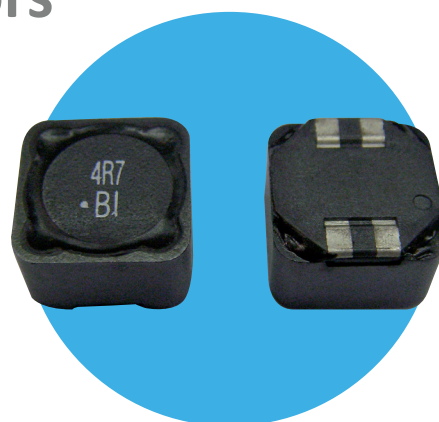


## Shielded Surface Mount Inductors

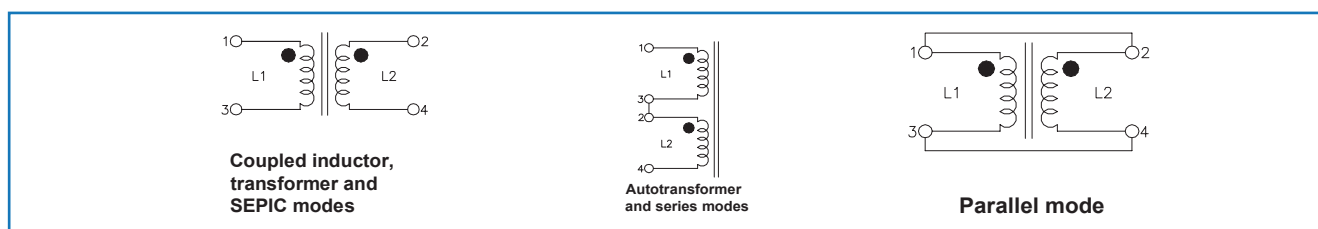
MODELS HM78D1210XXXMLF

### Features

- Operating Temperature Range -40°C to +125°C
- Temperature Rise, Maximum 40°C
- Ideal for SEPIC applications, high inductance, high efficiency and excellent current handling in rugged, low cost part
- Use as DC-DC converter and in applications like hand phones, CD/DVD player, digital camera, GPS system. Also used as two single inductors connected series or parallel or as 1:1 transformer
- RoHS Compliant



### Electrical Schematic

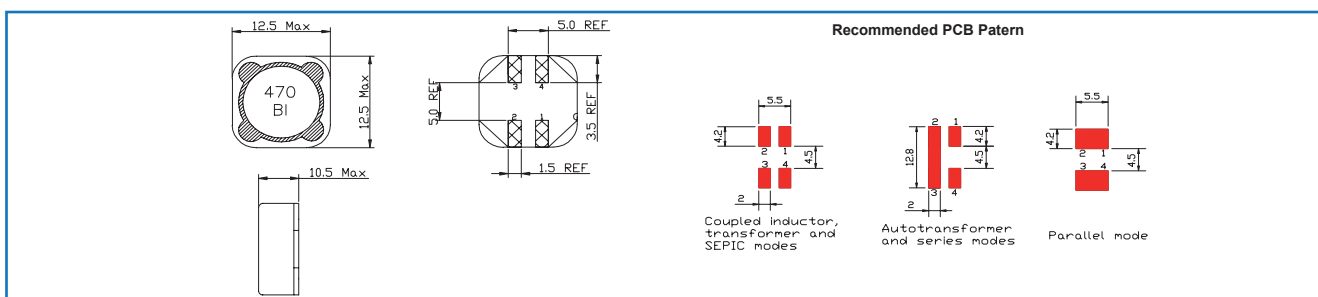


### Specifications @ 25°C

| Leads connected in parallel |            |             |                        |                      |                      | Leads connected in series |             |                        |                      |                      |
|-----------------------------|------------|-------------|------------------------|----------------------|----------------------|---------------------------|-------------|------------------------|----------------------|----------------------|
| Part Number                 | L (μH)     | DCR Max (Ω) | I <sub>rated</sub> (A) | I <sub>sat</sub> (A) | I <sub>rms</sub> (A) | L (μH)                    | DCR Max (Ω) | I <sub>rated</sub> (A) | I <sub>sat</sub> (A) | I <sub>rms</sub> (A) |
| HM78D-12104R7MLF            | 4.70±20%   | 0.014       | 10.60                  | 18.00                | 3.250                | 18.80±25%                 | 0.056       | 5.30                   | 9.00                 | 1.625                |
| HM78D-12106R8MLF            | 6.80±20%   | 0.017       | 10.40                  | 14.20                | 3.100                | 27.20±25%                 | 0.068       | 5.20                   | 7.10                 | 1.550                |
| HM78D-12108R2MLF            | 8.20±20%   | 0.018       | 9.50                   | 12.85                | 2.250                | 32.80±25%                 | 0.072       | 4.75                   | 6.45                 | 1.125                |
| HM78D-1210100MLF            | 10.00±20%  | 0.020       | 8.60                   | 11.75                | 3.200                | 41.12±25%                 | 0.080       | 4.30                   | 5.85                 | 1.600                |
| HM78D-1210220MLF            | 22.00±20%  | 0.040       | 5.40                   | 8.20                 | 2.700                | 88.00±25%                 | 0.160       | 2.70                   | 4.10                 | 1.350                |
| HM78D-1210330MLF            | 33.00±20%  | 0.050       | 4.50                   | 6.60                 | 2.000                | 132.00±25%                | 0.200       | 2.25                   | 3.30                 | 1.000                |
| HM78D-1210470MLF            | 47.00±20%  | 0.065       | 3.70                   | 5.50                 | 1.900                | 188.00±25%                | 0.260       | 1.85                   | 2.75                 | 0.950                |
| HM78D-1210560MLF            | 56.00±20%  | 0.081       | 3.28                   | 4.90                 | 0.850                | 224.00±25%                | 0.324       | 1.64                   | 2.45                 | 0.425                |
| HM78D-1210680MLF            | 68.00±20%  | 0.098       | 2.96                   | 4.45                 | 0.800                | 272.00±25%                | 0.392       | 1.48                   | 2.20                 | 0.400                |
| HM78D-1210101MLF            | 100.00±20% | 0.128       | 2.54                   | 3.70                 | 0.700                | 400.00±25%                | 0.512       | 1.27                   | 1.85                 | 0.350                |
| HM78D-1210121MLF            | 120.00±20% | 0.170       | 2.38                   | 3.40                 | 0.630                | 480.00±25%                | 0.680       | 1.19                   | 1.70                 | 0.315                |
| HM78D-1210331MLF            | 330.00±20% | 0.440       | 1.32                   | 2.10                 | 0.410                | 1320.00±25%               | 1.760       | 0.66                   | 1.05                 | 0.205                |
| HM78D-1210471MLF            | 470.00±20% | 0.570       | 1.22                   | 1.80                 | 0.300                | 1880.00±25%               | 2.280       | 0.61                   | 0.90                 | 0.150                |

