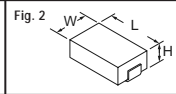
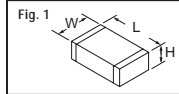


Steward Surface Mount EMI Suppression Ferrite Chips for Signal and Power Filtering



Call Digi-Key for Lead Free Versions of these Parts!



Steward's Part Number Prefix Code

HR: High Retention under bias	LI: Low Current
Hi: High Current	DM: Differential Mode and Very High Current
MI: Mid Current	HZ: High Impedance

Applications: • Filtering of power input pins of oscillators and logic devices using high speed clocks • Filtering of low frequency input/output signals entering/exiting shielded enclosures • High frequency filtering of medium speed clocks and video signals • Preventing oscillations in high frequency amplifiers

Fig.	Size Code	Dimensions - mm			Current Rating (mA) Continuous	Typical Impedance @ 100 MHz	Digi-Key Part No.	Cut Tape Pricing			Digi-Key Part No.	Tape & Reel Pricing		Steward Part No.	
		Length	Width	Height				10	50	100					
1	0402	1.01	0.50	0.50	200	300 Ω	240-1136-1-ND	1.47	6.37	11.76	240-1136-2-ND	548.80/8,000	2007.04/32,000	LI0402B301R-00	
					400	120 Ω	240-1135-1-ND	1.47	6.37	11.76	240-1135-2-ND	548.80/8,000	2007.04/32,000	LI0402D121R-00	
					500	30 Ω	240-1133-1-ND	1.47	6.37	11.76	240-1133-2-ND	548.80/8,000	2007.04/32,000	LI0402E300R-00	
					500	60 Ω	240-1134-1-ND	1.47	6.37	11.76	240-1134-2-ND	548.80/8,000	2007.04/32,000	LI0402G600R-00	
					100	600 Ω	240-1142-1-ND	1.59	6.91	12.75	240-1142-2-ND	595.00/8,000	2176.00/32,000	HZ0402A601R-00	
					400	300 Ω	240-1141-1-ND	.95	4.10	7.56	240-1141-2-ND	176.40/4,000	483.84/12,000	LI0603D301R-00	
	1	0603	1.60	0.80	0.80	500	150 Ω	240-1139-1-ND	1.04	4.50	8.31	240-1139-2-ND	193.90/4,000	531.84/12,000	LI0603E151R-00
						700	120 Ω	240-1138-1-ND	.62	2.70	4.98	240-1138-2-ND	116.20/4,000	318.72/12,000	LI0603G121R-00
						700	220 Ω	240-1140-1-ND	.95	4.10	7.56	240-1140-2-ND	176.40/4,000	483.84/12,000	LI0603G221R-00
						700	80 Ω	240-1137-1-ND	.95	4.10	7.56	240-1137-2-ND	176.40/4,000	483.84/12,000	LI0603G800R-00
						1,000	60 Ω	240-1131-1-ND	.94	4.06	7.50	240-1131-2-ND	175.00/4,000	480.00/12,000	MI0603J600R-00
						1,000	600 Ω	240-2198-1-ND	1.41	6.09	11.25	240-2198-2-ND	262.50/4,000	720.00/12,000	MI0603J601R-00
0603		1.60	0.80	0.80	1,000	68 Ω	240-1132-1-ND	.94	4.06	7.50	240-1132-2-ND	175.00/4,000	480.00/12,000	MI0603J680R-00	
					1,500	30 Ω	240-1130-1-ND	.96	4.18	7.71	240-1130-2-ND	179.90/4,000	493.44/12,000	MI0603K300R-00	
					2,000	300 Ω	240-2239-1-ND	1.41	6.09	11.25	240-2239-2-ND	262.50/4,000	720.00/12,000	MI0603L301R-00	
					2,500	120 Ω	240-2238-1-ND	1.41	6.09	11.25	240-2238-2-ND	262.50/4,000	720.00/12,000	MI0603M121R-00	
					4,000	60 Ω	240-2193-1-ND	1.37	5.92	10.92	240-2193-2-ND	254.80/4,000	698.88/12,000	HI0603P600R-00	
					100	2,200 Ω	240-2208-1-ND	1.03	4.47	8.25	240-2208-2-ND	192.50/4,000	528.00/12,000	HZ0603A222R-00	
