The Syfer Balanced Line Chip is a 3 terminal EMI chip device. The revolutionary design provides simultaneous line-to-line and line-toground filtering, using a single ceramic chip. In this way, differential and common mode filtering are provided in one device. Capable of replacing 2 or more conventional devices, it is ideal for balanced lines, twisted pairs and dc motors, in automotive, audio, sensor and other applications.

These filters can prove invaluable in meeting stringent EMC demands particularly in automotive applications.



### Specifications

Dielectric Electrical Configuration Capacitance Measurement Typical Capacitance Matching Temperature Rating Dielectric Withstand Volage

X7R or COG Multiple capacitance At 1000hr point Better than 5% -55°C to 125°C 2.5 x Rated Volts for 5 secs. Charging current limited to 50mA Max. 10,000 Mohms Min Nickel Barrier

BLC

Insulation Resistance Termination Material

### Advantages

- Replaces 2 or 3 capacitors with one device
- Matched capacitance line to ground on both lines
- Low inductance due to cancellation effect
- Capacitance line to line
- Differential and common mode attenuation
- Effects of temperature and voltage variation eliminated
- Effect of ageing equal on both lines
- High current capability
- Applications
- Balanced lines
- Twisted pairs
- EMI Suppression on DC motors
- Sensor/transducer applications
- Wireless communications
   Audio

Chip			_		
Size	L L	w	т	L1	L2
0603*	1.6±0.2 (0.063±0.008)	0.8±0.2 (0.03±0.008)	0.5±0.15 (0.02±0.006)	0.3±0.2 (0.012±0.008)	0.2±0.1 (0.008±0.004)
0805	2.0±0.3 (0.08±0.012)	1.25±0.2 (0.05±0.008)	1.0±0.15 (0.04±0.006)	0.5±0.25 (0.02±0.01)	0.3±0.15 (0.012±0.006)
1206	3.2±0.3 (0.126±0.012)	1.60±0.2 (0.063±0.008)	1.1±0.2 (0.43±0.008)	0.95±0.3 (0.037±0.012)	0.5±0.25 (0.02±0.01)
1410	3.6±0.3 (0.14±0.012)	2.5±0.3 (0.1±0.012)	2 max. (0.08 max.)	1.20±0.3 (0.047±0.012)	0.5±0.25 (0.02±0.01)
1812	4.5±0.35 (0.18±0.14)	3.2±0.3 (0.126±0.012)	2 max. (0.08 max.)	1.5±0.35 (0.6±0.14)	0.5±0.25 (0.02±0.01)
2220	5.7±0.4 (0.22±0.016)	5.0±0.4 (0.2±0.016)	2.5 max. (0.1 max.)	2.25±0.4 (0.09±0.016)	0.75±0.25 (0.03±0.01)





#### Insertion Loss Characteristics (common mode) Typical 50 ohm system



I. For details of ordering see page 62
 2. For soldering and installation information see page 69



\* The 0603 chip size is a development item that will be available during the life of this catalogue. All technical information should be considered provisional and subject to change.

