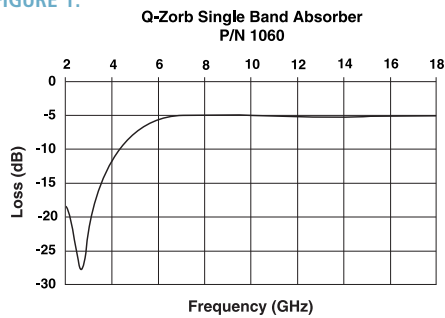


FIGURE 2.

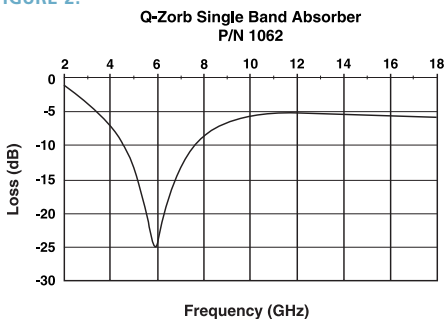


FIGURE 3.

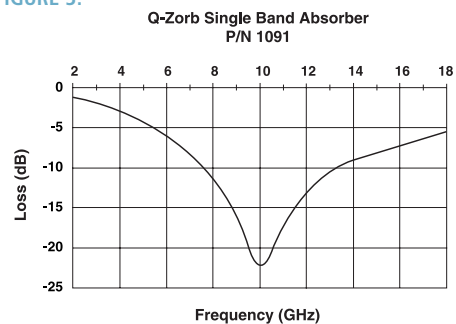
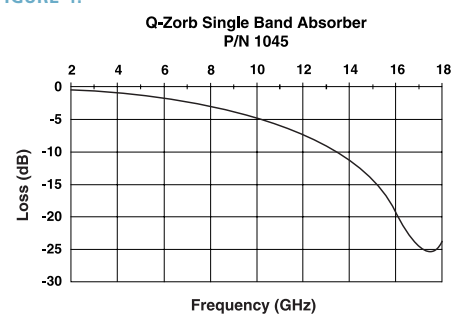


FIGURE 4.



All dimensions shown are in inches (millimeters) unless otherwise specified.

LT_KA_2004_02_RF_E_7_5M ©2004 Laird Technologies



ORDERING INFORMATION

Select the desired frequency of operation (listed in ascending order) from Table 2. This selection will govern dB loss and thickness. Then choose the material type and other options including flame retardant (FR), pressure-sensitive adhesive (PSA), ground plane (GP), or iron silicide (FeSi) and select a part number.

- Material Types Available:**
- S – Silicone
 - N – Nitrile
 - R – Natural Rubber
 - U – Urethane
 - V – Viton®
 - W – Neoprene
 - H – Hypalon®

TABLE 2: RFSB – SINGLE BAND ABSORBER PART NUMBERS

Note: Other materials or combinations of attributes are available; please contact sales for assistance.

1000 – 1999 RFSB – SINGLE BAND ABSORBERS

NUMBER	MATERIAL TYPE	FREQ (GHZ)	DB LOSS	THICKNESS IN (MM)	OTHER
1020	R	0.445	-15.0	0.500 (12.7)	
1121	R	0.500	-15.0	0.500 (12.7)	
1036	R	0.900	-15.0	0.280 (7.1)	
1122	R	1.000	-15.0	0.250 (6.4)	
1019	N	1.400	-15.0	0.165 (4.2)	
1065	R	1.500	-15.0	0.150 (3.8)	PSA
1048	R	1.500	-15.0	0.150 (3.8)	
1039	N	1.575	-20.0	0.148 (3.8)	PSA
1049	R	1.880	-20.0	0.140 (3.6)	PSA
1031	N	1.960	-17.0	0.132 (3.4)	PSA
1011	N	1.960	-17.0	0.132 (3.4)	GP-PSA
1007	N	1.960	-17.0	0.132 (3.4)	
1027	S	2.100	-20.0	0.105 (2.7)	
1125	N	2.250	-20.0	0.115 (2.9)	PSA
1124	N	2.250	-20.0	0.115 (2.9)	
1060	R	2.400	-20.0	0.100 (2.5)	PSA
1059	R	2.400	-20.0	0.100 (2.5)	
1084	N	3.000	-20.0	0.115 (2.9)	GP
1083	N	3.000	-20.0	0.115 (2.9)	
1044	N	3.200	-20.0	0.105 (2.7)	PSA
1043	N	3.200	-20.0	0.105 (2.7)	
1042	S	3.500	-20.0	0.095 (2.4)	PSA
1040	S	3.500	-20.0	0.095 (2.4)	
1134	N	3.900	-20.0	0.115 (2.9)	FESI
1101	S	4.000	-20.0	0.095 (2.4)	
1086	N	4.000	-20.0	0.110 (2.8)	GP
1085	N	4.000	-20.0	0.110 (2.8)	
1071	R	4.500	-20.0	0.095 (2.4)	PSA
1070	R	4.500	-20.0	0.095 (2.4)	
1104	S	5.000	-20.0	0.095 (2.4)	
1126	N	5.200	-20.0	0.095 (2.4)	PSA
1073	N	5.200	-20.0	0.095 (2.4)	
1123	U	5.500	-18.0	0.075 (1.9)	
1016	R	5.600	-20.0	0.075 (1.9)	PSA
1062	S	6.000	-20.0	0.082 (2.1)	PSA
1061	S	6.000	-20.0	0.082 (2.1)	
1088	N	6.000	-20.0	0.085 (2.2)	GP
1087	N	6.000	-20.0	0.085 (2.2)	
1008	R	6.175	-20.0	0.080 (2.0)	PSA
1105	S	6.500	-20.0	0.075 (1.9)	
1021	R	6.500	-20.0	0.075 (1.9)	PSA
1056	N	6.500	-20.0	0.085 (2.2)	PSA
1106	S	7.500	-20.0	0.075 (1.9)	
1033	N	7.500	-20.0	0.075 (1.9)	PSA
1032	N	7.500	-20.0	0.075 (1.9)	
1080	S	7.750	-20.0	0.066 (1.7)	PSA
1079	S	7.750	-20.0	0.066 (1.7)	
1107	S	8.000	-20.0	0.070 (1.8)	

