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Ferrite EMI Cable Cores

Electro-Magnetic Interference Solutions



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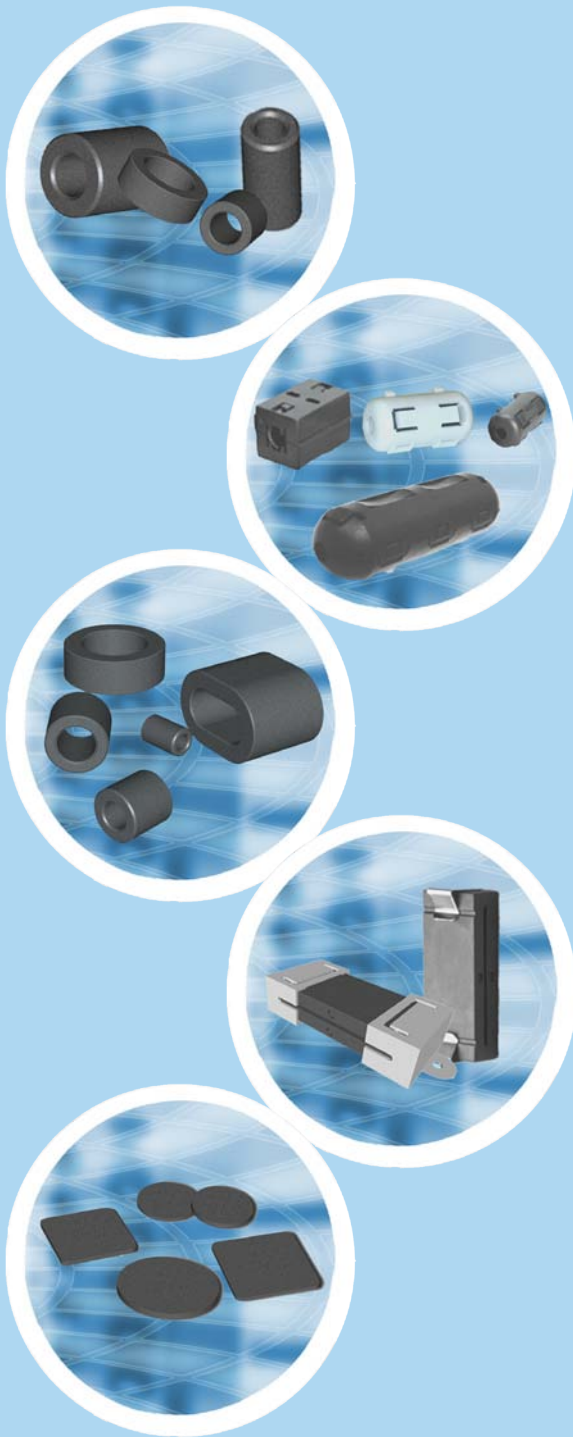
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Contents

| | |
|--|----|
| Ferrite Material Impedance Comparison | 4 |
| Design & Selection "Rules of Thumb" | 4 |
| High Frequency (HFB-) Cylindrical Cores | 5 |
| High Frequency (HFA-) Split, Snap-On Cores | 6 |
| Broadband (28B-) Cylindrical Cores | 7 |
| Broadband (28A-) Split, Snap-On Cores | 10 |
| Sorted Quick Reference Charts | |
| Broadband (28B- and 28A-) Cable Cores | 12 |
| Low Frequency (LFB-) Cylindrical Cores | 14 |
| Broadband (28R-) Ribbon & Flex Cable Cores | 15 |
| Broadband (28S-) Split Ribbon & Flex Cable Cores | 18 |
| Sorted Quick Reference Charts | |
| Broadband (28R- and 28S-) Ribbon Cores | 20 |
| Ferrite EMI Disks & Plates | 22 |

All parts listed in this catalog are lead free and RoHS compliant.

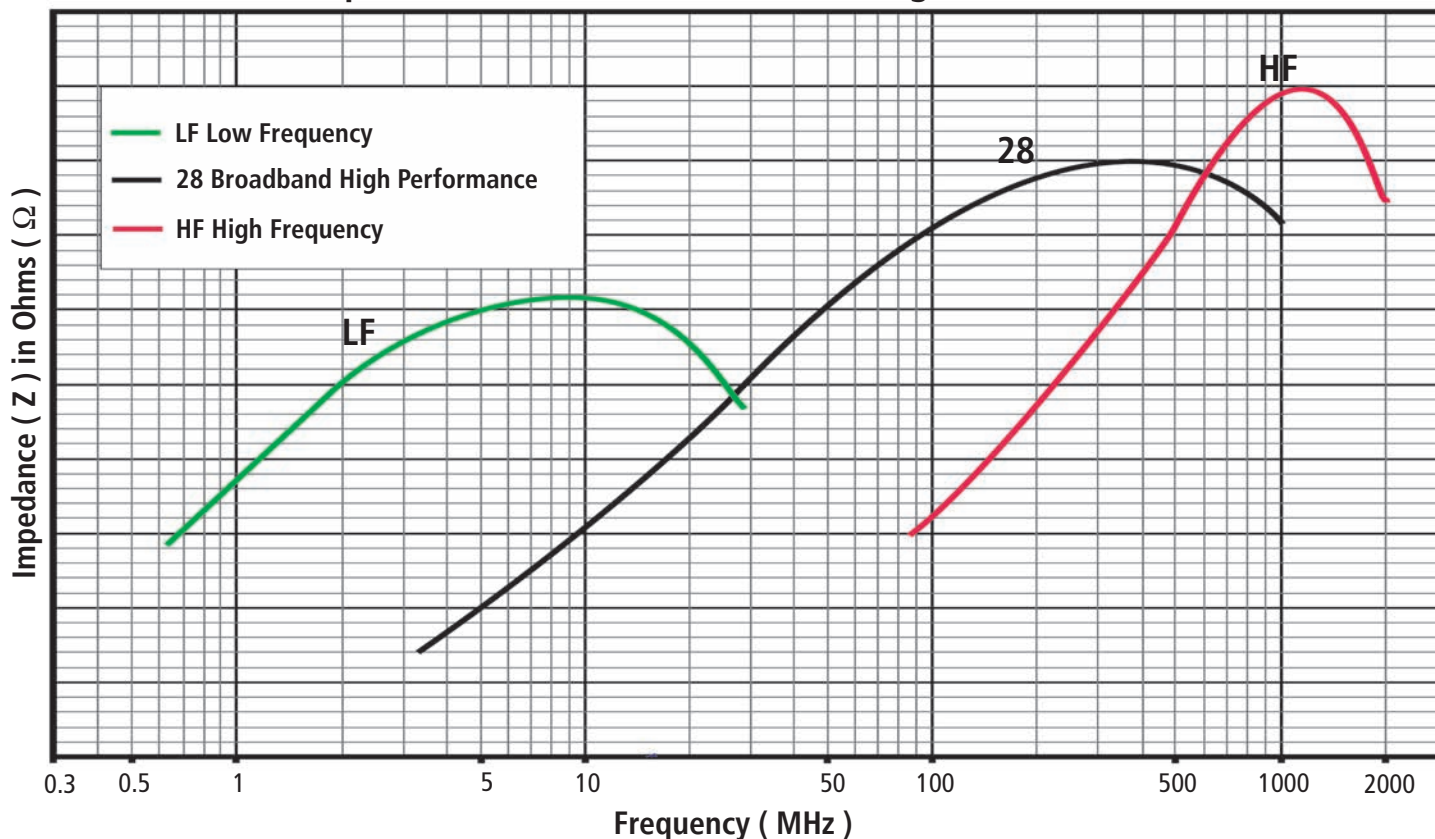


This catalog contains a limited selection of Laird Technologies, cable core products. Refer to www.lairdtech.com for other cable core products not included in this cable core catalog.

FERRITE MATERIAL COMPARISON

LF, 28, HF Material Impedance vs Frequency (300 KHz - 2 GHz)

Impedance Materials for Cable & Wiring Harness Cores



DESIGN & SELECTION "RULES OF THUMB"

- **Select the appropriate ferrite material** for the EMI frequency range to be attenuated (refer to cable core material impedance vs. frequency chart above).
- **Ferrite material composition affects core performance most.** High performance material is best. Cheap, low performance materials require the use of larger, heavier cores.
- **Shape (design) and mass of the ferrite core significantly affect impedance.**
- **Don't over size.** Use high performance ferrite material and select the smallest core that will do the job. High performance material allows the use of smaller, lighter and lower cost cores.
- **Select a ferrite core that fits** over the cable's outside dimensions. Core should slide easily over the cable during installation.
- **When possible, install a cable core over wires in a common-mode configuration** (out and back lines inside the same ferrite cable core). A differential cable pair inside the same core will make the ferrite core a common mode choke that is not susceptible to saturation from very high currents.
- **Install the ferrite core near the noise source**
- **Additional turns through a core will provide multiple amounts of peak impedance.**
Example: Two wire turns provide 4 times the impedance of one turn (pass through) the ferrite core. Also, with each added turn, the peak impedance shifts to a slightly lower frequency.
- **Two piece split cores are available.** One-piece cylindrical or flat ribbon ferrite core shapes are usually preferable but, split cores can be used in applications where cores cannot slide over cable ends and connectors. Some split cores are available with snap-on plastic cases or metal clips.
- **Side by side impedance testing of ferrite cores is the best way to compare performance of different cores.**
Ferrite core impedance measurement equipment and test methods are not standardized in the industry. Every ferrite company has their own test methods. Catalog (web site) impedance data cannot be accurately compared.

Optimized, high performance, low cost custom part designs are available.

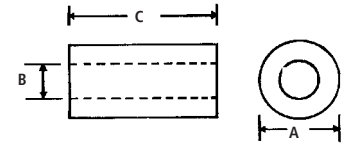


High Frequency Ferrite Cylindrical EMI Cores

300 MHz to 2 GHz Optimized

Cylindrical Solid Ferrite Cores for Round Cables & Wiring Harnesses

| Part Number | DIMENSIONS mm (inches) | | | Net Impedance (Z) in Ohms (Ω) | | | |
|---------------|------------------------------|------------------|------------------|-----------------------------------|-----------|-----------|---------|
| | A | B | C | @ 300 MHz | @ 500 MHz | @ 800 MHz | @ 1 GHz |
| HFB075024-000 | 7.52 (0.296) | 2.39 (0.094) | 10.00 (0.394) | 124 | 136 | 138 | 138 |
| HFB095051-100 | 9.52 (0.375) | 5.08 (0.200) | 10.00 (0.394) | 64 | 74 | 89 | 85 |
| HFB095051-200 | 9.52 (0.375) | 5.08 (0.200) | 19.00 (0.748) | 120 | 135 | 151 | 147 |
| HFB123049-000 | 12.32 (0.485) | 4.88 (0.192) | 5.00 (0.197) | 50 | 56 | 63 | 61 |
| HFB123049-100 | 12.32 (0.485) | 4.88 (0.192) | 10.00 (0.394) | 97 | 110 | 120 | 115 |
| HFB123049-300 | 12.32 (0.485) | 4.88 (0.192) | 25.40 (1.000) | 258 | 287 | 300 | 246 |
| HFB143064-000 | 14.27 (0.562) | 6.35 (0.250) | 5.00 (0.197) | 43 | 50 | 58 | 60 |
| HFB143064-100 | 14.27 (0.562) | 6.35 (0.250) | 10.00 (0.394) | 85 | 100 | 113 | 115 |
| HFB143064-300 | 14.27 (0.562) | 6.35 (0.250) | 28.58 (1.125) | 270 | 315 | 270 | 200 |
| HFB150070-200 | 14.99 (0.590) | 6.99 (0.275) | 28.58 (1.125) | 242 | 287 | 270 | 204 |
| HFB152034-000 | 15.24 (0.600) | 3.38 (0.133) | 10.00 (0.394) | 165 | 190 | 189 | 185 |
| HFB157070-000 | 15.65 (0.616) | 6.99 (0.275) | 20.00 (0.787) | 170 | 200 | 220 | 205 |
| HFB159079-100 | 15.88 (0.625) | 7.87 (0.310) | 28.58 (1.125) | 235 | 290 | 302 | 260 |
| HFB160093-200 | 16.00 (0.630) | 9.25 (0.364) | 19.00 (0.748) | 120 | 145 | 155 | 170 |
| HFB160093-300 | 16.00 (0.630) | 9.25 (0.364) | 27.99 (1.102) | 170 | 198 | 232 | 220 |
| HFB170070-000 | 16.99 (0.669) | 7.01 (0.276) | 10.00 (0.394) | 97 | 115 | 127 | 140 |
| HFB170070-100 | 16.99 (0.669) | 7.01 (0.276) | 20.00 (0.787) | 185 | 215 | 239 | 220 |
| HFB187102-100 | 18.67 (0.735) | 10.16 (0.400) | 30.00 (1.181) | 205 | 250 | 270 | 210 |
| HFB259128-100 | 25.91 (1.020) | 12.83 (0.505) | 28.58 (1.125) | 175 | 210 | 254 | 250 |



All impedance values for high frequency cores are NET; NET impedance is impedance of the ferrite core only. All impedance contribution from the test wire and fixtures has been removed.