No.         No. <th></th> <th>G</th> <th>Sa</th> <th>*0</th> <th>0.</th> <th>P.</th> <th></th> <th></th> <th>2</th>		G	Sa	*0	0.	P.			2
00     100 <sup>F</sup> 50 <sup>F</sup> 10     10       112     6     15     7.5       113     9       123     11.5.5       133     11.5.5       133     11.5.5       124     60       125     62       124     10       125     10       127     11.5.5       1280     10       121     100       122     11.1       120     60       122     11.1       120     60       122     11.1       120     60       122     11.1       120     60       122     11.1       120     60       122     1.1       123     0.56       123     0.56       123     0.56       123     0.56       123     0.56       123     0.56       123     0.56       123     0.56       123     0.56       123     0.56       123     0.56       123     0.56       124     0.56       125     6.28       13     10.5       13 <t< th=""><th>- de</th><th>Citolo</th><th>Colo Challe</th><th>603</th><th>805</th><th>206</th><th>a to</th><th>812</th><th>220</th></t<>	- de	Citolo	Colo Challe	603	805	206	a to	812	220
15       7.5       7.5         18       9       9         22       11.         27       13.5         33       16.5         28       24         100       50         28       24         11       100         50       15         33       16.5         34       135         35       28         34       135         35       28         36       58         34       150         35       75         36       56         37       135         38       340         39       195         31       560         28       14         300       155         31       560         28       340         31       155         32       15         33       16.5         34       165         35       15         36       28         37       155         33       15         33       16.5	00 20	10pF 12	5pF 6	50					
18       9         22       11         02       13.5         33       16.5         34       16.5         35       6.28         86       34         11       120         12       0.60         12       13.5         13       15.6         14       220         15       12.5         15       13.5         13       150         13       150         14       220         13       150         14       200         15       28.2         14       200         15       28.0         15       156         22       1.1         13       680         24.1       1.0         15       66         21       1.0         15       156         22       1.1         14       20.4         15       1.0         16       60         17       20.6         22       1.2         13       1.0	50	15	7.5		× ×				
22     13.5       33     10.5       33     10.5       34     23.5       56     28       34     22.5       56     28       34     22.5       35     34       100     50       11     120       120     100       121     120       120     100       130     165       13     300       13     165       13     165       13     165       13     165       13     165       14     120       15     160       160     160       17     170       18     0.9       190     100       100     100       100     100       11     120       120     15       130     15       14     120       15     150       160     150       121     120       130     155       121     150       133     165       133     165       133     165       133     165	80	18	9						
33       12.3       13.3       15.5       13.3       15.5       13.3       15.5       13.3       15.5       13.3       15.5       13.3       15.5       13.3       15.5       13.3       15.5       13.3       15.5       13.3       13.3       16.5       13.3       13.3       16.5       13.3       14.3       13.9       13.3       14.3       13.9       13.3       14.3       <	20	22	11						
33       10 5         34       23.5         35       23.5         36       54         38       11         100       50         11       120         12       120         13       150         14       120         15       75         16       50         11       220         12       120         13       150         14       120         15       75         16       50         11       220         12       120         13       150         14       70         15       280         11       50         12       1.2         13       165         14       70         15       280         11       50         12       1.2         13       1.5         14       70         15       1.5         15       1.6         15       1.6         15       1.7         15	70 20	27	13.5			2			
60       47       23.5         80       68       34         11       100       50         12       120       60         13       150       75         14       220       110         15       75       131         13       150       75         14       220       103         15       75       135         13       165       280         14       220       103         15       75       165         16       165       165         17       270       135         13       150       75         12       1.06       50         13       165       9         14       320       1.65         15       7.5       9         16       1.65       9         17       22       1.6         18       89       9         13       165       9         13       165       9         13       15       7.5         13       16       9         14 <t< td=""><td>90 90</td><td>30</td><td>10.5</td><td></td><td></td><td></td><td></td><td></td><td></td></t<>	90 90	30	10.5						
90       56       28       34       94       94       95       34       94       95       94       95       94       95       94       95       95       95       94       95 <td< td=""><td>70</td><td>47</td><td>23.5</td><td></td><td></td><td></td><td></td><td></td><td></td></td<>	70	47	23.5						
