



**THE DATASHEET OF  
HM78D-7556R8MLFTR**



# Shielded Surface Mount Coupled Inductors

MODELS HM78D-128XXXXLF, HM78D-755XXXXMLF

- Operating Temperature Range -40°C to +125°C
- Temperature Rise, Maximum 40°C
- Operating Frequency Up to 3MHz
- RoHS Compliant



## Electrical Schematic



## Specifications @ 25°C

| Part Number     | Parallel Connection      |                 |                                        |                                        | Series Connection        |                 |                                        |                                        |
|-----------------|--------------------------|-----------------|----------------------------------------|----------------------------------------|--------------------------|-----------------|----------------------------------------|----------------------------------------|
|                 | L <sup>(1)</sup><br>(μH) | DCR Max.<br>(Ω) | I <sub>sat</sub> <sup>(2)</sup><br>(A) | I <sub>rms</sub> <sup>(3)</sup><br>(A) | L <sup>(1)</sup><br>(μH) | DCR Max.<br>(Ω) | I <sub>sat</sub> <sup>(2)</sup><br>(A) | I <sub>rms</sub> <sup>(3)</sup><br>(A) |
| HM78D-1284R7MLF | 4.7 ± 20%                | 0.019           | 14.90                                  | 7.40                                   | 18.8 ± 25%               | 0.076           | 7.70                                   | 3.60                                   |
| HM78D-1285R6MLF | 5.6 ± 20%                | 0.023           | 13.40                                  | 7.20                                   | 22.4 ± 25%               | 0.092           | 6.60                                   | 3.50                                   |
| HM78D-1286R8MLF | 6.8 ± 20%                | 0.024           | 13.10                                  | 6.90                                   | 27.2 ± 25%               | 0.096           | 6.40                                   | 3.40                                   |
| HM78D-1288R2MLF | 8.2 ± 20%                | 0.025           | 10.80                                  | 6.60                                   | 32.8 ± 25%               | 0.100           | 5.60                                   | 3.30                                   |
| HM78D-128100MLF | 10 ± 20%                 | 0.029           | 10.50                                  | 6.20                                   | 40 ± 25%                 | 0.116           | 5.40                                   | 3.20                                   |
| HM78D-128120MLF | 12 ± 20%                 | 0.031           | 9.60                                   | 6.00                                   | 48 ± 25%                 | 0.124           | 4.80                                   | 2.90                                   |
| HM78D-128150MLF | 15 ± 20%                 | 0.036           | 9.10                                   | 5.80                                   | 60 ± 25%                 | 0.144           | 4.30                                   | 2.70                                   |
| HM78D-128180MLF | 18 ± 20%                 | 0.040           | 8.00                                   | 5.50                                   | 72 ± 25%                 | 0.158           | 3.90                                   | 2.50                                   |
| HM78D-128220MLF | 22 ± 20%                 | 0.048           | 6.80                                   | 5.20                                   | 88 ± 25%                 | 0.190           | 3.50                                   | 2.20                                   |
| HM78D-128270MLF | 27 ± 20%                 | 0.060           | 6.50                                   | 4.70                                   | 108 ± 25%                | 0.240           | 3.40                                   | 2.00                                   |
| HM78D-128330MLF | 33 ± 20%                 | 0.075           | 5.60                                   | 4.20                                   | 132 ± 25%                | 0.300           | 3.10                                   | 1.70                                   |
| HM78D-128390MLF | 39 ± 20%                 | 0.080           | 5.50                                   | 3.60                                   | 156 ± 25%                | 0.320           | 2.80                                   | 1.60                                   |
| HM78D-128470MLF | 47 ± 20%                 | 0.090           | 5.20                                   | 3.00                                   | 188 ± 25%                | 0.360           | 2.60                                   | 1.50                                   |
| HM78D-128560MLF | 56 ± 20%                 | 0.095           | 4.50                                   | 2.80                                   | 224 ± 25%                | 0.380           | 2.40                                   | 1.40                                   |
| HM78D-128680MLF | 68 ± 20%                 | 0.105           | 4.10                                   | 2.60                                   | 272 ± 25%                | 0.420           | 2.10                                   | 1.30                                   |