This catalog lists a limited sample of available parts. Custom parts are also available.



Split, Snap-On Ferrite Cores in Plastic Cases 300 MHz to 2 GHz Optimized

For retrofit and post-assembly operations a selection of high frequency EMI “split” cores are offered. Similar in performance to one piece cylindrical core designs, these split ferrite cores provide excellent common and differential mode high frequency EMI suppression on round cable and wire assemblies. Black plastic snap-on cases provide secure closure of the split cores onto the cable or wire bundle.

PART NUMBERING SYSTEM EXAMPLE

| | | | | | |
|---------------|--------------|---------------------|--|-----------------------------|-------------------------|
| HF | A | 100049 | -0 | A | 2 |
| Material Type | Product Code | Part Size Code (mm) | Selected Dimension Code (Usually Length) | Additional Part Description | Plastic Case Color Code |

All impedance values for high frequency cores are NET; NET impedance is impedance of the ferrite core only. All impedance contribution from the test wire and fixtures has been removed.

| Part Number | Fig # | PLASTIC CASE DIMENSIONS mm (inches) | | | | Maximum Cable Diameter mm (inches) | Net Impedance (Z) in Ohms (Ω) | | | | Laird Technologies' Solid Cylindrical Core Similar Parts (for reference) |
|---------------|-------|---|------------------|------------------|------------------|--|-----------------------------------|-----------|-----------|---------|--|
| | | A | B | C | D | | @ 300 MHz | @ 500 MHz | @ 800 MHz | @ 1 GHz | |
| HFA100049-0A2 | 1 | 13.72 (0.540) | 5.44 (0.214) | 30.56 (1.203) | 13.72 (0.540) | 4.88 (0.192) | 133 | 152 | 168 | 162 | HFB095051-200 |
| HFA150066-0A2 | 2 | 18.15 (0.715) | 7.05 (0.278) | 32.50 (1.280) | 18.90 (0.744) | 6.60 (0.260) | 274 | 350 | 340 | 256 | HFB143064-300 |
| HFA150068-0A2 | 1 | 21.00 (0.827) | 6.80 (0.268) | 41.70 (1.642) | 21.00 (0.827) | 6.76 (0.266) | 275 | 340 | 281 | 200 | HFB150070-200 |
| HFA163090-0A2 | 1 | 19.10 (0.752) | 9.09 (0.358) | 40.36 (1.589) | 20.80 (0.819) | 9.01 (0.355) | 210 | 260 | 262 | 200 | HFB160093-300 |
| HFA187102-0A2 | 2 | 22.88 (0.877) | 10.00 (0.394) | 32.77 (1.290) | 21.84 (0.860) | 10.16 (0.400) | 220 | 290 | 281 | 210 | HFB187102-100 |
| HFA259131-0A2 | 2 | 29.00 (1.142) | 13.00 (0.512) | 32.50 (1.280) | 29.62 (1.166) | 13.06 (0.514) | 250 | 315 | 272 | 200 | HFB259128-100 |

- 0A2 part number suffix designates black plastic case. Additional colors may be available, please inquire with Laird Technologies' customer service.

Figure 1

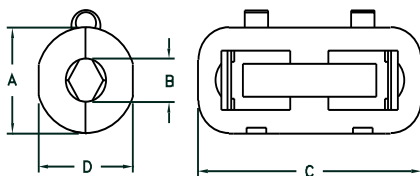
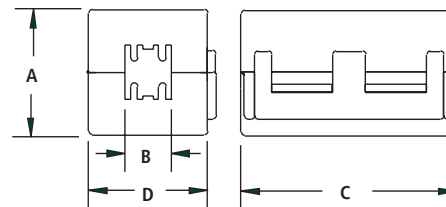
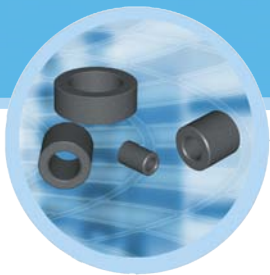


Figure 2



Please visit www.Lairdtech.com for the most up to date information. All dimensions & impedance values can be sorted and compared on www.Lairdtech.com. Custom parts are available.



Broadband EMI Ferrite Cylindrical Cores

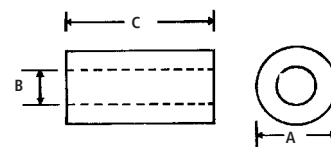
For Round Cables & Wiring Harnesses

PART NUMBERING SYSTEM EXAMPLE

| | | | | | |
|---------------|--------------|----------------|--|-----------------------------|--|
| 28 | B | 0250 | -1 | 0 | 0 |
| Material Type | Product Code | Part Size Code | Selected Dimension Code (Usually Length) | Additional Part Description | Additional Part Description or Coating |

Broadband (28) round cable parts are sorted by inside diameter on page 12 and sorted by impedance on page 13.

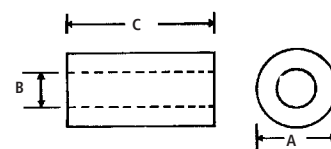
| Part Number | DIMENSIONS mm (inches) | | | Typical Impedance (Z) in Ohms (Ω) | | |
|-------------|------------------------------|-----------------|------------------|---------------------------------------|-----------|-----------|
| | A | B | C | @ 25 MHz | @ 100 MHz | @ 300 MHz |
| 28B0250-100 | 6.35 (0.250) | 3.18 (0.125) | 15.88 (0.625) | 90 | 182 | 300 |
| 28B0268-000 | 6.78 (0.267) | 3.99 (0.157) | 14.22 (0.560) | 65 | 138 | 260 |
| 28B0275-000 | 7.00 (0.276) | 3.80 (0.150) | 13.50 (0.531) | 69 | 146 | 268 |
| 28B0296-000 | 7.52 (0.296) | 2.39 (0.94) | 7.54 (0.297) | 75 | 160 | 270 |
| 28B0315-000 | 8.00 (0.315) | 3.17 (0.125) | 4.78 (0.188) | 43 | 100 | 220 |
| 28B0315-100 | 8.00 (0.315) | 3.17 (0.125) | 10.06 (0.396) | 76 | 158 | 281 |
| 28B0339-000 | 8.60 (0.339) | 3.80 (0.150) | 10.00 (0.394) | 68 | 143 | 264 |
| 28B0355-000 | 9.00 (0.354) | 4.75 (0.187) | 20.00 (0.787) | 110 | 205 | 360 |
| 28B0375-000 | 9.53 (0.375) | 5.08 (0.200) | 10.41 (0.410) | 57 | 125 | 245 |
| 28B0375-100 | 9.53 (0.375) | 5.08 (0.200) | 14.48 (0.570) | 74 | 154 | 282 |
| 28B0375-300 | 9.53 (0.375) | 5.08 (0.200) | 19.05 (0.750) | 100 | 194 | 310 |
| 28B0375-400 | 9.52 (0.375) | 5.08 (0.200) | 4.83 (0.190) | 33 | 81 | 200 |
| 28B0384-000 | 9.75 (0.384) | 3.80 (0.150) | 10.00 (0.394) | 82 | 159 | 286 |
| 28B0384-200 | 9.75 (0.384) | 3.80 (0.150) | 25.00 (0.984) | 182 | 322 | 473 |
| 28B0390-200 | 9.91 (0.390) | 6.35 (0.250) | 15.00 (0.590) | 57 | 128 | 248 |
| 28B0395-000 | 10.01 (0.394) | 5.97 (0.235) | 6.17 (0.243) | 31 | 83 | 199 |
| 28B0434-000 | 11.00 (0.433) | 5.10 (0.201) | 32.00 (1.260) | 200 | 349 | 481 |
| 28B0453-000 | 11.50 (0.453) | 4.90 (0.193) | 25.00 (0.984) | 148 | 262 | 378 |
| 28B0472-090 | 12.00 (0.472) | 3.60 (0.142) | 20.00 (0.787) | 158 | 272 | 390 |



Please refer to the separate Toroid Catalog from Laird Technologies for an extensive list of small ferrite inductor toroid core sizes and materials.

Broadband EMI Ferrite Cylindrical Cores

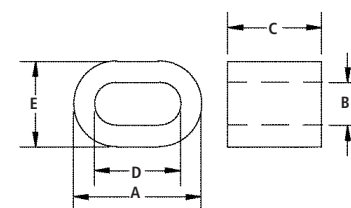
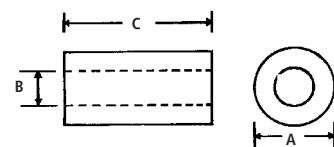
| Part Number | DIMENSIONS mm (inches) | | | Typical Impedance (Z) in Ohms (Ω) | | |
|-------------|------------------------------|-----------------|------------------|---------------------------------------|-----------|-----------|
| | A | B | C | @ 25 MHz | @ 100 MHz | @ 300 MHz |
| 28B0473-000 | 12.00 (0.472) | 3.55 (0.140) | 10.00 (0.394) | 101 | 195 | 320 |
| 28B0473-200 | 12.00 (0.472) | 3.55 (0.140) | 25.00 (0.984) | 240 | 424 | 558 |
| 28B0485-000 | 12.32 (0.485) | 4.88 (0.192) | 25.40 (1.000) | 170 | 320 | 450 |
| 28B0500-100 | 12.70 (0.500) | 7.92 (0.312) | 6.35 (0.250) | 33 | 83 | 200 |
| 28B0500-300 | 12.70 (0.500) | 7.92 (0.312) | 12.70 (0.500) | 54 | 118 | 230 |
| 28B0562-000 | 14.27 (0.562) | 6.35 (0.250) | 10.16 (0.400) | 69 | 145 | 270 |
| 28B0562-100 | 14.27 (0.562) | 6.35 (0.250) | 13.46 (0.530) | 89 | 184 | 303 |
| 28B0562-200 | 14.27 (0.562) | 6.35 (0.250) | 28.58 (1.125) | 177 | 317 | 470 |
| 28B0562-300 | 14.27 (0.562) | 6.35 (0.250) | 28.32 (1.115) | 150 | 270 | 420 |
| 28B0563-000 | 14.27 (0.562) | 7.26 (0.286) | 15.24 (0.600) | 85 | 173 | 295 |
| 28B0563-100 | 14.27 (0.562) | 7.26 (0.286) | 20.30 (0.800) | 109 | 217 | 333 |
| 28B0563-200 | 14.27 (0.562) | 7.26 (0.286) | 28.57 (1.125) | 149 | 287 | 406 |
| 28B0570-000 | 14.48 (0.570) | 8.51 (0.335) | 5.51 (0.217) | 32 | 82 | 200 |
| 28B0590-000 | 14.99 (0.590) | 6.99 (0.275) | 27.94 (1.100) | 170 | 300 | 450 |
| 28B0591-200 | 15.00 (0.591) | 5.90 (0.232) | 35.00 (1.378) | 250 | 450 | 580 |
| 28B0592-000 | 15.00 (0.591) | 4.50 (0.177) | 40.00 (1.575) | 361 | 653 | 627 |
| 28B0616-000 | 15.65 (0.616) | 6.99 (0.275) | 28.58 (1.125) | 170 | 310 | 450 |
| 28B0625-000 | 15.88 (0.625) | 7.87 (0.310) | 14.27 (0.563) | 79 | 163 | 273 |
| 28B0625-100 | 15.88 (0.625) | 7.87 (0.310) | 28.58 (1.125) | 150 | 280 | 400 |
| 28B0631-000 | 16.00 (0.630) | 9.25 (0.364) | 11.99 (0.472) | 60 | 130 | 250 |
| 28B0631-100 | 16.00 (0.630) | 9.25 (0.364) | 27.99 (1.102) | 124 | 243 | 370 |
| 28B0672-000 | 17.07 (0.672) | 8.76 (0.345) | 25.40 (1.000) | 130 | 245 | 360 |
| 28B0686-000 | 17.42 (0.686) | 9.52 (0.375) | 6.35 (0.250) | 39 | 91 | 214 |
| 28B0686-100 | 17.42 (0.686) | 9.52 (0.375) | 12.70 (0.500) | 66 | 139 | 265 |
| 28B0686-200 | 17.42 (0.686) | 9.53 (0.375) | 28.58 (1.125) | 124 | 242 | 390 |