0603	1.60	0.80	0.80	200	1,000 Ω	240-1145-1-ND	.53	2.29	4.23	240-1145-2-ND	98.70/4,000	270.72/12,000	HZ0603B102R-00		
				200	1,100 Ω	240-2209-1-ND	1.03	4.47	8.25	240-2209-2-ND	254.80/4,000	698.88/12,000	HZ0603B112R-00		
				300	600 Ω	240-1143-1-ND	.59	2.55	4.71	240-1143-2-ND	109.90/4,000	301.44/12,000	HZ0603C601R-00		
				300	650 Ω	240-2210-1-ND	1.03	4.47	8.25	240-2210-2-ND	192.50/4,000	528.00/12,000	HZ0603C651R-00		
				800	120 Ω	240-1041-1-ND	.95	4.10	7.56	240-1041-2-ND	176.40/4,000	483.84/12,000	LI0805H121R-00		
				800	150 Ω	240-1021-1-ND	.95	4.10	7.56	240-1021-2-ND	176.40/4,000	483.84/12,000	LI0805H151R-00		
1	0805	2.00	1.25	0.90	800	75 Ω	240-2219-1-ND	.95	4.10	7.56	240-2219-2-ND	176.40/4,000	483.84/12,000	LI0805H750R-00	
					1,000	7 Ω	240-2200-1-ND	1.03	4.47	8.25	240-2200-2-ND	192.50/4,000	528.00/12,000	MI0805J070R-00	
					1,500	11 Ω	240-1034-1-ND	1.03	4.47	8.25	240-1034-2-ND	192.50/4,000	528.00/12,000	MI0805K110R-00	
					1,500	26 Ω	240-2201-1-ND	1.03	4.47	8.25	240-2201-2-ND	192.50/4,000	528.00/12,000	MI0805K260R-00	
					1,500	40 Ω	240-1035-1-ND	1.03	4.47	8.25	240-1035-2-ND	192.50/4,000	528.00/12,000	MI0805K400R-00	
					1,500	600 Ω	240-2202-1-ND	1.22	5.28	9.75	240-2202-2-ND	227.50/4,000	624.00/12,000	MI0805K601R-00	
	0805	2.00	1.25	0.90	2,000	300 Ω	240-2203-1-ND	1.22	5.28	9.75	240-2203-2-ND	227.50/4,000	624.00/12,000	MI0805L301R-00	
					2,500	220 Ω	240-2204-1-ND	1.31	5.69	10.50	240-2204-2-ND	245.00/4,000	672.00/12,000	MI0805M221R-00	
					3,500	120 Ω	240-2194-1-ND	1.36	5.90	10.89	240-2194-2-ND	254.10/4,000	696.96/12,000	HI0805O121R-00	
					4,500	31 Ω	240-1007-1-ND	1.16	5.01	9.24	240-1007-2-ND	215.60/4,000	591.36/12,000	HI0805O310R-00	
					5,000	80 Ω	240-2195-1-ND	1.26	5.46	10.08	240-2195-2-ND	235.20/4,000	645.12/12,000	HI0805R800R-01	
					300	2,000 Ω	240-2211-1-ND	1.13	4.88	9.00	240-2211-2-ND	210.00/4,000	576.00/12,000	HZ0805C202R-00	
1206	3.20	1.60	1.10	400	1,000 Ω	240-2212-1-ND	1.13	4.88	9.00	240-2212-2-ND	210.00/4,000	576.00/12,000	HZ0805D102R-00		
				400	1,500 Ω	240-2213-1-ND	1.13	4.88	9.00	240-2213-2-ND	210.00/4,000	576.00/12,000	HZ0805D152R-00		
				500	600 Ω	240-1018-1-ND	.59	2.55	4.71	240-1018-2-ND	109.90/4,000	301.44/12,000	HZ0805E601R-00		
				700	470 Ω	240-2214-1-ND	.94	4.06	7.50	240-2214-2-ND	175.00/4,000	480.00/12,000	HZ0805G471R-00		
				800	120 Ω	240-2222-1-ND	.95	4.10	7.56	240-2222-2-ND	132.30/3,000	249.48/6,000	LI1206H121R-00		
				800	150 Ω	240-2223-1-ND	.95	4.10	7.56	240-2223-2-ND	132.30/3,000	249.48/6,000	LI1206H151R-00		
1	1206	3.20	1.60	1.10	1,500	26 Ω	240-1027-1-ND	1.03	4.47	8.25	240-1027-2-ND	144.38/3,000	272.25/6,000	MI1206K260R-00	
					1,500	31 Ω	240-1036-1-ND	1.22	5.28	9.75	240-1036-2-ND	170.63/3,000	321.75/6,000	MI1206K310R-00	
					2,000	600 Ω	240-2206-1-ND	1.41	6.09	11.25	240-2206-2-ND	196.88/3,000	371.25/6,000	MI1206K601R-00	