86       34       34         11       100       50         12       20       60         13       150       75         14       120       60         13       150       75         14       120       100         150       75       100         11       120       135         13       136         14       201       135         15       75         14       200       135         15       560       280         11       680       340         11       680       340         11       680       340         122       1.0       0.75         13       1.65       2.1         15       0.75       1.3         15       0.75       1.3         16       2.2       1.1         17       2.2       1.3         18       0.9       2.3         19.5       2.2       1.3         13       165       2.8         13       165       2.8         13       16	60	56	28						
82       41         11       100         120       60         11       100         12       220         131       100         12       220         131       100         12       220         131       100         12       220         131       100         131       500         141       220         15       0.0         15       220         13       500         141       220         15       0.75         15       0.75         12       1.2         12       0.6         12       1.2         12       0.6         12       1.2         13       1.5         14       100         15       1.5         16       1.6         17       2.2         18       1.6         19       1.6         13       1.6         14       100         15       1.6         16       1.6	80	68	34						
11       100       50       60         11       150       75       60         11       150       75       60         11       120       135       135         11       130       155       135         11       130       155       135         11       120       135       135         13       500       235         13       500       230         13       500       230         13       500       230         13       500       230         14       120       100         12       120       165         12       12       15         13       165       28         14       120       56         12       15       7.5         13       12       6         13       15       7.5         13       12       7.5         13       12       7.5         13       12       7.5         13       12       7.5         13       12       7.5         13       12	20	82	41						
1       100       95         12       220       135         13       300       165         13       300       195         14       220       135         13       300       195         14       220       135         15       500       280         14       800       340         12       12       0.6         12       1.2       0.6         12       1.2       0.6         12       1.3       0.75         12       1.2       0.6         12       1.2       0.6         12       1.3       0.5         12       1.3       0.5         12       1.3       0.5         13       10       5         13       10       5         13       16.5       50V         14       100       50V	01 21	120	50				6		
1       180       90       100         12       220       110         13       300       165         13       300       165         14       70       235         15       560       280         11       820       410         12       1.06       0.5nF         12       1.0       0.5nF         12       1.5       0.75         12       1.2       0.6         12       1.2       0.6         12       1.3       0.9         12       2.2       1.1         1.2       0.6       2.2         1.3       0.75         1.2       6.8       3.4         1.2       6.8       3.4         1.2       6.8       3.4         1.2       6.8       3.4         1.2       6.8       3.4         1.3       10       5         1.3       12       6         1.3       12       6         1.3       12       6         1.3       12       6         1.3       12       6	51	120	75				2		
11       220       110       0 <td>.81</td> <td>180</td> <td>90</td> <td>50</td> <td></td> <td></td> <td></td> <td></td> <td></td>	.81	180	90	50					
11       270       135         13       330       165         14       470       235         15       560       280         11       820       410         121       120       1.56         121       120       1.56         121       120       1.56         121       1.2       0.6         121       1.2       0.75         121       1.5       0.75         122       2.2       1.1         1.2       0.75         122       2.2       1.1         1.2       0.75         122       2.2       1.1         1.3       1.0       5         122       2.2       1.1         13       10       5         13       12       6         13       12       6         13       12       15         13       13       15         13       14       120         13       15       120         13       15       120         13       12       15         14       130	21	220	110						
11       330       105         12       340       195         13       560       280         11       820       410         12       820       410         12       820       410         12       820       410         12       820       410         12       820       410         12       12       0.6         12       1.5       0.75         12       1.8       0.9         12       2.2       1.1         12       2.3       9         1.9       56       2.8         2.2       3.3       1.65         2.2       2.7       1.3         1.3       10       5         2.5       6.8       3.4         2.8       2.2       4.1         13       10       5         13       12       6         13       12       6         13       12       6         13       12       6         13       12       6         13       15       7.5         13	71	270	135						