Additional wire turns multiply impedance

Broadband EMI Ferrite Cylindrical Cores

| Part Number | DIMENSIONS mm (inches) | | | Typical Impedance (Z) in Ohms (Ω) | | |
|--------------|------------------------------|------------------|------------------|---------------------------------------|-----------|-----------|
| | A | B | C | @ 25 MHz | @ 100 MHz | @ 300 MHz |
| 28B0734-000 | 18.67 (0.735) | 11.18 (0.440) | 28.58 (1.125) | 116 | 229 | 370 |
| 28B0735-000 | 18.67 (0.735) | 10.16 (0.400) | 28.58 (1.125) | 135 | 250 | 400 |
| 28B0735-300 | 18.67 (0.735) | 10.16 (0.400) | 14.27 (0.562) | 73 | 150 | 270 |
| 28B0773-050* | 19.64 (0.773) | 11.64 (0.458) | 12.70 (0.500) | 69 | 141 | 273 |
| 28B0825-000 | 20.95 (0.825) | 13.21 (0.520) | 6.35 (0.250) | 31 | 79 | 204 |
| 28B0870-000 | 22.10 (0.870) | 13.72 (0.540) | 6.35 (0.250) | 34 | 85 | 205 |
| 28B0870-100 | 22.10 (0.870) | 13.72 (0.540) | 12.70 (0.500) | 56 | 122 | 236 |
| 28B0999-000 | 25.40 (1.000) | 15.49 (0.610) | 12.70 (0.500) | 56 | 122 | 247 |
| 28B1000-000 | 25.40 (1.000) | 12.70 (0.500) | 12.70 (0.500) | 73 | 151 | 278 |
| 28B1020-100 | 25.91 (1.020) | 12.83 (0.505) | 28.58 (1.125) | 147 | 276 | 412 |
| 28B1122-100 | 28.50 (1.122) | 13.77 (0.542) | 28.58 (1.125) | 160 | 307 | 440 |
| 28B1122-300 | 28.50 (1.122) | 13.77 (0.542) | 20.00 (0.787) | 115 | 210 | 350 |
| 28B1142-000 | 29.01 (1.142) | 19.00 (0.748) | 7.49 (0.295) | 34 | 85 | 200 |
| 28B1142-100 | 29.01 (1.142) | 19.00 (0.748) | 13.84 (0.545) | 54 | 114 | 235 |
| 28B1225-000 | 31.12 (1.225) | 19.05 (0.750) | 15.93 (0.627) | 68 | 140 | 270 |
| 28B1225-100 | 31.12 (1.225) | 19.05 (0.750) | 7.92 (0.312) | 39 | 93 | 210 |
| 28B1225-300 | 31.12 (1.225) | 19.05 (0.750) | 10.00 (0.394) | 46 | 110 | 240 |
| 28B1250-000 | 31.75 (1.250) | 19.05 (0.750) | 22.22 (0.875) | 92 | 186 | 292 |
| 28B1417-200 | 36.00 (1.417) | 23.00 (0.905) | 12.70 (0.500) | 52 | 115 | 230 |
| 28B1531-000* | 38.86 (1.530) | 12.95 (0.510) | 28.58 (1.125) | 109 | 210 | 347 |
| 28B1540-000 | 39.12 (1.540) | 16.76 (0.660) | 22.22 (0.875) | 130 | 254 | 405 |
| 28B2000-100 | 50.80 (2.000) | 25.40 (1.000) | 28.70 (1.130) | 157 | 305 | 442 |
| 28B2400-000 | 60.96 (2.400) | 35.56 (1.400) | 12.70 (0.500) | 60 | 135 | 285 |



| *Oval Core Part Number | DIMENSIONS mm (inches) | |
|---------------------------|------------------------------|------------------|
| | D | E |
| 28B0773-050 | 11.64 (0.458) | 5.10 (0.201) |
| 28B1531-000 | 26.16 (1.030) | 26.04 (1.025) |

Broadband (28) round cable parts are sorted by inside diameter on page 12 and sorted by impedance on page 13.

Custom Parts are also available

Broadband EMI Ferrite Split/Snap-On Cores In Plastic Cases



For Round Cables & Wiring Harnesses

For retrofit and post-assembly operations, Laird Technologies' offers a selection of "split" cores. Similar in performance to the one piece core designs, these split ferrite cores provide excellent common and differential mode EMI suppression on round cable and wire assemblies. Black or white plastic snap-on cases provide secure closure of the split cores onto the cable.

PART NUMBERING SYSTEM EXAMPLE

| | | | | | | |
|---------------|--------------|----------------|--|-----------------------------|--|--|
| 28 | A | 0350 | -0 | B | *0 (White Case) *2 (Black Case) | Broad Band High Performance Material is 28 |
| Material Type | Product Code | Part Size Code | Selected Dimension Code (Usually Length) | Additional Part Description | Plastic Case Color Code | High Frequency Material is HF |

| PART NUMBER | Figure # on page 11 | PLASTIC CASE DIMENSIONS mm (inches) | | | | Maximum Cable Diameter mm (inches) | Typical Impedance (Z) in Ohms (Ω) | | | Laird Technologies Solid Cylindrical Core Similar Parts (for reference) |
|-------------|---------------------|-------------------------------------|---------------|---------------|---------------|------------------------------------|-----------------------------------|-----------|-----------|---|
| | | A | B | C | D | | @ 25 MHz | @ 100 MHz | @ 300 MHz | |
| 28A0350-0B2 | 1 | 13.00 (0.511) | 3.50 (0.138) | 25.20 (0.992) | 11.50 (0.453) | 3.50 (0.138) | 100 | 240 | 400 | 28B0472-090 |
| 28A0392-0A* | 1 | 13.72 (0.540) | 5.44 (0.214) | 30.56 (12.03) | 12.72 (0.540) | 4.75 (0.187) | 75 | 170 | 320 | 28B0375-300 |
| 28A0434-0A2 | 4 | 14.71 (0.579) | 5.44 (0.214) | 42.88 (1.688) | 14.70 (0.579) | 5.05 (0.119) | 111 | 277 | 449 | 28B0434-000 |
| 28A0592-0A2 | 4 | 18.75 (0.738) | 5.04 (0.198) | 53.39 (2.102) | 18.75 (0.738) | 4.40 (0.137) | 261 | 572 | 688 | 28B0592-000 |
| 28A0593-0A2 | 4 | 18.75 (0.738) | 6.75 (0.266) | 52.91 (2.083) | 18.75 (0.738) | 6.50 (0.256) | 186 | 407 | 575 | 28B0591-200 |
| 28A0640-0A* | 1 | 19.90 (0.783) | 9.80 (0.346) | 41.40 (1.630) | 21.65 (0.819) | 8.95 (0.352) | 105 | 240 | 390 | 28B0631-100 |
| 28A0807-0A2 | 4 | 24.82 (0.977) | 10.00 (0.394) | 55.91 (2.201) | 24.82 (0.977) | 10.00 (0.394) | 160 | 348 | 514 | 28B0735-000 |
| 28A2024-0A* | 2 | 29.00 (1.142) | 13.00 (0.512) | 32.50 (1.280) | 29.62 (1.166) | 12.85 (0.506) | 130 | 280 | 440 | 28B1020-100 |
| 28A2025-0A* | 2 | 18.15 (0.715) | 7.05 (0.278) | 32.50 (1.280) | 18.90 (0.744) | 6.45 (0.254) | 130 | 320 | 510 | 28B0562-200 |
| 28A2026-0A2 | 1 | 21.00 (0.827) | 6.80 (0.268) | 41.70 (1.642) | 21.00 (0.827) | 6.45 (0.254) | 95 | 270 | 460 | 28B0562-200 |
| 28A2029-0A* | 2 | 22.28 (0.877) | 10.00 (0.394) | 32.77 (1.290) | 21.84 (0.860) | 9.95 (0.392) | 95 | 250 | 420 | 28B0734-000 |
| 28A2432-0A2 | 3 | 19.20 (0.756) | 8.20 (0.323) | 19.90 (0.783) | 23.10 (0.909) | 8.05 (0.317) | 62 | 160 | 300 | 28B0672-000 |
| 28A2736-0A2 | 1 | 19.70 (0.776) | 9.00 (0.354) | 35.10 (1.382) | 18.00 (0.709) | 8.90 (0.350) | 120 | 220 | 360 | 28B0631-100 |
| 28A3039-0A2 | 3 | 24.55 (0.967) | 10.20 (0.402) | 13.60 (0.535) | 28.50 (1.122) | 10.15 (0.400) | 55 | 130 | 250 | 28B0735-300 |
| 28A3851-0A2 | 1 | 30.00 (1.181) | 13.00 (0.512) | 33.70 (1.327) | 30.00 (1.181) | 12.85 (0.506) | 150 | 260 | 410 | 28B1020-100 |
| 28A4155-0A2 | 3 | 28.80 (1.134) | 13.60 (0.535) | 15.40 (0.606) | 33.20 (1.307) | 13.55 (0.533) | 50 | 120 | 230 | 28B0825-100 |
| 28A5131-0A2 | 5 | 56.64 (2.230) | 19.50 (0.768) | 45.00 (1.772) | 56.63 (2.230) | 25.40 (1.000) | 187 | 425 | 533 | 28B2000-100 |
| 28A5776-0A2 | 2 | 29.20 (1.150) | 19.30 (0.760) | 42.00 (1.654) | 29.40 (1.157) | 19.00 (0.748) | 115 | 210 | 360 | 28B1250-000 |

* - 0A0 = White Plastic Snap On Case

* - 0A2 = Black Plastic Snap On Case

Broadband (28) round cable parts are sorted by inside diameter on page 12 and sorted by impedance on page 13.

High Frequency Split, Snap-On, Ferrite Cores in Plastic Cases

| PART NUMBER | Figure # | PLASTIC CASE DIMENSIONS mm (inches) | | | | Maximum Cable Diameter mm (inches) | Typical Impedance (Z) in Ohms (Ω) | | | Laird Technologies Solid Cylindrical Core Similar Parts (for reference) |
|---------------|----------|---|------------------|------------------|------------------|--|-----------------------------------|-----------|---------|---|
| | | A | B | C | D | | @ 500 MHz | @ 800 MHz | @ 1 GHz | |
| HFA100049-0A2 | 1 | 13.72 (0.540) | 5.44 (0.214) | 30.56 (1.203) | 13.72 (0.540) | 4.88 (0.192) | 152 | 168 | 162 | HFB095051-200 |
| HFA150066-0A2 | 2 | 18.15 (0.715) | 7.05 (0.278) | 32.50 (1.280) | 18.90 (0.744) | 6.60 (0.260) | 350 | 350 | 256 | HFB143064-200 |
| HFA150068-0A2 | 1 | 21.00 (0.827) | 6.80 (0.268) | 41.70 (1.642) | 21.00 (0.827) | 6.76 (0.266) | 340 | 280 | 200 | HFB150070-200 |
| HFA163090-0A2 | 1 | 19.10 (0.752) | 9.09 (0.358) | 40.36 (1.589) | 20.80 (0.819) | 9.01 (0.355) | 260 | 260 | 200 | HFB160093-300 |
| HFA187102-0A2 | 2 | 22.28 (0.877) | 10.00 (0.394) | 32.77 (1.290) | 21.84 (0.860) | 10.16 (0.400) | 290 | 281 | 210 | HFB187102-100 |
| HFA259131-0A2 | 2 | 29.00 (1.142) | 13.00 (0.512) | 32.50 (1.280) | 29.62 (1.166) | 13.06 (0.514) | 315 | 274 | 200 | HFB259128-100 |

-0A2 = Black Plastic Snap On Case
 - Other parts may be available.
 Please contact Laird Technologies.