					1,500	90 Ω	240-1037-1-ND	1.22	5.28	9.75	240-1037-2-ND	170.63/3,000	321.75/6,000	MI1206K900R-00	
					2,000	500 Ω	240-2207-1-ND	1.22	5.28	9.75	240-2207-2-ND	170.63/3,000	321.75/6,000	MI1206L501R-00	
					1,100	3,000	240-1008-1-ND	1.37	5.92	10.92	240-1008-2-ND	191.10/3,000	360.36/6,000	HI1206N101R-00	
	1206	3.20	1.60	1.60	1,100	3,000	240-1010-1-ND	1.37	5.92	10.92	240-1010-2-ND	191.10/3,000	360.36/6,000	HI1206N800R-00	
					1,100	4,000	240-2235-1-ND	1.26	5.46	10.08	240-2235-2-ND	176.40/3,000	332.64/6,000	HI1206P121R-00	
					1,35	6,000	240-2196-1-ND	1.37	5.92	10.92	240-2196-2-ND	191.10/3,000	360.36/6,000	HI1206P161R-00	
					1,100	6,000	240-1009-1-ND	1.37	5.92	10.92	240-1009-2-ND	191.10/3,000	360.36/6,000	HI1206T500R-00	
					300	2,000 Ω	240-2215-1-ND	1.13	4.88	9.00	240-2215-2-ND	157.50/3,000	297.00/6,000	HZ1206C202R-00	
					400	1,000 Ω	240-2216-1-ND	1.13	4.88	9.00	240-2216-2-ND	157.50/3,000	297.00/6,000	HZ1206D102R-00	
1	1270	3.20	2.50	1.40	1,500	60 Ω	240-1038-1-ND	1.88	8.13	15.00	240-1038-2-ND	262.50/3,000	495.00/6,000	MI1210K600R-00	
1	1612	4.06	3.05	2.28	10,000	56 Ω	240-1128-1-ND	7.22	31.30	57.78	240-1128-2-ND	842.63/2,500	1588.95/5,000	DM1612X560R-00	
1	1806	4.50	1.60	1.60	300	150 Ω	240-1030-1-ND	2.42	10.47	19.32	240-1030-2-ND	225.40/2,000	637.56/6,000	LI1806C151R-00	
					500	100 Ω	240-1031-1-ND	2.42	10.47	19.32	240-1031-2-ND	225.40/2,000	637.56/6,000	LI1806E101R-00	
					500	80 Ω	240-1032-1-ND	2.42	10.47	19.32	240-1032-2-ND	225.40/2,000	637.56/6,000	LI1806E800R-00	
1806	4.50	1.60	1.60	1,000	80 Ω	240-1039-1-ND	2.03	8.78	16.20	240-1039-2-ND	189.00/2,000	534.60/6,000	MI1806J800R-00		
1806	4.50	1.60	1.60	6,000	60 Ω	240-1012-1-ND	2.63	11.38	21.00	240-1012-2-ND	245.00/2,000	693.00/6,000	HI1806F600R-00		
1	1812	4.50	3.20	1.40	1,500	120 Ω	240-1040-1-ND	2.70	11.70	21.60	240-1040-2-ND	315.00/2,500	594.00/5,000	MI1812K121R-00	
					6,000	80 Ω	240-1013-1-ND	2.70	11.70	21.60	240-1013-2-ND	315.00/2,500	594.00/5,000	HI1812T800R-00	
1	2220	5.59	5.08	5.08	1.52	4,000	170 Ω	7.31	31.69	58.50	240-1014-2-ND	682.50/2,000	1930.50/6,000	HI2220P171R-00	
					1.80	4,000	250 Ω	7.31	31.69	58.50	240-1015-2-ND	682.50/2,000	1930.50/6,000	HI2220P251R-00	
					1.97	4,000	550 Ω	8.72	37.78	69.75	240-2236-2-ND	813.75/2,000	2301.75/6,000	HI2220P551R-00	
					3.05	4,000	600 Ω	8.72	37.78	69.75	240-1016-2-ND	813.75/2,000	2301.75/6,000	HI2220P601R-00	
					3.05	4,000	700 Ω	8.72	37.78	69.75	240-1126-2-ND	813.75/2,000	2301.75/6,000	HI2220P701R-00	
					1.80	5,000	150 Ω	7.31	31.69	58.50	240-1121-2-ND	682.50/2,000	1930.50/6,000	HI2220R151R-00	
					3.20	5,000	300 Ω	7.31	31.69	58.50	240-1124-2-ND	682.50/2,000	1930.50/6,000	HI2220R301R-00	
					1.80	6,000	100 Ω	7.31	31.69	58.50	240-1120-2-ND	682.50/2,000	1930.50/6,000	HI2220T101R-00	
					14.45	4,000	600 Ω	14.45	62.60	115.56	240-2197-2-ND	1348.20/2,000	3813.48/6,000	HR2220P601R-00	
					20.06	8,000	800 Ω	20.06							