| HM78D-128820MLF | 82 ± 20%                 | 0.140           | 3.80                                   | 2.30                                   | 328 ± 25%                | 0.560           | 1.90                                   | 1.20                                   |
| HM78D-128101MLF | 100 ± 20%                | 0.150           | 3.40                                   | 2.00                                   | 400 ± 25%                | 0.600           | 1.70                                   | 1.10                                   |
| HM78D-128121KLF | 120 ± 10%                | 0.205           | 3.20                                   | 1.90                                   | 480 ± 25%                | 0.820           | 1.60                                   | 1.00                                   |
| HM78D-128151KLF | 150 ± 10%                | 0.230           | 2.80                                   | 1.80                                   | 600 ± 25%                | 0.920           | 1.40                                   | 0.89                                   |
| HM78D-128181KLF | 180 ± 10%                | 0.255           | 2.50                                   | 1.70                                   | 720 ± 25%                | 1.02            | 1.30                                   | 0.84                                   |
| HM78D-128221KLF | 220 ± 10%                | 0.345           | 2.30                                   | 1.60                                   | 880 ± 25%                | 1.38            | 1.10                                   | 0.75                                   |
| HM78D-128271KLF | 270 ± 10%                | 0.450           | 2.10                                   | 1.50                                   | 1080 ± 25%               | 1.80            | 1.00                                   | 0.71                                   |
| HM78D-128331KLF | 330 ± 10%                | 0.510           | 1.90                                   | 1.30                                   | 1320 ± 25%               | 2.04            | 0.92                                   | 0.62                                   |
| HM78D-128391KLF | 390 ± 10%                | 0.560           | 1.70                                   | 1.10                                   | 1560 ± 25%               | 2.24            | 0.84                                   | 0.53                                   |
| HM78D-128471KLF | 470 ± 10%                | 0.765           | 1.60                                   | 0.87                                   | 1880 ± 25%               | 3.06            | 0.80                                   | 0.43                                   |
| HM78D-128561KLF | 560 ± 10%                | 0.845           | 1.50                                   | 0.83                                   | 2240 ± 25%               | 3.38            | 0.73                                   | 0.40                                   |
| HM78D-128681KLF | 680 ± 10%                | 1.145           | 1.30                                   | 0.76                                   | 2720 ± 25%               | 4.58            | 0.63                                   | 0.36                                   |
| HM78D-128821KLF | 820 ± 10%                | 1.275           | 1.20                                   | 0.69                                   | 4000 ± 30%               | 5.10            | 0.58                                   | 0.33                                   |
| HM78D-128102KLF | 1000 ± 10%               | 1.415           | 1.10                                   | 0.60                                   | 4800 ± 30%               | 5.66            | 0.56                                   | 0.30                                   |
| HM78D-755R33MLF | 0.33 ± 20%               | 0.012           | 18.4                                   | 6.20                                   | 1.176 ± 20%              | 0.045           | 9.18                                   | 3.10                                   |
| HM78D-7551R0MLF | 1.0 ± 20%                | 0.016           | 10.2                                   | 5.33                                   | 3.808 ± 20%              | 0.073           | 5.10                                   | 2.66                                   |
| HM78D-7551R5MLF | 1.5 ± 20%                | 0.024           | 8.35                                   | 4.96                                   | 5.688 ± 20%              | 0.104           | 4.17                                   | 2.48                                   |
| HM78D-7552R2MLF | 2.2 ± 20%                | 0.025           | 7.06                                   | 4.66                                   | 7.944 ± 20%              | 0.103           | 3.53                                   | 2.33                                   |
| HM78D-7553R3MLF | 3.3 ± 20%                | 0.034           | 5.40                                   | 3.94                                   | 13.58 ± 20%              | 0.141           | 2.70                                   | 1.97                                   |
| HM78D-7554R7MLF | 4.7 ± 20%                | 0.044           | 4.37                                   | 3.34                                   | 20.73 ± 20%              | 0.178           | 2.19                                   | 1.67                                   |