All impedance values for high frequency cores are NET; NET impedance is impedance of the ferrite core only. All impedance contribution from the test wire and fixtures has been removed.

Plastic Case Split / Snap-On Part Diagrams

Figure 1

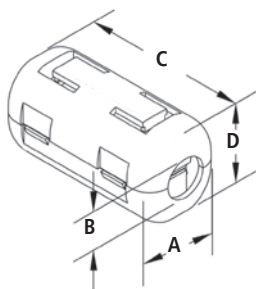


Figure 2

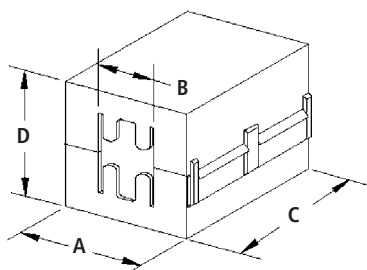


Figure 3

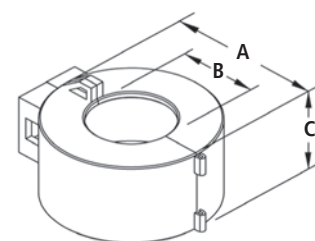


Figure 4

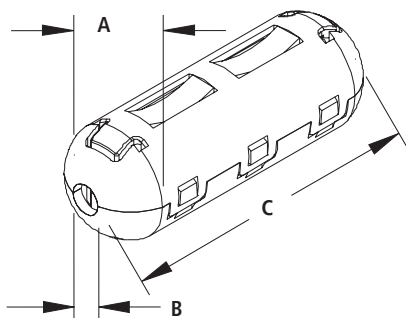
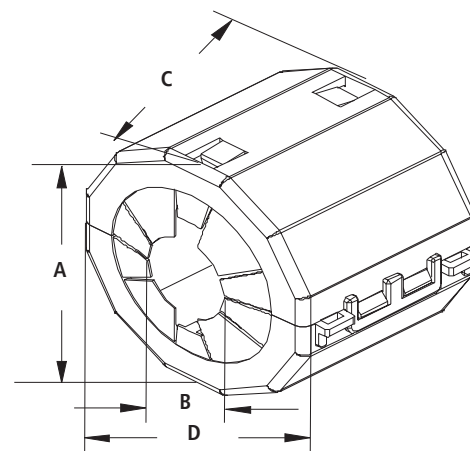


Figure 5



REFERENCE CHART - SORTED BY INSIDE DIAMETER (B)

Broadband 28 Material Parts Only

One Piece (28B) & Split / Snap-on (28A) Cores for Round Cables & Wires

| PART NUMBER Sorted by I.D. | DIMENSIONS in mm I.D. | | | |
|-------------------------------|--------------------------|------|-------|-------|
| | A | B | C | D |
| 28B0296-000 | 7.52 | 2.39 | 7.54 | - |
| 28B0315-000 | 8.00 | 3.17 | 4.78 | - |
| 28B0315-100 | 8.00 | 3.17 | 10.06 | - |
| 28B0250-100 | 6.35 | 3.18 | 15.88 | - |
| 28A0350-0B2 | 13.00 | 3.50 | 25.20 | 11.50 |
| 28B0473-000 | 12.00 | 3.55 | 10.00 | - |
| 28B0473-200 | 12.00 | 3.55 | 25.00 | - |
| 28B0472-090 | 12.00 | 3.60 | 20.00 | - |
| 28B0339-000 | 8.60 | 3.80 | 10.00 | - |
| 28B0384-000 | 9.75 | 3.80 | 10.00 | - |
| 28B0275-000 | 7.00 | 3.80 | 13.50 | - |
| 28B0384-200 | 9.75 | 3.80 | 25.00 | - |
| 28B0268-000 | 6.78 | 3.99 | 14.22 | - |
| 28B0592-000 | 15.00 | 4.50 | 40.00 | - |
| 28B0355-000 | 9.00 | 4.75 | 20.00 | - |
| 28B0485-000 | 12.32 | 4.88 | 25.40 | - |
| 28B9453-000 | 11.50 | 4.90 | 25.00 | - |
| 28A0592-0A2 | 18.75 | 5.04 | 53.39 | - |
| 28B0375-400 | 9.52 | 5.08 | 4.83 | - |
| 28B0375-000 | 9.53 | 5.08 | 10.41 | - |
| 28B0375-100 | 9.53 | 5.08 | 14.48 | - |
| 28B0375-300 | 9.53 | 5.08 | 19.05 | - |
| 28B0434-000 | 11.00 | 5.10 | 32.00 | - |
| 28A0434-0A2 | 14.70 | 5.25 | 43.00 | 14.70 |
| 28A0392-0A* | 13.72 | 5.44 | 30.56 | 12.30 |
| 28B0591-200 | 15.00 | 5.90 | 35.00 | - |
| 28B0395-000 | 10.01 | 5.97 | 6.17 | - |
| 28B0562-000 | 14.27 | 6.35 | 10.16 | - |
| 28B0562-100 | 14.27 | 6.35 | 13.46 | - |
| 28B0390-200 | 9.91 | 6.35 | 15.00 | - |
| 28B0562-300 | 14.27 | 6.35 | 28.32 | - |
| 28B0562-200 | 14.27 | 6.35 | 28.58 | - |
| 28A0593-0A2 | 18.75 | 6.75 | 52.90 | - |
| 28A2026-0A2 | 21.00 | 6.80 | 41.70 | 21.00 |
| 28B0590-000 | 14.99 | 6.99 | 27.94 | - |
| 28B0616-000 | 15.65 | 6.99 | 28.58 | - |
| 28A2025-0A* | 18.15 | 7.05 | 32.50 | 18.90 |
| 28B0563-000 | 14.27 | 7.26 | 15.24 | - |
| 28B0563-100 | 14.27 | 7.26 | 20.30 | - |
| 28B0563-200 | 14.27 | 7.26 | 28.57 | - |
| 28B0625-000 | 15.88 | 7.87 | 14.27 | - |
| 28B0625-100 | 15.88 | 7.87 | 28.58 | - |

| PART NUMBER Sorted by I.D. | DIMENSIONS in mm I.D. | | | |
|-------------------------------|--------------------------|-------|-------|-------|
| | A | B | C | D |
| 28B0500-100 | 12.70 | 7.92 | 6.35 | - |
| 28B0500-300 | 12.70 | 7.92 | 12.70 | - |
| 28A2432-0A2 | 19.20 | 8.20 | 19.90 | - |
| 28B0570-000 | 14.48 | 8.51 | 5.51 | - |
| 28B0672-000 | 17.07 | 8.76 | 25.40 | - |
| 28A0640-0A* | 19.90 | 8.80 | 41.40 | 21.65 |
| 28A2736-0A2 | 19.70 | 9.00 | 35.10 | 18.00 |
| 28B0631-000 | 16.00 | 9.25 | 11.99 | - |
| 28B0631-100 | 16.00 | 9.25 | 27.99 | - |
| 28B0686-000 | 17.42 | 9.52 | 6.35 | - |
| 28B0686-100 | 17.42 | 9.52 | 12.70 | - |
| 28B0686-200 | 17.42 | 9.53 | 28.58 | - |
| 28A2029-0A* | 22.28 | 10.00 | 32.77 | 21.84 |
| 28B0735-300 | 18.67 | 10.16 | 14.27 | - |
| 28B0735-000 | 18.67 | 10.16 | 28.58 | - |
| 28A3039-0A2 | 24.55 | 10.20 | 13.60 | 28.50 |
| 28B0734-000 | 18.67 | 11.18 | 28.58 | - |
| 28B0773-050 | 19.64 | 11.64 | 12.70 | 13.10 |
| 28B1000-000 | 25.40 | 12.70 | 12.70 | - |
| 28B1020-100 | 25.91 | 12.83 | 28.58 | - |
| 28B1531-000 | 38.86 | 12.95 | 28.58 | 26.16 |
| 28A2024-0A* | 29.00 | 13.00 | 32.50 | 29.62 |
| 28A3851-0A2 | 30.00 | 13.00 | 33.70 | 30.00 |
| 28B0825-000 | 20.95 | 13.21 | 6.35 | - |
| 28A4155-0A2 | 28.80 | 13.60 | 15.40 | 33.20 |
| 28B0870-000 | 22.10 | 13.72 | 6.35 | - |
| 28B0870-100 | 22.10 | 13.72 | 12.70 | - |
| 28B1122-300 | 28.50 | 13.77 | 20.00 | - |
| 28B1122-100 | 28.50 | 13.77 | 28.58 | - |
| 28B0999-000 | 25.40 | 15.49 | 12.70 | - |
| 28B1540-000 | 39.12 | 16.76 | 22.22 | - |
| 28B1142-000 | 29.01 | 19.00 | 7.49 | - |
| 28B1142-100 | 29.01 | 19.00 | 13.84 | - |
| 28B1225-100 | 31.12 | 19.05 | 7.92 | - |
| 28B1225-300 | 31.12 | 19.05 | 10.00 | - |
| 28B1225-000 | 31.12 | 19.05 | 15.93 | - |
| 28B1250-000 | 31.75 | 19.05 | 22.22 | - |
| 28A5776-0A2 | 29.20 | 19.30 | 42.00 | 29.40 |
| 28A5131-0A2 | 56.64 | 19.50 | 45.00 | 56.63 |
| 28B1417-200 | 36.00 | 23.00 | 12.70 | - |
| 28B2000-100 | 50.80 | 25.40 | 28.70 | - |
| 28B2400-000 | 60.96 | 35.56 | 12.70 | - |

REFERENCE CHART - SORTED BY IMPEDANCE @ 100 MHz

Broadband 28 Material Parts Only

One Piece (28B) & Split / Snap-on (28A) Cores for Round Cables & Wires

| PART NUMBER Sorted by Impedance | TYPICAL IMPEDANCE (Z) IN OHMS (Ω) | | |
|---------------------------------------|--|-----------|-----------|
| | @ 25 MHz | @ 100 MHz | @ 300 MHz |
| 28B0825-000 | 31 | 79 | 204 |
| 28B0375-400 | 33 | 81 | 200 |
| 28B0570-000 | 32 | 82 | 200 |
| 28B0395-000 | 31 | 83 | 199 |
| 28B0500-100 | 33 | 83 | 200 |
| 28B1142-000 | 34 | 85 | 200 |
| 28B0870-000 | 34 | 85 | 205 |
| 28B0686-000 | 39 | 91 | 214 |
| 28B1225-100 | 39 | 93 | 210 |
| 28B0315-000 | 43 | 100 | 220 |
| 28B1225-300 | 46 | 110 | 240 |
| 28B1142-100 | 54 | 114 | 235 |
| 28B1417-200 | 52 | 115 | 230 |
| 28B0500-300 | 54 | 118 | 230 |
| 28A4155-0A2 | 50 | 120 | 230 |
| 28B0870-100 | 56 | 122 | 236 |
| 28B0999-000 | 56 | 122 | 247 |
| 28B0375-000 | 57 | 125 | 245 |
| 28B0390-200 | 57 | 128 | 248 |
| 28A3039-0A2 | 55 | 130 | 250 |
| 28B0631-000 | 60 | 130 | 250 |
| 28B2400-000 | 60 | 135 | 285 |
| 28B0268-000 | 65 | 138 | 260 |
| 28B0686-100 | 66 | 139 | 265 |
| 28B1225-000 | 68 | 140 | 270 |
| 28B0773-050 | 69 | 141 | 273 |
| 28B0339-000 | 68 | 143 | 264 |
| 28B0562-000 | 69 | 145 | 270 |
| 28B0275-000 | 69 | 146 | 268 |
| 28B0735-300 | 73 | 150 | 270 |
| 28B1000-000 | 73 | 151 | 278 |
| 28B0375-100 | 74 | 154 | 282 |
| 28B0315-100 | 76 | 158 | 281 |
| 28B0384-000 | 82 | 159 | 286 |
| 28B0296-000 | 75 | 160 | 270 |
| 28A2432-0A2 | 62 | 160 | 300 |
| 28B0625-000 | 79 | 163 | 273 |
| 28A0392-0A* | 75 | 170 | 320 |
| 28B0563-000 | 85 | 173 | 295 |
| 28B0250-100 | 90 | 182 | 300 |
| 28B0562-100 | 89 | 184 | 303 |
| 28B1250-000 | 92 | 186 | 292 |