Steward

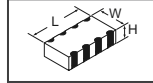
240-2228-ND (Steward K-103) High Current (4A to 75A) Common Mode Sample Kit (4 each of 25 different parts) ... \$60.00

EMI Filters, Chokes, and Power Inductor Chips

Surface Mount Four - Line Chip Arrays for Differential Signal Filtering

Features: • Small footprint • Rugged construction • Broad range of impedance values • Good high frequency performance (peaks well above 100MHz) • Lower installation cost (one pick and place motion instead of four discrete installations) • Equivalent performance to four 0603 sized chips

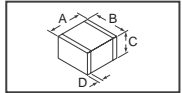
Call Digi-Key for Lead Free Versions of these Parts!



Size Code	Dimensions - mm			Filtered Circuits	Current Rating iMax (mA) Continuous	Typical Impedance @ 100 MHz		Cut Tape Price Each			Digi-Key Part No.	Tape & Reel Pricing			Steward Part No.
	Length	Width	Height			@ 100 MHz	@ 500 MHz	10	50	100		3,000	6,000	9,000	
1206	3.20	1.60	0.80	4	500	30 Ω	240-1146-1-ND	.61	.53	.49	240-1146-2-ND	280.88/M	264.83/M	256.80/M	DA1206E300R-00
					300	120 Ω	240-1147-1-ND	.61	.53	.49	240-1147-2-ND	280.88/M	264.83/M	256.80/M	DA1206C121R-00
					400	300 Ω	240-1148-1-ND	.61	.53	.49	240-1148-2-ND	280.88/M	264.83/M	256.80/M	DA1206D301R-00
					200	600 Ω	240-1149-1-ND	.61	.53	.49	240-1149-2-ND	280.88/M	264.83/M	256.80/M	DA1206B601R-00
					200	1000 Ω	240-1150-1-ND	.69	.60	.55	240-1150-2-ND	318.33/M	300.14/M	291.04/M	DA1206B102R-00

NEW! Power Inductor Chip / Monolithic Surface Mount

Steward's DI2220V301R-00 is a surface mount, high current power inductor (in the industry's smallest package) with exceptional performance under DC Bias. Very low DCR provides superior thermal performance under DC bias. This compact, monolithic component produces flat inductance over the driven current range (from 3 to 8 amps) comparable to a larger, heavier, wire-wound toroidal inductor. EMI resistant, fully shielded internal coil. Tuned to work with the new generation of high frequency multiphase DC-DC converters. Mounting can be on back side of PC boards. Low profile, small footprint and vibration resistant.