1       470       235       10       10         1       470       235       10       10         1       560       280       340       13       150       235         1       560       280       340       10 <td>31</td> <td>330</td> <td>165</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>	31	330	165						
100       230         11       560       340         12       820       410         12       12       0.6         12       1.2       0.6         12       1.5       0.75         12       2.2       1.1         12       2.2       1.1         12       2.2       1.1         12       2.2       1.1         12       2.7       1.35         12       3.3       1.65         12       5.6       2.8         12       6.8       3.4         12       6.8       3.4         13       10       5         13       12       6         13       12       6         13       12       6         13       12       6         13       15       7.5         13       18       9         13       12       6         13       12       6         13       13       16         13       16       75         13       18       9         14       120       1	91 71	390	195		2				
31       680       340         11       820       410         21       0.6         22       1.0         21       12         0.6       12         21       1.0         1.2       0.6         22       1.5         1.8       0.9         22       2.2         1.8       0.9         22       2.2         1.8       0.9         22       2.2         2.3       1.65         22       3.3         1.5       2.5         2.2       1.5         3.3       16         3.4       7.5         3.3       18         9       19.5         3.3       16         3.3       16         3.3       16         3.4       7         3.3       15         3.4       7         3.3       16         3.4       100         4.4       120         4.4       120         4.4       120         4.4       120         4.4 <td>61</td> <td>560</td> <td>235</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>	61	560	235						
21       820       410       0.0FF       0.5nF         22       1.2       0.6       0.5nF       0.5nF         22       1.5       0.75       0.75       0.75         22       2.2       1.1       0.75       0.5nF         22       2.2       1.1       0.75       0.75         22       2.2       1.1       0.75       0.75         22       3.3       1.65       2.3       0.9       0.9         22       2.7       1.35       0.75       0.9       0.9         23       3.9       1.95       0.9       0.9       0.9         24       8.2       4.1       0.9       0.9       0.9       0.9         13       12       6.8       3.4       0.9       0.9       0.9       0.9         13       12       6.8       3.4       0.9       0.9       0.9       0.9       0.9         13       12       6.8       3.4       12.0       0.9       100V       0.9       0.9       0.9       0.9       0.9       0.9       0.9       0.9       0.9       0.9       0.9       0.9       0.9       0.9       0.9	81	680	340						
1.0nF       0.5nF         1.5       0.75         1.8       0.9         22       1.1         22       2.2         1.2       1.35         2.3       1.8         2.2       2.1         2.2       1.1         2.2       1.1         2.2       1.1         2.2       1.1         2.2       1.1         2.2       1.1         2.2       1.1         2.2       1.1         2.2       1.2         1.3       1.5         2.4       7.7         2.5       2.8         2.4       1.7         2.5       3.3         1.5       7.5         1.3       13         1.3       12         6       2.4         1.3       13         1.3       14         1.3       15         1.3       15         1.3       16.5         1.3       16.5         1.3       16.5         1.4       100         1.4       100         1.4       10	21	820	410						
22       1.2       0.6         21       1.5       0.75         22       1.8       0.9         22       2.2       1.1         22       2.7       1.35         23       3.3       1.65         24       2.4       1.1         25       6.6       2.8         24       4.7       2.35         25       6.6       2.8         26       8.3.4       1.2         28       2.2       4.1         33       10       5         33       15       7.5         33       33       16.5         33       34       72.3.5         33       36       34         34       72.3.5       50V         33       18       9         133       18       9         134       100       50V         14       100       50V         14       100       50V         14       100       16V         14       16V       16V         14       100       16V         15       12       0.6U	02	1.0nF	0.5nF					j j	
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	22	1.2	0.6			<b>B</b>			j j
22       2.2       1.1         22       2.2       1.1         22       2.2       1.1         22       2.2       1.1         22       2.2       1.1         22       3.3       1.65         23       3.3       1.65         22       5.6       2.8         24       7.7       2.35         25       5.6       2.8         26       8.3       4         27       1.3.5         33       15       7.5         33       15       7.5         33       16.5         33       16.5         33       33       16.5         33       35       6         33       82       41         41       100       50V         250       25V       16V         44       470       235         44       470       235         44       470       235         44       470       235         44       470       25V         15       1.2       0.60         16000       12000       10000	52 82	1.5	0.75						
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	02 22	2.2	1.9						