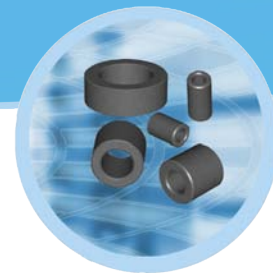
| PART NUMBER Sorted by Impedance | TYPICAL IMPEDANCE (Z) IN OHMS (Ω) | | |
|---------------------------------------|--|-----------|-----------|
| | @ 25 MHz | @ 100 MHz | @ 300 MHz |
| 28B0375-300 | 100 | 194 | 310 |
| 28B0473-000 | 101 | 195 | 320 |
| 28B0355-000 | 110 | 205 | 360 |
| 28B1531-000 | 109 | 210 | 347 |
| 28B1122-300 | 115 | 210 | 350 |
| 28A5776-0A2 | 115 | 210 | 360 |
| 28B0563-100 | 109 | 217 | 333 |
| 28A2736-0A2 | 120 | 220 | 360 |
| 28B0734-000 | 116 | 229 | 370 |
| 28A0640-0A* | 105 | 240 | 390 |
| 28A0350-0B2 | 100 | 240 | 400 |
| 28B0686-200 | 124 | 242 | 390 |
| 28B0631-100 | 124 | 243 | 370 |
| 28B0672-000 | 130 | 245 | 360 |
| 28B0735-000 | 135 | 250 | 400 |
| 28A2029-0A* | 95 | 250 | 420 |
| 28B1540-000 | 130 | 254 | 405 |
| 28A3851-0A2 | 150 | 260 | 410 |
| 28B0453-000 | 148 | 262 | 378 |
| 28B0562-300 | 150 | 270 | 420 |
| 28A2026-0A2 | 95 | 270 | 460 |
| 28B0472-090 | 158 | 272 | 390 |
| 28B1020-100 | 147 | 276 | 412 |
| 28A0434-0A2 | 111 | 277 | 449 |
| 28B0625-100 | 150 | 280 | 400 |
| 28A2024-0A* | 130 | 280 | 440 |
| 28B0563-200 | 149 | 287 | 406 |
| 28B0590-000 | 170 | 300 | 450 |
| 28B2000-100 | 157 | 305 | 442 |
| 28B1122-100 | 160 | 307 | 440 |
| 28B0616-000 | 170 | 310 | 450 |
| 28B0562-200 | 177 | 317 | 470 |
| 28B0485-000 | 170 | 320 | 450 |
| 28A2025-0A* | 130 | 320 | 510 |
| 28B0384-200 | 182 | 322 | 473 |
| 28B0434-000 | 200 | 349 | 481 |
| 28A0593-0A2 | 186 | 407 | 575 |
| 28B0473-200 | 240 | 424 | 558 |
| 28A5131-0A2 | 187 | 425 | 533 |
| 28B0591-200 | 250 | 450 | 580 |
| 28A0592-0A2 | 261 | 575 | 688 |
| 28B0592-000 | 361 | 653 | 627 |

Refer to pages 7, 8, 9 & 10 for more broadband data.

Custom Parts are also available

visit www.lairdtech.com for product additions and more product details

Low Frequency Ferrite EMI Cores



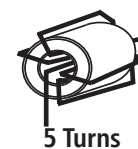
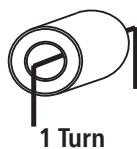
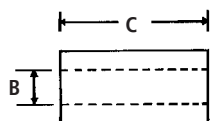
For Round Cables & Wiring Harnesses 300 KHz to 30 MHz Optimized

PART NUMBERING SYSTEM EXAMPLE

| | | | | | |
|---------------|--------------|---------------------|--|-----------------------------|---|
| LF | B | 090050 | -0 | 0 | 0 |
| Material Type | Product Code | Part Size Code (mm) | Selected Dimension Code (Usually Length) | Additional Part Description | Additional Part Description or Coating Code |

All impedance values for high frequency cores are NET; NET impedance is impedance of the ferrite core only. All impedance contribution from the test wire and fixtures has been removed.

| PART NUMBER | DIMENSIONS mm (inches) | | | Typical Impedance (Z) in Ohms (Ω) | | | | | | | | |
|---------------|------------------------------|------------------|------------------|---------------------------------------|-----|------|-----------------|-----|------|-----------------|-----|------|
| | | | | Ω @ 500 KHz | | | Ω @ 1 MHz | | | Ω @ 5 MHz | | |
| | A B C | | | # of Wire Turns | | | # of Wire Turns | | | # of Wire Turns | | |
| | | | | 1 | 2 | 5 | 1 | 2 | 5 | 1 | 2 | 5 |
| LFB090050-000 | 9.00 (0.354) | 5.00 (0.197) | 7.00 (0.275) | 12 | 58 | 370 | 21 | 90 | 558 | 36 | 140 | 867 |
| LFB095051-000 | 9.50 (0.374) | 5.10 (0.201) | 19.05 (0.750) | 36 | 150 | 846 | 63 | 240 | 1464 | 86 | 340 | 2514 |
| LFB127079-000 | 12.70 (0.500) | 7.92 (0.312) | 7.00 (0.276) | 9 | 45 | 301 | 16 | 70 | 436 | 25 | 102 | 593 |
| LFB143064-000 | 14.27 (0.562) | 6.35 (0.250) | 28.58 (1.125) | 70 | 290 | 1757 | 122 | 490 | 2842 | 120 | 480 | 2646 |
| LFB143064-100 | 14.27 (0.562) | 6.35 (0.250) | 13.46 (0.530) | 33 | 145 | 626 | 57 | 220 | 1169 | 53 | 215 | 1552 |
| LFB159079-000 | 15.88 (0.625) | 7.87 (0.310) | 28.58 (1.125) | 61 | 250 | 1605 | 105 | 410 | 2615 | 100 | 390 | 2305 |
| LFB174095-000 | 17.40 (0.685) | 9.50 (0.374) | 28.58 (1.125) | 52 | 200 | 1290 | 91 | 350 | 2184 | 85 | 340 | 2044 |
| LFB180100-000 | 18.10 (0.713) | 10.00 (0.394) | 10.00 (0.394) | 18 | 75 | 493 | 31 | 138 | 809 | 29 | 115 | 722 |
| LFB187102-000 | 18.67 (0.735) | 10.16 (0.400) | 28.58 (1.125) | 53 | 200 | 1182 | 91 | 350 | 1969 | 84 | 330 | 1863 |
| LFB220140-000 | 22.10 (0.870) | 14.00 (0.551) | 12.70 (0.500) | 18 | 72 | 469 | 30 | 120 | 818 | 28 | 110 | 699 |
| LFB250150-000 | 25.00 (0.984) | 15.00 (0.591) | 13.00 (0.512) | 16 | 70 | 562 | 34 | 136 | 850 | 26 | 80 | 624 |
| LFB259128-000 | 25.91 (1.020) | 12.83 (0.505) | 28.58 (1.125) | 61 | 220 | 1446 | 106 | 420 | 2647 | 62 | 240 | 1487 |
| LFB290190-000 | 28.98 (1.141) | 19.05 (0.750) | 15.21 (0.599) | 19 | 90 | 533 | 34 | 155 | 963 | 22 | 70 | 513 |
| LFB310190-000 | 31.00 (1.220) | 19.00 (0.748) | 13.00 (0.512) | 19 | 80 | 523 | 33 | 143 | 845 | 22 | 88 | 554 |
| LFB360230-300 | 36.00 (1.417) | 23.00 (0.905) | 15.00 (0.591) | 24 | 96 | 614 | 27 | 110 | 653 | 19 | 75 | 438 |



This catalog lists a limited sample of available parts. Custom parts are also available.



For Flat Ribbon & Flex Cables

PART NUMBERING SYSTEM EXAMPLE

| | | | | | |
|---------------|--------------|----------------|--|-----------------------------|-----------------------------|
| 28 | R | 0315 | -2 | 0 | 0 |
| Material Type | Product Code | Part Size Code | Selected Dimension Code (Usually Length) | Additional Part Description | Additional Part Description |

*Broadband (28) ribbon and flex cable cores are sorted by slot width on page 20 and sorted by impedance on page 21.

Custom Parts with double sided mounting tape are available

| Part Number | Figure # on Page 17 | DIMENSIONS mm (inches) | | | | | Typical Impedance (Z) in Ohms (Ω) | | |
|-------------|---------------------|------------------------------|------------------|------------------|-----------------|------------------|---------------------------------------|-----------|-----------|
| | | A | B | C* | D | E | @ 25 MHz | @ 100 MHz | @ 300 MHz |
| 28R0315-200 | 2 | 8.00 (0.315) | 6.00 (0.236) | 12.00 (0.472) | 2.70 (0.106) | 0.70 (0.028) | 48 | 102 | 250 |
| 28R0453-200 | 2 | 11.50 (0.453) | 8.00 (0.315) | 12.00 (0.472) | 3.00 (0.118) | 0.70 (0.028) | 43 | 104 | 260 |
| 28R0453-300 | 2 | 11.50 (0.453) | 8.00 (0.315) | 20.00 (0.787) | 3.00 (0.118) | 0.70 (0.028) | 65 | 153 | 335 |
| 28R0480-000 | 2 | 12.20 (0.480) | 8.00 (0.315) | 18.00 (0.709) | 5.50 (0.217) | 1.00 (0.039) | 100 | 190 | 320 |
| 28R0492-100 | 2 | 12.50 (0.492) | 8.30 (0.327) | 12.00 (0.472) | 5.50 (0.217) | 1.00 (0.039) | 68 | 150 | 290 |
| 28R0546-000 | 2 | 13.90 (0.547) | 9.40 (0.370) | 18.00 (0.709) | 5.30 (0.209) | 0.80 (0.0315) | 91 | 193 | 419 |
| 28R0592-010 | 2 | 15.01 (0.591) | 10.00 (0.394) | 22.86 (0.900) | 7.49 (0.295) | 1.50 (0.059) | 121 | 227 | 370 |
| 28R0610-000 | 3 | 15.50 (0.610) | 13.50 (0.531) | 10.00 (0.394) | 3.40 (0.134) | 1.40 (0.055) | 29 | 80 | 216 |
| 28R0614-100 | 2 | 15.60 (0.614) | 13.60 (0.535) | 12.00 (0.472) | 2.80 (0.110) | 0.70 (0.028) | 36 | 98 | 245 |
| 28R0669-000 | 2 | 17.00 (0.669) | 13.00 (0.512) | 12.00 (0.472) | 3.50 (0.138) | 0.75 (0.030) | 41 | 110 | 270 |
| 28R0756-000 | 3 | 19.20 (0.756) | 15.00 (0.591) | 10.00 (0.394) | 5.35 (0.211) | 1.15 (0.045) | 40 | 107 | 258 |
| 28R0756-200 | 3 | 19.20 (0.756) | 15.00 (0.591) | 16.00 (0.630) | 5.35 (0.211) | 1.15 (0.045) | 57 | 140 | 308 |
| 28R0825-000 | 3 | 20.95 (0.825) | 14.00 (0.551) | 19.05 (0.750) | 7.75 (0.305) | 0.80 (0.031) | 96 | 190 | 363 |
| 28R0880-000 | 2 | 22.35 (0.880) | 14.00 (0.551) | 19.05 (0.750) | 7.75 (0.305) | 1.50 (0.059) | 93 | 187 | 356 |
| 28R0898-100 | 2 | 22.80 (0.898) | 18.70 (0.736) | 12.00 (0.472) | 2.80 (0.110) | 0.70 (0.028) | 38 | 110 | 266 |
| 28R0898-200 | 2 | 22.80 (0.898) | 18.70 (0.736) | 16.00 (0.630) | 2.80 (0.110) | 0.70 (0.028) | 43 | 127 | 280 |
| 28R0945-000 | 3 | 24.00 (0.945) | 19.00 (0.748) | 10.00 (0.394) | 6.25 (0.246) | 1.25 (0.049) | 43 | 112 | 269 |
| 28R0984-000 | 3 | 25.00 (0.984) | 18.00 (0.709) | 24.00 (0.945) | 7.70 (0.303) | 0.90 (0.035) | 100 | 220 | 430 |
| 28R0984-200 | 3 | 25.00 (0.984) | 18.00 (0.709) | 16.00 (0.630) | 7.70 (0.303) | 0.90 (0.035) | 70 | 170 | 370 |