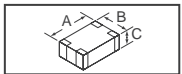


Size Code	Dimensions				L @ 2 MHz Typical nH (± 10%)		DCR Max. (Ω)	Rated I Max continuous (mA)	Cut Tape Price Each			Digi-Key Part No.	Tape & Reel Pricing		Steward Part No.
	A (mm)	B (mm)	C (mm)	D (mm)	5 Amps	8 Amps			10	50	100		2,000	5,000	
2220	5.59	5.08	3.61	0.76	300	270	0.010	8,000	240-2237-1-ND	1.73	1.43	1.02	240-2237-2-ND	670.89/M	DI2220V301R-00

NEW! Miniature High Current Common Mode Chokes

Steward's monolithic surface mount common mode chokes are designed for power and data line EMI filtering where high current, small size or high frequency performance is required. Low Normal Mode Impedance and Low DCR to minimize signal distortion. Up to 10 Amps continuous operating current capability in an 1812 size. Excellent performance beyond 1 GHz.

Call Digi-Key for Lead Free Versions of these Parts!

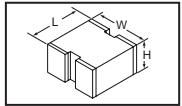


Size Code	Dimensions			Typical Impedance Common Mode (Ω)		DCR Max. (Ω)	Rated I Max continuous (mA)	Digi-Key Part No.	Cut Tape Price Each			Digi-Key Part No.	Tape & Reel Pricing		Steward Part No.
	A (mm)	B (mm)	C (mm)	@ 100 MHz	@ 500 MHz				10	50	100		2,500	5,000	
1812	4.57	3.05	1.60	33	50	0.003	10,000	240-2357-1-ND	.44	.39	.36	240-2357-2-ND	236.26/M	222.75/M	CM1812X330R-00
	4.57	3.05	2.36	60	85	0.005	5,000	240-2356-1-ND	.47	.41	.38	240-2356-2-ND	249.38/M	235.13/M	CM1812R600R-00

Common Mode Chip Beads for Power and Signal EMI Filtering

Features: • Monolithic • Compact size • High current carrying capability • Very low DCR to minimize signal distortion • Smaller, lighter, and less susceptible to vibration than old style wire-wound chokes • Performance peaks beyond 2 GHz

Call Digi-Key for Lead Free Versions of these Parts!



Size Code	Dimensions (mm)			Current Rating iMax (mA) Continuous	Typical Impedance Common Mode (Ω)		Digi-Key Part No.	Cut Tape Price Each			Digi-Key Part No.	Tape & Reel Pricing			Steward Part No.
	Length	Width	Height		@ 100 MHz	@ 500 MHz		10	50	100		2,500	5,000	10,000	
<i>Low Profile Surface Mount - Monolithic</i>															
1922	4.70	5.60	2.84	10,000	33	58	240-1104-1-ND	.69	.60	.56	240-1104-2-ND	322.00/M	303.60/M	294.40/M	CM1922X330R-00
3322	8.50	5.60	2.10	7,000	61	85	240-1102-1-ND	.91	.79	.73	240-1102-2-ND	422.63/M	398.48/M	386.40/M	CM3322U610R-00
	8.50	5.60	2.84	10,000	63	110	240-1103-1-ND	.91	.79	.73	240-1103-2-ND	422.63/M	398.48/M	386.40/M	CM3322X630R-00
<i>High Frequency - Low Profile Surface Mount - Monolithic</i>															
3322	8.50	5.60	2.10	4,000	40	120	240-1101-1-ND	.91	.79	.73	240-1101-2-ND	422.63/M	398.48/M	386.40/M	CM3322P400R-00

Common Mode Chokes for Ultra High Current Power EMI Filtering

Fig. 1

Features: • Surface mount design • Filters groups of signals. • Multi pass board layout application effectively installs 2, 3 or 4 chokes in series to multiply impedance up to 1000 Ohms at 100 MHz • High continuous operating current capability (8 Amps) • Will fit behind RJ45 Jack • Eliminates the need for an expensive filtered connector

Fig. 2

Fig. 3

Fig. 4

Features: • High continuous operating current capability (10 - 20 Amps) • Compact size • Parts available in both thru-hole (B) and surface mount (R) versions

Fig. 5

Fig. 6

Features: • High continuous operating current capability (10 - 20 Amps) • Can be used as multi-pass device to multiply impedance • Available in both thru-hole (B) and surface mount (R) versions