### General Note

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BI Technologies  
A-1445, Jalan Tanjung Api  
25050 Kuantan  
Pahang Darul Makmur  
Malaysia

Ph: +60 9 565 8888 Fax: +60 9 514 3555

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# Shielded Surface Mount Coupled Inductors

MODELS HM78D-128XXXXLF, HM78D-755XXXXMLF



## Specifications @ 25°C continued

| Parallel Connection |                       |              |                                     |                                     | Series Connection     |              |                                     |                                     |
|---------------------|-----------------------|--------------|-------------------------------------|-------------------------------------|-----------------------|--------------|-------------------------------------|-------------------------------------|
| Part Number         | L <sup>(1)</sup> (μH) | DCR Max. (Ω) | I <sub>sat</sub> <sup>(2)</sup> (A) | I <sub>rms</sub> <sup>(3)</sup> (A) | L <sup>(1)</sup> (μH) | DCR Max. (Ω) | I <sub>sat</sub> <sup>(2)</sup> (A) | I <sub>rms</sub> <sup>(3)</sup> (A) |
| HM78D-7556R8MLF     | 6.8 ± 20%             | 0.061        | 3.67                                | 2.60                                | 29.38 ± 20%           | 0.252        | 1.84                                | 1.30                                |
| HM78D-7558R2MLF     | 8.2 ± 20%             | 0.070        | 3.40                                | 2.53                                | 34.26 ± 20%           | 0.288        | 1.70                                | 1.27                                |
| HM78D-755100MLF     | 10 ± 20%              | 0.082        | 3.17                                | 2.41                                | 39.53 ± 20%           | 0.332        | 1.58                                | 1.20                                |
| HM78D-755150MLF     | 15 ± 20%              | 0.112        | 2.48                                | 2.11                                | 64.36 ± 20%           | 0.462        | 1.24                                | 1.05                                |
| HM78D-755220MLF     | 22 ± 20%              | 0.156        | 2.13                                | 1.75                                | 86.92 ± 20%           | 0.625        | 1.07                                | 0.874                               |
| HM78D-755330MLF     | 33 ± 20%              | 0.223        | 1.73                                | 1.41                                | 132 ± 20%             | 0.454        | 0.87                                | 0.702                               |
| HM78D-755470MLF     | 47 ± 20%              | 0.360        | 1.41                                | 1.15                                | 198.6 ± 20%           | 1.453        | 0.71                                | 0.573                               |
| HM78D-755680MLF     | 68 ± 20%              | 0.434        | 1.19                                | 1.03                                | 278.7 ± 20%           | 1.755        | 0.60                                | 0.517                               |
| HM78D-755820MLF     | 82 ± 20%              | 0.510        | 1.11                                | 0.91                                | 323.8 ± 20%           | 2.060        | 0.55                                | 0.453                               |
| HM78D-755101MLF     | 100 ± 20%             | 0.624        | 0.99                                | 0.86                                | 406.4 ± 20%           | 2.502        | 0.49                                | 0.430                               |
| HM78D-755151MLF     | 150 ± 20%             | 0.934        | 0.81                                | 0.69                                | 600 ± 20%             | 3.748        | 0.41                                | 0.346                               |
| HM78D-755221MLF     | 220 ± 20%             | 1.526        | 0.66                                | 0.56                                | 908 ± 20%             | 6.111        | 0.33                                | 0.279                               |
| HM78D-755331MLF     | 330 ± 20%             | 1.932        | 0.54                                | 0.45                                | 1342 ± 20%            | 7.726        | 0.27                                | 0.224                               |
| HM78D-755471MLF     | 470 ± 20%             | 3.044        | 0.46                                | 0.40                                | 1861 ± 20%            | 12.312       | 0.23                                | 0.202                               |
| HM78D-755681MLF     | 680 ± 20%             | 4.807        | 0.38                                | 0.33                                | 2685 ± 20%            | 19.542       | 0.19                                | 0.166                               |
| HM78D-755821MLF     | 820 ± 20%             | 5.343        | 0.35                                | 0.31                                | 3251 ± 20%            | 21.453       | 0.17                                | 0.156                               |
| HM78D-755102MLF     | 1000 ± 20%            | 6.094        | 0.31                                | 0.27                                | 4036 ± 20%            | 24.57        | 0.16                                | 0.135                               |

- Notes: (1) Inductance is measured at 100 kHz, 0.1Vrms without DC current.  
 (2) I<sub>sat</sub> is the saturation current at which inductance rolls off approximately 30% from its initial (zero DC) value.  
 (3) I<sub>rms</sub> is the approximate current at which ΔT = 40°C.

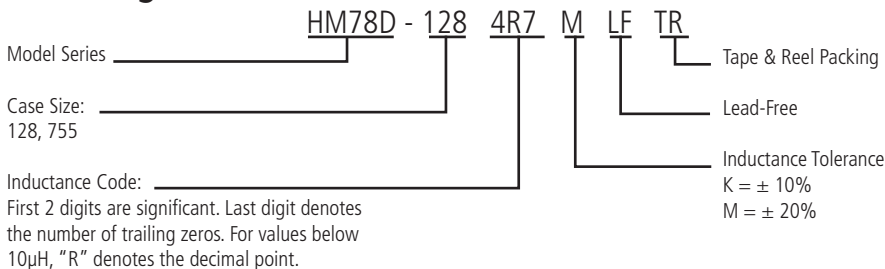
## Outline Dimensions (mm)

| Case Size | A    | B    | C    | D   | E   | F    | G    | H   | I   | J   | K   | L    | M   | N   | P   | Q   | R   | S   |
|-----------|------|------|------|-----|-----|------|------|-----|-----|-----|-----|------|-----|-----|-----|-----|-----|-----|
| 128       | 12.5 | 12.5 | 8.05 | 7.0 | 5.0 | 2.5  | 1.7  | 4.2 | 5.5 | 4.5 | 2.0 | 12.8 | 4.2 | 4.5 | 2.0 | 4.2 | 5.5 | 4.5 |
| 755       | 7.7  | 7.7  | 4.8  | 4.1 | 2.7 | 1.45 | 0.80 | 2.2 | 2.8 | 3.1 | 1.0 | 7.5  | 2.2 | 3.1 | 1.0 | 2.2 | 2.8 | 3.1 |

## Packaging

|           |                        |                                                          |
|-----------|------------------------|----------------------------------------------------------|
| Standard: | Embossed Tape and Reel |                                                          |
|           | Reel:                  | Diameter: = 13" (330.2mm)                                |
|           | Capacity:              | Case size 128 = 500 Units<br>Case size 755 = 1,000 Units |

## Ordering Information



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