Broadband Ferrite EMI Cores For Ribbon & Flex Cables

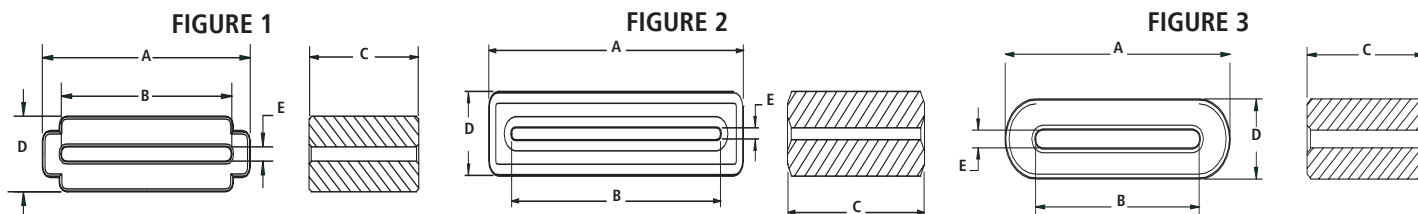
| Part Number | Figure # on Page 17 | DIMENSIONS mm (inches) | | | | | Typical Impedance (Z) in Ohms (Ω) | | |
|-------------|---------------------|------------------------------|-------------------|------------------|------------------|-----------------|---------------------------------------|-----------|-----------|
| | | A | B | C* | D | E | @ 25 MHz | @ 100 MHz | @ 300 MHz |
| 28R1022-000 | 3 | 26.00 (1.022) | 22.00 (0.866) | 9.00 (0.354) | 5.00 (0.197) | 1.20 (0.047) | 32 | 91 | 227 |
| 28R1024-000 | 2 | 26.00 (1.024) | 20.50 (0.807) | 10.00 (0.394) | 6.00 (0.236) | 0.80 (0.031) | 48 | 128 | 299 |
| 28R1025-000 | 3 | 26.00 (1.024) | 21.40 (0.8425) | 10.00 (0.394) | 5.00 (0.197) | 0.75 (0.030) | 37 | 97 | 242 |
| 28R1101-000 | 1 | 27.97 (1.101) | 22.94 (0.903) | 14.66 (0.577) | 7.75 (0.305) | 1.50 (0.059) | 55 | 140 | 300 |
| 28R1102-000 | 2 | 28.00 (1.102) | 23.00 (0.906) | 15.00 (0.591) | 5.80 (0.228) | 0.80 (0.031) | 61 | 154 | 340 |
| 28R1102-100 | 2 | 28.00 (1.102) | 23.00 (0.906) | 20.00 (0.787) | 5.80 (0.228) | 0.80 (0.031) | 75 | 192 | 380 |
| 28R1103-000 | 2 | 28.00 (1.102) | 23.00 (0.906) | 27.00 (1.063) | 6.10 (0.240) | 1.10 (0.043) | 95 | 230 | 480 |
| 28R1127-000 | 3 | 28.58 (1.125) | 23.50 (0.925) | 31.00 (1.220) | 7.70 (0.303) | 1.70 (0.067) | 100 | 220 | 430 |
| 28R1127-200 | 3 | 28.58 (1.125) | 23.50 (0.925) | 24.89 (0.980) | 7.70 (0.303) | 1.70 (0.067) | 85 | 191 | 410 |
| 28R1127-400 | 3 | 28.58 (1.125) | 23.50 (0.925) | 17.00 (0.669) | 7.70 (0.303) | 1.70 (0.067) | 60 | 150 | 330 |
| 28R1127-500 | 3 | 28.58 (1.125) | 23.50 (0.925) | 9.70 (0.382) | 7.70 (0.303) | 1.70 (0.067) | 40 | 110 | 265 |
| 28R1128-100 | 3 | 28.58 (1.125) | 23.50 (0.925) | 26.00 (1.024) | 5.88 (0.231) | 0.80 (0.031) | 79 | 204 | 399 |
| 28R1128-200 | 3 | 28.58 (1.125) | 24.00 (0.945) | 14.00 (0.551) | 5.38 (0.212) | 0.80 (0.031) | 52 | 145 | 312 |
| 28R1141-010 | 3 | 37.00 (1.457) | 27.00 (1.063) | 18.25 (0.715) | 8.00 (0.315) | 1.50 (0.059) | 67 | 168 | 380 |
| 28R1227-100 | 2 | 31.12 (1.225) | 24.77 (0.975) | 13.30 (0.525) | 8.26 (0.325) | 1.91 (0.075) | 52 | 128 | 300 |
| 28R1236-000 | 2 | 31.40 (1.236) | 23.00 (0.906) | 19.00 (0.748) | 7.75 (0.305) | 1.50 (0.059) | 78 | 162 | 370 |
| 28R1240-010 | 2 | 31.40 (1.236) | 23.00 (0.906) | 21.00 (0.827) | 7.75 (0.305) | 1.00 (0.039) | 84 | 211 | 440 |
| 28R1261-100 | 3 | 32.00 (1.260) | 25.10 (0.988) | 35.00 (1.378) | 7.75 (0.305) | 0.90 (0.035) | 140 | 350 | 700 |
| 28R1261-200 | 3 | 32.00 (1.260) | 25.10 (0.988) | 9.70 (0.382) | 7.75 (0.305) | 0.90 (0.035) | 50 | 135 | 310 |
| 28R1262-000 | 2 | 32.00 (1.260) | 26.00 (1.024) | 30.00 (1.181) | 7.00 (0.276) | 1.00 (0.039) | 110 | 260 | 520 |
| 28R1340-100 | 3 | 34.00 (1.340) | 28.00 (1.100) | 12.00 (0.472) | 7.00 (0.280) | 1.00 (0.039) | 50 | 139 | 315 |
| 28R1340-200 | 3 | 34.00 (1.340) | 28.00 (1.100) | 25.00 (0.984) | 7.00 (0.280) | 1.00 (0.039) | 86 | 220 | 449 |
| 28R1417-000 | 2 | 36.00 (1.417) | 26.00 (1.024) | 40.00 (1.575) | 11.00 (0.433) | 1.00 (0.039) | 187 | 393 | 734 |
| 28R1418-000 | 3 | 36.00 (1.417) | 33.00 (1.299) | 10.00 (0.394) | 4.00 (0.157) | 1.00 (0.039) | 34 | 104 | 245 |
| 28R1450-100 | 3 | 36.83 (1.450) | 29.58 (1.165) | 10.00 (0.394) | 7.75 (0.305) | 0.75 (0.030) | 48 | 130 | 290 |

Broadband Ferrite EMI Cores For Ribbon & Flex Cables

| Part Number | Figure # on Page 17 | DIMENSIONS mm (inches) | | | | | Typical Impedance (Z) in Ohms (Ω) | | |
|-------------|---------------------|------------------------------|------------------|------------------|------------------|-----------------|---------------------------------------|-----------|-----------|
| | | A | B | C* | D | E | @ 25 MHz | @ 100 MHz | @ 300 MHz |
| 28R1457-400 | 3 | 37.01 (1.457) | 33.00 (1.299) | 13.46 (0.530) | 4.50 (0.177) | 0.51 (0.020) | 44 | 140 | 310 |
| 28R1496-000 | 2 | 38.00 (1.496) | 30.00 (1.181) | 25.00 (0.984) | 9.25 (0.364) | 1.25 (0.049) | 91 | 239 | 479 |
| 28R1517-000 | 2 | 38.10 (1.500) | 26.67 (1.050) | 25.40 (1.000) | 12.07 (0.475) | 1.91 (0.075) | 110 | 230 | 520 |
| 28R1518-000 | 1 | 38.50 (1.516) | 26.80 (1.055) | 25.40 (1.000) | 12.09 (0.476) | 1.91 (0.075) | 105 | 235 | 478 |
| 28R1654-010 | 3 | 42.00 (1.654) | 37.50 (1.476) | 5.00 (0.197) | 5.00 (0.197) | 0.70 (0.028) | 27 | 84 | 200 |
| 28R1775-000 | 2 | 45.08 (1.775) | 34.42 (1.355) | 28.58 (1.125) | 12.45 (0.490) | 1.52 (0.060) | 115 | 260 | 530 |
| 28R1779-000 | 2 | 63.50 (2.500) | 52.07 (2.050) | 28.58 (1.125) | 12.70 (0.500) | 1.68 (0.066) | 114 | 298 | 588 |
| 28R1779-100 | 2 | 63.50 (2.500) | 52.07 (2.050) | 12.98 (0.511) | 12.70 (0.500) | 1.68 (0.066) | 65 | 170 | 375 |
| 28R1799-010 | 3 | 45.60 (1.795) | 37.00 (1.457) | 18.40 (0.724) | 7.90 (0.311) | 1.40 (0.055) | 57 | 172 | 388 |
| 28R1800-010 | 2 | 45.72 (1.800) | 35.05 (1.380) | 27.94 (1.100) | 12.70 (0.500) | 1.52 (0.060) | 110 | 260 | 555 |
| 28R1862-000 | 2 | 47.70 (1.878) | 39.00 (1.535) | 31.00 (1.220) | 15.00 (0.590) | 3.00 (0.118) | 116 | 261 | 561 |
| 28R1953-000 | 3 | 49.61 (1.953) | 44.00 (1.732) | 12.00 (0.472) | 7.62 (0.300) | 1.45 (0.057) | 45 | 127 | 300 |
| 28R2000-010 | 2 | 50.80 (2.000) | 40.60 (1.598) | 15.20 (0.598) | 12.20 (0.480) | 2.00 (0.079) | 63 | 170 | 380 |
| 28R2000-200 | 2 | 50.80 (2.000) | 40.60 (1.600) | 28.00 (1.102) | 12.20 (0.480) | 2.00 (0.079) | 103 | 252 | 545 |
| 28R2170-000 | 2 | 55.12 (2.170) | 43.69 (1.720) | 25.40 (1.000) | 12.70 (0.500) | 1.27 (0.050) | 110 | 280 | 550 |
| 28R2170-100 | 2 | 55.12 (2.170) | 43.69 (1.720) | 12.70 (0.500) | 12.70 (0.500) | 1.27 (0.050) | 62 | 170 | 370 |
| 28R3149-000 | 2 | 79.98 (3.149) | 68.58 (2.700) | 12.70 (0.500) | 11.99 (0.472) | 1.91 (0.075) | 51 | 135 | 318 |

Ferrite Core shape and size affect frequency response and impedance.

*Broadband (28) ribbon and flex cable cores are sorted by slot width on page 20 and sorted by impedance on page 21.



Please visit www.Lairdtech.com for the most up to date information. All dimensions & impedance values can be sorted and compared on www.lairdtech.com. Custom parts are available.

Broadband Split Ferrite Cores



For Ribbon & Flex Cables

Laird Technologies' offers a selection of broadband "split" ribbon and flex cores for retrofit and post-assembly operations. Similar in performance to one piece core designs, these split ferrite cores provide excellent differential and common mode EMI suppression on flat cable assemblies. Lightweight, inexpensive metal or plastic end clips and cases provide secure closure of the ferrite onto the flat cable.

PART NUMBERING SYSTEM EXAMPLE

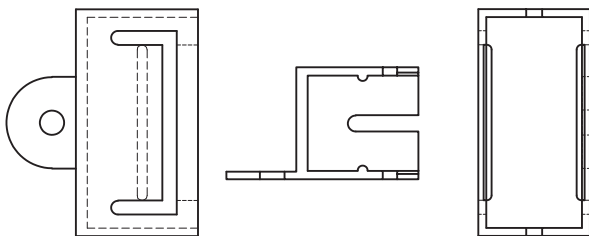
| | | | | | | |
|---------------|--------------|----------------|--|-------------------|-----------------------------|--|
| 28 | S | 0670 | -0 | 0* | 0 | *0 = No End Clip *M = Metal Clip *P = Plastic Clip *A = Hinged Case |
| Material Type | Product Code | Part Size Code | Selected Dimension Code (Usually Length) | Case or Clip Code | Additional Part Description | |

Custom Parts with double sided mounting tape are available.