NUMBER	MATERIAL TYPE	FREQ (GHZ)	DB LOSS	THICKNESS IN (MM)	OTHER
1057	N	8.000	-20.0	0.070 (1.8)	PSA
1090	N	8.000	-20.0	0.070 (1.8)	GP
1089	N	8.000	-20.0	0.070 (1.8)	
1137	N	8.150	-20.0	0.090 (2.3)	
1130	S	8.400	-20.0	0.070 (1.8)	
1034	N	8.400	-20.0	0.065 (1.7)	PSA
1005	N	8.400	-20.0	0.065 (1.7)	
1035	W	9.100	-20.0	0.075 (1.9)	
1017	N	9.375	-20.0	0.063 (1.6)	PSA
1118	N	9.400	-20.0	0.063 (1.6)	GP-PSA
1013	N	9.400	-20.0	0.063 (1.6)	
1074	H	9.410	-20.0	0.066 (1.7)	GP-PSA
1068	S	9.500	-20.0	0.060 (1.5)	
1078	N	9.500	-20.0	0.062 (1.6)	PSA
1077	N	9.500	-20.0	0.062 (1.6)	
1025	S	9.700	-20.0	0.060 (1.5)	
1081	U	10.000	-20.0	0.065 (1.7)	
1092	N	10.000	-20.0	0.060 (1.5)	GP
1091	N	10.000	-20.0	0.060 (1.5)	
1075	H	10.000	-20.0	0.062 (1.6)	PSA
1018	N	10.100	-20.0	0.060 (1.5)	PSA
1024	N	10.200	-20.0	0.065 (1.7)	
1063	N	10.525	-20.0	0.065 (1.7)	PSA
1109	S	11.000	-20.0	0.055 (1.4)	
1009	R	11.200	-20.0	0.056 (1.4)	PSA
1029	R	11.200	-20.0	0.056 (1.4)	GP-PSA
1023	R	11.200	-20.0	0.056 (1.4)	GP
1115	S	12.000	-20.0	0.052 (1.3)	
1006	R	12.000	-20.0	0.060 (1.5)	
1110	S	13.000	-20.0	0.050 (1.3)	
1094	N	13.000	-20.0	0.050 (1.3)	GP
1093	N	13.000	-20.0	0.050 (1.3)	
1066	V	14.000	-20.0	0.045 (1.1)	
1067	S	14.000	-20.0	0.045 (1.1)	
1022	N	14.000	-20.0	0.050 (1.3)	PSA
1010	R	14.375	-20.0	0.056 (1.4)	PSA
1096	N	15.000	-20.0	0.045 (1.1)	GP
1097	N	15.000	-20.0	0.045 (1.1)	
1045	N	16.700	-20.0	0.035 (0.9)	PSA
1111	S	18.000	-20.0	0.040 (1.0)	
1014	R	18.200	-15.0	0.040 (1.0)	PSA
1038	R	18.200	-15.0	0.040 (1.0)	
1112	S	22.000	-15.0	0.035 (0.9)	GP
1116	S	22.400	-15.0	0.035 (0.9)	
1015	R	22.400	-15.0	0.035 (0.9)	PSA
1132	N	35.000	-15.0	0.035 (0.9)	

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