32       3.3       1.65         22       3.9       1.95         22       5.6       2.8         23       5.6       2.8         24       4.7       2.35         32       5.6       2.8         24       4.7       2.35         33       12       6         33       15       7.5         33       18       9         33       12       6         33       16.5         33       33         34       7.7         35       56         28       4.1         100       50         14       100         33       16.5         33       16.5         33       22         14       100         14       100         150       75         14       300         14       300         15       1.2         12       12         13       165         14       300         15       1.2         14       820         1600       1	72	2.7	1.35				8		
22       3.9       1.95         22       4.7       2.35         25       5.6       2.8         28       2.6       3.4         28       2.6       3.4         28       2.6       3.4         28       2.6       6.8         21       6.7       5         22       8.2       4.1         30       10       5         23       12       6         33       15       7.5         33       18       9         32       22       11         73       27       13.5         33       39       19.5         73       47       23.5         33       56       28         34       120       60         14       100       50V         225       16V       100V         14       300       1500         14       300       1500         14       500       25V         15       1.2       0.6	32	3.3	1.65				× ×		
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	92	3.9	1.95						
24       5.0       2.0         22       6.8       3.4         22       8.2       4.1         33       10       5         32       12       6         33       15       7.5         33       15       7.5         33       16.5         33       33       16.5         33       33       16.5         33       35       6         33       56       28         33       68       34         33       88       34         33       88       34         34       120       60         44       120       60         44       300       155         44       300       155         14       300       155         14       300       155         14       560       280         14       820       410         15       1/F       0.5         15       1/F       0.5         15       1/2       0.6	/2	4.7	2.35						
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	582 582	5.0	2.8					2	
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	322	8.2	4.1						
12       6 $7.5$ $9$ $33$ $15$ $7.5$ $33$ $16.5$ $7.5$ $33$ $16.5$ $33$ $16.5$ $33$ $19.5$ $73$ $47$ $23.5$ $33$ $66$ $34$ $19.5$ $75$ $47$ $23.5$ $33$ $68$ $34$ $19.5$ $75$ $14$ $120$ $60$ $14$ $150$ $75$ $100V$ $50V$ $25V$ $100V$ $50V$ $25V$ $16V$ $16V$ $16V$ $16V$ $16V$ $16V$ $16V$ $16V$ $16V$ $1000$ $10000$ $1$	.03	10	5						
$33$ $15$ $7.5$ $33$ $18$ $9$ $32$ $22$ $11$ $73$ $27$ $13.5$ $33$ $33$ $16.5$ $33$ $39$ $19.5$ $73$ $47$ $23.5$ $33$ $56$ $28$ $33$ $66$ $34$ $123$ $82$ $41$ $14$ $120$ $60$ $14$ $120$ $60$ $14$ $120$ $100V$ $14$ $220$ $110$ $14$ $300$ $195$ $14$ $300$ $195$ $14$ $320$ $16V$ $14$ $820$ $410$ $15$ $1\mu$ F $0.5\mu$ F $5$ $1.2$ $0.6$	.23	12	6	Ŏ					8
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	53	15	7.5						<
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	83	18	9						
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	23 73	22	13 5						
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	33	33	16.5						
$33$ $47$ $23.5$ $33$ $56$ $28$ $33$ $68$ $34$ $33$ $82$ $41$ $100$ $50$ $44$ $120$ $60$ $14$ $120$ $60$ $14$ $120$ $100$ $14$ $220$ $110$ $14$ $220$ $110$ $14$ $220$ $110$ $14$ $235$ $50V$ $14$ $390$ $195$ $14$ $680$ $340$ $14$ $820$ $410$ $15$ $1\mu$ $0.5\mu$ $15$ $1.2$ $0.6$	93	39	19.5						
$33$ $56$ $28$ $33$ $68$ $34$ $23$ $82$ $41$ $100$ $50$ $24$ $120$ $60$ $44$ $120$ $60$ $44$ $120$ $100V$ $74$ $270$ $135$ $14$ $330$ $165$ $14$ $320$ $150V$ $14$ $320$ $150V$ $14$ $560$ $280$ $14$ $680$ $340$ $14$ $820$ $410$ $15$ $1\mu$ F $0.5\mu$ F $15$ $1.2$ $0.6$	73	47	23.5						
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	63	56	28						
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	83 23	68 82	34 41						
$24$ $120$ $60$ $54$ $150$ $75$ $34$ $180$ $90$ $120$ $110$ $100V$ $74$ $270$ $135$ $34$ $330$ $165$ $34$ $330$ $165$ $50V$ $25V$ $74$ $470$ $235$ $74$ $560$ $280$ $14$ $680$ $340$ $14$ $820$ $410$ $15$ $1\mu$ F $0.5\mu$ F $15$ $1.2$ $0.6$	04	100	50						
54       150       75         34       180       90         24       220       110         74       270       135         34       330       165         24       270       135         34       330       165         24       270       135         34       330       165         24       270       25V         24       390       195         24       470       235         34       560       280         14       680       340         24       820       410         15       1 $\mu$ F       0.5 $\mu$ F         25       1.2       0.6	24	120	60						
$34$ $180$ $90$ $24$ $220$ $110$ $74$ $270$ $135$ $330$ $165$ $34$ $330$ $165$ $34$ $330$ $165$ $34$ $390$ $195$ $74$ $470$ $235$ $34$ $560$ $280$ $14$ $820$ $410$ $15$ $1\mu$ $0.5\mu$ F $15$ $1.2$ $0.6$ <b>eeled</b> 178mm (7") $16000$ $12000$ $10000$ $8000$ $4000$ <b>4000</b> $3000$ $2500$ $2000$ $1000$ <b>1000</b> $10000$ $4000$	54	150	75	Vo	Itage				
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	84	180	90						
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	24 74	220	110		1000				
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	34	330	165		<b>5</b> 0V				
$74$ $470$ $235$ $54$ $560$ $280$ $34$ $680$ $340$ $24$ $820$ $410$ $15$ $1\mu$ F $0.5\mu$ F $15$ $1.2$ $0.6$ <b>seled</b> $178mm$ (7") $4000$ $3000$ $2500$ $2000$ $1000$ <b>uantity</b> $330mm$ (13") $16000$ $12000$ $10000$ $4000$ $4000$	94	390	195		25\/				
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	74	470	235		161/		Ĭ		
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	eelea	1/8	mm (7'') mm (13'')	4000	12000	2500	2000	4000	4000