Fig. 7

Fig. 8

Features: • Very high continuous operating current capability (up to 75 Amps) • Impedance over 100 Ohms at 50 MHz and 200 Ohms at 500 MHz • Small footprint • Smaller and lighter than older style wire wound high current chokes

Fig.	Size Code	Dimensions (mm)			Current Rating. iMax (A) Continuous	Common Mode Impedance @ 100 MHz	Digi-Key Part No.	Cut Tape Price Each			Digi-Key Part No.	Tape & Reel Pricing			Steward Part No.	
		Length	Width	Height				1	10	50		100	194.46/400	916.74/2,000		1777.92/4,000
<i>High Power Surface Mount</i>																
5	2545	11.38	6.30	9.32	10	170 Ω	240-1106-1-ND	—	1.05	.91	.84	240-1106-2-ND	194.46/400	916.74/2,000	1777.92/4,000	CM2545X171R-00
1	3032	7.62	8.13	9.45	8	200 Ω	240-1116-1-ND	—	1.32	1.15	1.06	240-1116-2-ND	725.79/1,250	1407.60/2,500	1407.60/2,500	CM3032V201R-00
1	3032	7.62	8.13	14.48	8	300 Ω	240-1118-1-ND	—	1.59	1.38	—	240-1118-2-ND	74.01/100	348.89/500	676.64/1,000	CM3032V301R-00
5	3440	10.03	8.51	9.32	20	170 Ω	240-2186-1-ND	—	1.17	1.01	.94	240-2186-2-ND	203.77/375	960.61/1,875	1863.00/3,750	CM3440Z171R-00
7	4545	11.38	11.38	9.32	10	130 Ω	240-1108-1-ND	—	1.38	1.20	1.11	240-1108-2-ND	257.60/400	1214.40/2,000	2355.20/4,000	CM4545Z131R-00
2	4732	11.94	8.13	9.45	8	200 Ω	240-1117-1-ND	—	1.63	1.41	1.31	240-1117-2-ND	303.52/400	1430.88/2,000	2775.04/4,000	CM4732V201R-00
2	4732	11.94	8.13	14.48	8	300 Ω	240-1119-1-ND	—	1.92	1.67	—	240-1119-2-ND	134.35/150	633.35/750	1228.32/1,500	CM4732V301R-00
7	5740	14.48	10.03	9.32	20	170 Ω	240-2189-1-ND	—	1.33	1.16	1.07	240-2189-2-ND	232.44/375	1095.81/1,875	2125.20/3,750	CM5740Z171R-00
3	6032	15.24	8.13	9.45	8	200 Ω	240-2191-1-ND	—	1.67	1.45	1.34	240-2191-2-ND	194.82/250	918.43/1,250	1781.20/2,500	CM6032V201R-00
3	6032	15.24	8.13	14.48	8	300 Ω	240-2192-1-ND	—	1.99	1.73	—	240-2192-2-ND	92.87/100	437.83/500	849.12/1,000	CM6032V301R-00
<i>High Current Thru Hole</i>																
4	2545	11.38	6.30	9.32	10	170 Ω	240-1105-ND†	.81	.67	.58	.52	—	—	—	—	CM2545X171B-00
6	4545	11.38	11.38	9.32	10	130 Ω	240-1107-ND†	.95	.79	.68	.61	—	—	—	—	CM4545Z131B-00
<i>Ultra High Current Thru Hole</i>																
4	3440	10.03	8.51	9.32	20	170 Ω	240-2185-ND†	.90	.75	.65	.58	—	—	—	—	CM3440Z171B-00
8	5441	13.72	10.41	15.24	75	160 Ω	240-1109-ND†	1.69	1.41	1.21	1.09	—	—	—	—	CM5441Z161B-00
8	5441	13.72	10.41	10.52	75	100 Ω	240-1110-ND†	1.61	1.34	1.15	1.04	—	—	—	—	CM5441Z101B-00
6	5740	14.48	10.03	9.32	20	170 Ω	240-2188-ND†	1.05	.88	.76	.68	—	—	—	—	CM5740Z171B-00

† Bulk Packaging

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