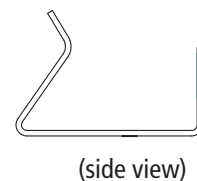
| Part Number | Figure # on Page 19 | *Available End Clip Types | DIMENSIONS mm (inches) | | | | | Typical Impedance (Z) in Ohms (Ω) | | |
|-------------|---------------------|---------------------------|------------------------------|------------------|------------------|------------------|-----------------|---------------------------------------|-----------|-----------|
| | | | A | B | C* | D | E | @ 25 MHz | @ 100 MHz | @ 300 MHz |
| 28S0670-000 | 2 | NA | 17.02 (0.670) | 12.50 (0.492) | 14.99 (0.590) | 3.40 (0.134) | 0.51 (0.020) | 60 | 150 | 310 |
| 28S2001-0*0 | 1 | M, P | 63.50 (2.500) | 52.07 (2.050) | 28.58 (1.125) | 6.35 (0.250) | 0.84 (0.033) | 100 | 280 | 590 |
| 28S2001-2A2 | 3 | Hinged Case | 67.08 (2.641) | 53.75 (2.116) | 27.53 (1.084) | 16.66 (0.656) | 1.91 (0.075) | 80 | 230 | 480 |
| 28S2011-0*0 | 1 | M, P | 76.20 (3.000) | 65.28 (2.570) | 28.58 (1.125) | 6.35 (0.250) | 0.84 (0.033) | 100 | 280 | 600 |
| 28S2012-0M0 | 1 | M | 88.90 (3.500) | 78.23 (3.080) | 28.58 (1.125) | 6.48 (0.255) | 0.84 (0.033) | 80 | 240 | 630 |
| 28S2022-0*0 | 1 | M, P | 45.09 (1.775) | 34.42 (1.355) | 28.58 (1.125) | 6.35 (0.250) | 0.84 (0.033) | 100 | 250 | 550 |
| 28S2023-0M0 | 1 | M | 38.10 (1.500) | 26.67 (1.050) | 25.40 (1.000) | 6.35 (0.250) | 0.84 (0.033) | 115 | 250 | 520 |
| 28S2827-210 | 1 | NA | 21.00 (0.827) | 17.00 (0.669) | 12.01 (0.473) | 3.99 (0.157) | 0.94 (0.037) | 43 | 120 | 270 |

** The "D" & "E" dimensions for 28S, split, two piece cores must be doubled for total assembled dimensions. "D" & "E" dimensions shown for hinged case parts are for a complete assembly.

*Broadband (28) ribbon and flex cable cores are sorted by slot width on page 20 and sorted by impedance on page 21.



Plastic Clip Diagram



Metal Clip Diagram

Split Ferrite Cores for Ribbon & Flex Cables

** To determine total inside slot gap (I.D.) of an assembled split ferrite ribbon core, multiply the "E" dimension by 2. Both the "D" and "E" dimensions must be doubled for assembled core dimensions.

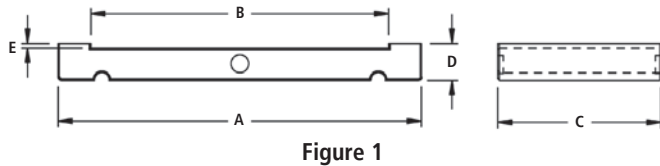


Figure 1

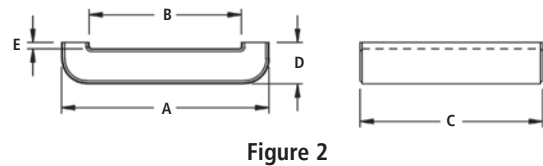


Figure 2

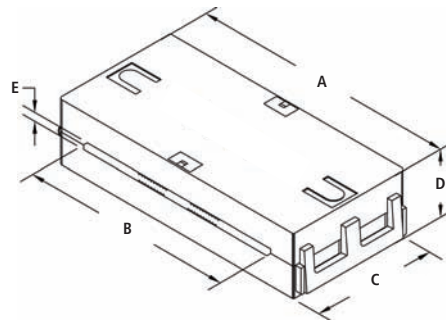


Figure 3

Part #28S2001-2A2 split ferrite core assembly with hinged black plastic case

Split ferrite cores for flat / ribbon cables are sold as single sides. It is necessary to order two sides to form one set. [Except 28S2001-2A2 (Figure 3) which is sold assembled]

Plastic Clip Assemblies: To specify one core side and one white plastic clip together, replace the second ferrite core part number character after the dash with the letter "P" (example: 28S2022-0P0). One complete assembly of two ferrite core sides (28 material) with two plastic clips would be specified as follows:

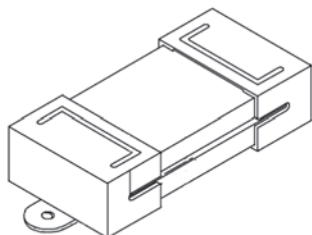
2 of part # 28S2022-0P0. Attachment ears are standard.

Metal Clip Assemblies: To specify one core side and one metal clip together, replace the second ferrite core part number character after the dash with the letter "M" (example: 28S2022-0M0). One complete assembly of two ferrite cores (28 material) with two metal clips would be specified as follows:

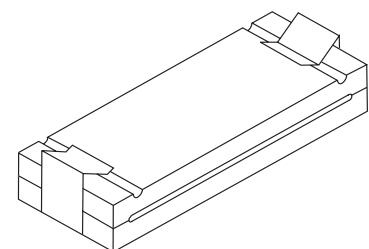
2 of part # 28S2022-0M0

Clips for Bulk Shipment: To order white plastic end clips (with attachment ears) separately in bulk, specify part number ASSE001-2. To order metal end clips separately in bulk, specify part number ASSE017-2. No standard clips are available for 28S2827-210.

Split Core with white Plastic Clips



Split Core with Metal Clips



QUICK REFERENCE CHART - SORTED BY SLOT WIDTH (B)

Broadband 28 Material Parts Only

One Piece (28R) & Split (28S) Cores for Ribbon & Flex Cables

| PART NUMBER Sorted by Slot Width | DIMENSIONS in mm Slot | | | | |
|--|--------------------------|-------|-------|------|------|
| | A | B | C | D** | E** |
| 28R0315-200 | 8.00 | 6.00 | 12.00 | 2.70 | 0.70 |
| 28R0453-200 | 11.50 | 8.00 | 12.00 | 3.00 | 0.70 |
| 28R0480-000 | 12.20 | 8.00 | 18.00 | 5.50 | 1.00 |
| 28R0453-300 | 11.50 | 8.00 | 20.00 | 3.00 | 0.70 |
| 28R0492-100 | 12.50 | 8.30 | 12.00 | 5.50 | 1.00 |
| 28R0546-000 | 13.90 | 9.40 | 18.00 | 5.30 | 0.80 |
| 28R0592-010 | 15.01 | 10.00 | 22.86 | 7.49 | 1.50 |
| 28S0670-000** | 17.02 | 12.50 | 14.99 | 3.40 | 0.51 |
| 28R0669-000 | 17.00 | 13.00 | 12.00 | 3.50 | 0.75 |
| 28R0610-000 | 15.50 | 13.50 | 10.00 | 3.40 | 1.40 |
| 28R0614-100 | 15.60 | 13.60 | 12.00 | 2.80 | 0.70 |
| 28R0825-000 | 20.95 | 14.00 | 19.05 | 7.75 | 0.80 |
| 28R0880-000 | 22.35 | 14.00 | 19.05 | 7.75 | 1.50 |
| 28R0756-000 | 19.20 | 15.00 | 10.00 | 5.35 | 1.15 |
| 28R0756-200 | 19.20 | 15.00 | 16.00 | 5.35 | 1.15 |
| 28S2827-210** | 21.00 | 17.00 | 12.01 | 3.99 | 0.94 |
| 28R0984-200 | 25.00 | 18.00 | 16.00 | 7.70 | 0.90 |
| 28R0984-000 | 25.00 | 18.00 | 24.00 | 7.70 | 0.90 |
| 28R0898-100 | 22.80 | 18.70 | 12.00 | 2.80 | 0.70 |
| 28R0898-200 | 22.80 | 18.70 | 16.00 | 2.80 | 0.70 |
| 28R0945-000 | 24.00 | 19.00 | 10.00 | 6.25 | 1.25 |
| 28R1024-000 | 26.00 | 20.50 | 10.00 | 6.00 | 0.80 |
| 28R1025-000 | 26.00 | 21.40 | 10.00 | 5.00 | 0.75 |
| 28R1101-000 | 27.97 | 22.94 | 14.66 | 7.75 | 1.50 |
| 28R1102-000 | 28.00 | 23.00 | 15.00 | 5.80 | 0.80 |
| 28R1236-000 | 31.40 | 23.00 | 19.00 | 7.75 | 1.50 |
| 28R1102-100 | 28.00 | 23.00 | 20.00 | 5.80 | 0.80 |
| 28R1240-010 | 31.40 | 23.00 | 21.00 | 7.75 | 1.00 |
| 28R1103-000 | 28.00 | 23.00 | 27.00 | 6.10 | 1.10 |
| 28R1127-500 | 28.58 | 23.50 | 9.70 | 7.70 | 1.70 |
| 28R1127-400 | 28.58 | 23.50 | 17.00 | 7.70 | 1.70 |
| 28R1127-200 | 28.58 | 23.50 | 24.89 | 7.70 | 1.70 |
| 28R1128-100 | 28.58 | 23.50 | 26.00 | 5.88 | 0.80 |
| 28R1127-000 | 28.58 | 23.50 | 31.00 | 7.70 | 1.70 |

| PART NUMBER Sorted by Slot Width | DIMENSIONS in mm Slot | | | | |
|--|--------------------------|-------|-------|-------|------|
| | A | B | C | D** | E** |
| 28R1128-200 | 28.58 | 24.00 | 14.00 | 5.38 | 0.80 |
| 28R1227-100 | 31.12 | 24.77 | 13.30 | 8.26 | 1.91 |
| 28R1261-200 | 32.00 | 25.10 | 9.70 | 7.75 | 0.90 |
| 28R1261-100 | 32.00 | 25.10 | 35.00 | 7.75 | 0.90 |
| 28R1262-000 | 32.00 | 26.00 | 30.00 | 7.00 | 1.00 |
| 28R1417-000 | 36.00 | 26.00 | 40.00 | 11.00 | 1.00 |
| 28R1517-000 | 38.10 | 26.67 | 25.40 | 12.07 | 1.91 |
| 28S2023-0M0** | 38.10 | 26.67 | 25.40 | 6.35 | 0.84 |
| 28R1518-000 | 38.50 | 26.80 | 25.40 | 12.09 | 1.91 |
| 28R1141-010 | 37.00 | 27.00 | 18.25 | 8.00 | 1.50 |
| 28R1340-100 | 34.00 | 28.00 | 12.00 | 7.00 | 1.00 |
| 28R1340-200 | 34.00 | 28.00 | 25.00 | 7.00 | 1.00 |
| 28R1450-100 | 36.83 | 29.58 | 10.00 | 7.75 | 0.75 |
| 28R1496-000 | 38.00 | 30.00 | 25.00 | 9.25 | 1.25 |
| 28R1418-000 | 36.00 | 33.00 | 10.00 | 4.00 | 1.00 |
| 28R1457-400 | 37.01 | 33.00 | 13.46 | 4.50 | 0.51 |
| 28R1775-000 | 45.08 | 34.42 | 28.58 | 12.45 | 1.52 |
| 28S2022-0*0** | 45.09 | 34.42 | 28.58 | 6.35 | 0.84 |
| 28R1800-010 | 45.72 | 35.05 | 27.94 | 12.70 | 1.52 |
| 28R1799-010 | 45.60 | 37.00 | 18.40 | 7.90 | 1.40 |
| 28R1654-010 | 42.00 | 37.50 | 5.00 | 5.00 | 0.70 |
| 28R1862-000 | 47.70 | 39.00 | 31.00 | 15.00 | 3.00 |
| 28R2000-010 | 50.80 | 40.60 | 15.20 | 12.20 | 2.00 |
| 28R2000-200 | 50.80 | 40.60 | 28.00 | 12.20 | 2.00 |
| 28R2170-100 | 55.12 | 43.69 | 12.70 | 12.70 | 1.27 |
| 28R2170-000 | 55.12 | 43.69 | 25.40 | 12.70 | 1.27 |
| 28R1953-000 | 49.61 | 44.00 | 12.00 | 7.62 | 1.45 |
| 28R1779-100 | 63.50 | 52.07 | 12.98 | 12.70 | 1.68 |
| 28R1779-000 | 63.50 | 52.07 | 28.58 | 12.70 | 1.68 |
| 28S2001-0*0** | 63.50 | 52.07 | 28.58 | 6.35 | 0.84 |
| 28S2001-2A2** | 63.50 | 52.07 | 24.38 | 6.35 | 0.84 |
| 28S2011-0*0** | 76.20 | 65.28 | 28.58 | 6.35 | 0.84 |
| 28R3149-000 | 79.98 | 68.58 | 12.70 | 11.99 | 1.91 |
| 28S2012-0M0** | 88.90 | 78.23 | 28.58 | 6.48 | 0.84 |

** The "D" & "E" dimensions for 28S split, two-piece cores must be doubled for total assembled dimensions

Refer to pages 15, 16, 17, & 18 for more data.