1. For detail of ordering see page 62.



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BLC

The Syfer Balanced Line EMI chip has a unique internal architecture which provides unbeatable EMC performance for dual line data transmission.



A typical application for dual line data transmission would see a board layout using decoupling chip capacitors or 3 terminal feedthrough chips as shown in Fig 1.



Fig 1

The Balanced Line EMI chip replaces decoupling capacitors or 3 terminal feedthrough chips on a 1 for 2 basis and provides line to line (differential mode) decoupling. Fig 2.





The internal structure furnishes a reduced inductance when compared to that of a conventional capacitor. This is a result of the novel internal electrode structure which inherently reduces the inductance by the cancellation effect of opposing currents in close proximity.

The capacitance line to ground (common mode) is closely matched due to the symmetry within the design. As the device includes line to ground capacitance for both lines, any temperature, ageing and voltage effects will have an equal influence on both lines therefore maintaining balanced decoupling.

The construction also allows a capacitance between lines as well as to ground as shown in Fig 3.



C2, the line to line capacitance, is half the line to ground capacitance thus providing coupling of high frequency interference between balanced lines.

Because the part acts as a decoupling device, the current limitations of a standard 3 terminal chip do not apply. The single line 3 terminal feedthrough chip carries the signal current through the very thin feedthrough electrodes within the device which have limited DC resistance and so can cause excessive heating, hence the maximum permissible current is often limited to around 300 mA for a 1206 device. The dual line 3 terminal chip is in by-pass across two lines and so is unaffected by high signal currents.

Table 1 offers a comparison of decoupling devices and demonstrates how the Balanced Line EMI chip extends the options for EMC circuit protection.

Component	Advantages	Disadvantages	Applications					
		Requires 1 per line	<ul> <li>By-pass</li> </ul>					
Chip capacitor	<ul> <li>Industry standard</li> </ul>	<ul> <li>High inductance</li> </ul>	Low frequency					
		<ul> <li>Capacitance matching problems</li> </ul>						
3 terminal	<ul> <li>Feedthrough</li> </ul>		<ul> <li>Feedthrough</li> </ul>					
feedthrough	Lower Inductance	<ul> <li>Current limited</li> </ul>	<ul> <li>Unbalanced lines</li> </ul>					
recutiliough			<ul> <li>High frequency</li> </ul>					
	<ul> <li>Very low inductance</li> </ul>		<ul> <li>By-pass</li> </ul>					
	<ul> <li>Replaces 2 (or 3) components</li> </ul>		<ul> <li>Balanced lines</li> </ul>					
Balanced line	<ul> <li>Negates the effects of</li> </ul>	Not for unbalanced signal lines	High frequency					
EMI chip	temperature, voltage and ageing		<ul> <li>DC electric motors</li> </ul>					
	Provides both common mode and							
	differential mode attenuation							
Table 1								



#### **Application Note**

One of the significant features of this product is its extremely low inductance, making it particularly suitable for high speed digital applications and for reduction of common mode currents for power line applications. Inductance cancellation, due to the effect of opposing current flow across the device, results in a typical line to line inductance of around 100pH, with a corresponding line to ground inductance of 50pH.

The Balanced Line EMI chip satisfies the need for high speed communications systems using balanced lines or twisted pairs offering low inductance (therefore high frequency operation), reduced board space, reduced component count and an unparalleled performance.

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Ordering Information									
1206	J 100	0222	Μ	X	т	E03			
Chip Size Reference J = Nic Bar	Nation         Voltage           ikel         016 = 16 volts           025 = 25 volts         050 = 50 volts           100 = 100 volts         100 = 100 volts	Capacitance Expressed in picofarads (pF). First digit is 0. Second and third digits are significant figures of capacitance code. The fourth digit is number of zeros following. Example: 0222=2200pF.	Tolerance M= ±20%	Dielectric C = COG X = X7R	Packaging T = 178mm (7") reel R = 330mm (13") reel B = Bulk	Balanced Line EMI Chip			



 Technical and application papers are available on request from the Sales Office.

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