Custom Parts are also available

Broadband 28 Material Parts Only One Piece (28R) & Split (28S) Cores for Ribbon & Flex Cables

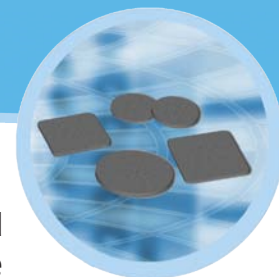
| PART NUMBER Sorted by Impedance | TYPICAL IMPEDANCE (Z) IN OHMS (Ω) | | |
|---------------------------------------|--|-----------|-----------|
| | @ 25 MHz | @ 100 MHz | @ 300 MHz |
| 28R0610-000 | 29 | 80 | 216 |
| 28R1654-010 | 27 | 84 | 200 |
| 28R1025-000 | 24 | 97 | 242 |
| 28R0614-100 | 36 | 98 | 245 |
| 28R0315-200 | 48 | 102 | 250 |
| 28R1418-000 | 34 | 104 | 245 |
| 28R0453-200 | 43 | 104 | 260 |
| 28R0756-000 | 40 | 107 | 258 |
| 28R0898-100 | 38 | 110 | 266 |
| 28R1127-500 | 40 | 110 | 265 |
| 28R0669-000 | 41 | 110 | 270 |
| 28R0945-000 | 43 | 112 | 269 |
| 28S2827-210 | 43 | 120 | 270 |
| 28R0898-200 | 43 | 127 | 280 |
| 28R1953-000 | 45 | 127 | 300 |
| 28R1024-000 | 48 | 128 | 299 |
| 28R1227-100 | 52 | 128 | 300 |
| 28R1450-100 | 48 | 130 | 290 |
| 28R1261-200 | 50 | 135 | 310 |
| 28R3149-000 | 51 | 135 | 318 |
| 28R1340-100 | 50 | 139 | 315 |
| 28R1101-000 | 55 | 140 | 300 |
| 28R0756-200 | 57 | 140 | 308 |
| 28R1457-400 | 44 | 140 | 310 |
| 28R1128-200 | 52 | 145 | 312 |
| 28R0492-100 | 68 | 150 | 290 |
| 28S0670-000 | 60 | 150 | 310 |
| 28R1127-400 | 60 | 150 | 330 |
| 28R0453-300 | 65 | 153 | 335 |
| 28R1102-000 | 61 | 154 | 340 |
| 28R1236-000 | 78 | 162 | 370 |
| 28R1141-010 | 67 | 168 | 380 |
| 28R2170-100 | 62 | 170 | 370 |
| 28R0984-200 | 70 | 170 | 370 |

| PART NUMBER Sorted by Impedance | TYPICAL IMPEDANCE (Z) IN OHMS (Ω) | | |
|---------------------------------------|--|-----------|-----------|
| | @ 25 MHz | @ 100 MHz | @ 300 MHz |
| 28R1779-100 | 65 | 170 | 375 |
| 28R2000-010 | 63 | 170 | 380 |
| 28R1799-010 | 57 | 172 | 388 |
| 28R0880-000 | 93 | 187 | 356 |
| 28R0480-000 | 100 | 190 | 320 |
| 28R0825-000 | 96 | 190 | 363 |
| 28R1127-200 | 85 | 191 | 410 |
| 28R1102-100 | 75 | 192 | 380 |
| 28R0546-000 | 91 | 193 | 419 |
| 28R1128-100 | 79 | 204 | 399 |
| 28R1240-010 | 84 | 211 | 440 |
| 28R0984-000 | 100 | 220 | 430 |
| 28R1127-000 | 100 | 220 | 430 |
| 28R1340-200 | 86 | 220 | 449 |
| 28R0592-010 | 121 | 227 | 370 |
| 28S2001-2A2 | 80 | 230 | 480 |
| 28R1103-000 | 95 | 230 | 480 |
| 28R1517-000 | 110 | 230 | 520 |
| 28R1518-000 | 105 | 235 | 478 |
| 28R1496-000 | 91 | 239 | 479 |
| 28S2012-0M0 | 80 | 240 | 630 |
| 28S2023-0M0 | 115 | 250 | 520 |
| 28S2022-0*0 | 100 | 250 | 550 |
| 28R2000-200 | 103 | 252 | 545 |
| 28R1262-000 | 110 | 260 | 520 |
| 28R1775-000 | 115 | 260 | 530 |
| 28R1800-010 | 110 | 260 | 555 |
| 28R1862-000 | 116 | 261 | 561 |
| 28R2170-000 | 110 | 280 | 550 |
| 28S2001-0*0 | 100 | 280 | 590 |
| 28S2011-0*0 | 100 | 280 | 600 |
| 28R1779-000 | 114 | 298 | 588 |
| 28R1261-100 | 140 | 350 | 700 |
| 28R1417-000 | 187 | 393 | 734 |

Refer to pages 15, 16, 17, & 18 for more data.

All chart data can be sorted on www.Lairdtech.com

Ferrite EMI Disks and Plates



Ferrite Disks and Plates provide a simple, cost-effective solution for radiated and inductively-coupled electromagnetic interference. After the PC board soldering process, a ferrite disk or plate can be installed directly on the source of EMI (such as active devices or unwanted antennas).



Features:

- Easy installation
- Each part for volume production is provided with permanent, double sided 3,5 mil acrylic adhesive with 218 oz./inch² adhesion.
- Samples and sample kits are available with removable and reusable adhesive for "trial and error" testing
- Variety of sizes offered
- For frequencies above 250 MHz, H series material is generally better than M series material
- Custom parts also available.

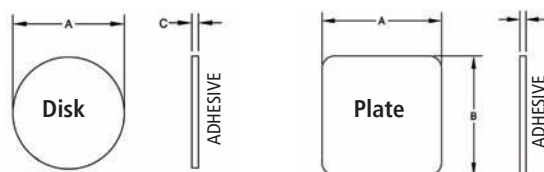
Applications:

- Ferrite disks and plates can be utilized either as inductively-coupled components or EMI shields on PC board components and traces. (Inductive coupling occurs when the ferrite affects the conducted wave form leaving the active component. The rise time of the wave form is effectively slowed by the ferrite, and the overshoot and associated ringing are attenuated. EMI shielding occurs when the ferrite absorbs the radiated emissions from active components, effectively protecting other boards or components in the vicinity from radiated contamination).
- Can be used to locate unwanted EMI antennas.
- Flat Flex & Ribbon cables.
- Can also provide retrofit, auxiliary EMI attenuation.

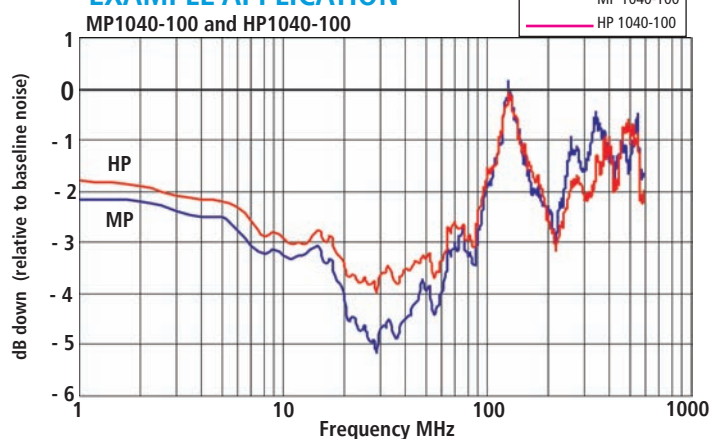
| PART NUMBER | A mm (inches) | B mm (inches) | C mm (inches) |
|-------------|---------------|---------------|---------------|
| HM0787-100 | 19.99 (0.787) | | 1.27 (0.050) |
| HM0787-200 | 19.99 (0.787) | | 1.91 (0.075) |
| HM1400-200 | 35.56 (1.400) | | 1.91 (0.075) |
| HM1400-300 | 35.56 (1.400) | | 2.54 (0.100) |
| MM0650-100 | 16.51 (0.650) | | 1.27 (0.050) |
| MM0787-100 | 20.00 (0.787) | | 1.27 (0.050) |
| MM0787-200 | 20.00 (0.787) | | 1.91 (0.075) |
| MM1400-200 | 35.56 (1.400) | | 1.91 (0.075) |
| MM1400-300 | 35.56 (1.400) | | 2.54 (0.100) |
| HP1040-100 | 26.42 (1.040) | 26.42 (1.040) | 1.27 (0.050) |
| HP1040-200 | 26.42 (1.040) | 26.42 (1.040) | 1.91 (0.075) |
| MP0315-200 | 8.00 (0.315) | 8.00 (0.315) | 2.00 (0.079) |
| MP0350-000 | 26.42 (1.040) | 8.89 (0.350) | 1.27 (0.050) |
| MP0433-000 | 11.00 (0.433) | 11.00 (0.433) | 1.96 (0.077) |
| MP0512-200 | 13.00 (0.512) | 13.00 (0.512) | 2.00 (0.079) |
| MP0590-200 | 21.00 (0.827) | 15.00 (0.591) | 2.00 (0.079) |
| MP0591-200 | 15.00 (0.591) | 15.00 (0.591) | 2.00 (0.079) |
| MP0760-100 | 19.30 (0.760) | 19.30 (0.760) | 1.27 (0.050) |
| MP1040-100 | 26.42 (1.040) | 26.42 (1.040) | 1.27 (0.050) |
| MP1040-200 | 26.42 (1.040) | 26.42 (1.040) | 1.91 (0.075) |
| MP1040-300 | 26.42 (1.040) | 26.42 (1.040) | 2.25 (0.089) |
| MP1496-000 | 38.00 (1.496) | 38.00 (1.496) | 2.00 (0.079) |

PART NUMBER SYSTEM EXAMPLE

| | | | |
|--------------|-----------|--------------------------|----------------|
| H | M | 0787 | 100 |
| H - Material | M - Disk | Part Size Identification | Thickness Code |
| M - Material | P - Plate | | |



EXAMPLE APPLICATION



Example Application Graph Explanation:

The zero line on the graph represents the base line noise recorded for an unprotected microprocessor. The curves (dB down) represent the performance of the Laird Technologies' ferrite plates relative to the baseline. The addition of the ferrite plates to the top of the processor in this specific application exhibits up to a 5 dB EMI reduction relative to the unprotected part. In the example application graph above, the ferrite plate MP1040-100 exhibits up to a 1 dB advantage over the HP1040-100 from 1-100 MHz, while the HP1040-100 exhibits a 0,5 dB advantage between 200 and 400 MHz. Performance can vary with different sizes, materials, processors and applications.

global solutions :
local support™

Laird Technologies is the world-leader in the design and supply of customized performance-critical products for wireless and other advanced electronic applications. Laird Technologies partners with its customers to help find solutions for applications in various industries such as Aerospace, Automotive Electronics, Computer, Consumer Electronics, Data Communications, Medical Equipment, Military, Network Equipment and Telecommunication industries.



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