Notes : (1) Inductance is measured at 100kHz, 0.1Vrms, 0Adc.  
 (2) When leads connected in parallel, DCR is half the value.  
 (3) I<sub>sat</sub> current is the saturation current at which inductance rolls off approximately 30% from its initial (zero DC) value.  
 (4) I<sub>rms</sub> equals DC current, that causes component to increase by 40°C from 25°C ambient.  
 (5) I<sub>rated</sub> current is the rated current at which inductance rolls off approximately 10% from its initial (zero DC) value.

### Mechanical Outline (mm)



### General Note

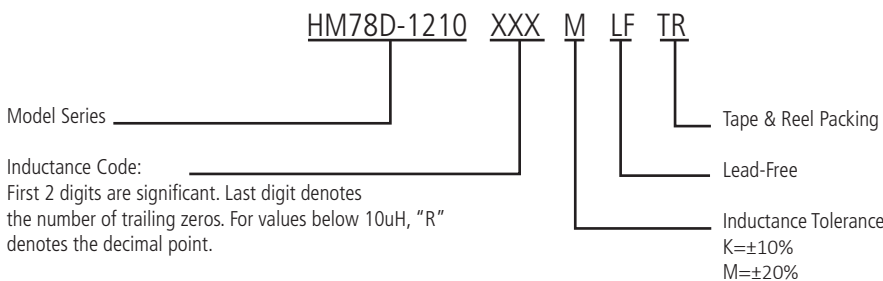
TT Electronics reserves the right to make changes in product specification without notice or liability.  
 All information is subject to TT Electronics' own data and is considered accurate at time of going to print.

## Packaging

- 1) Tape and reel packaging.

2) 300pcs per 13" reel.

## Ordering Information



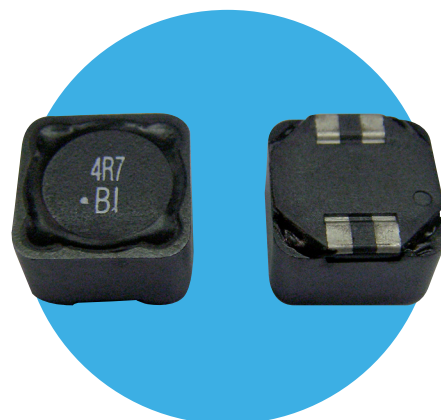
### General Note

TT Electronics reserves the right to make changes in product specification without notice or liability.  
All information is subject to TT Electronics' own data and is considered accurate at time of going to print.

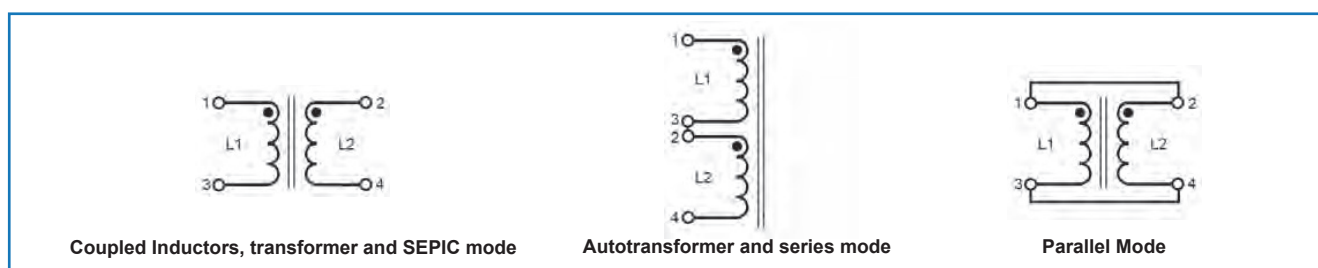
# Shielded Surface Mount Coupled Inductors

MODELS HM78D-128XXXXLF, HM78D-755XXXMLF

- 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

| Parallel Connection |                          |                                |                                        |                                        | Series Connection        |                                |                                        |                                        |
|---------------------|--------------------------|--------------------------------|----------------------------------------|----------------------------------------|--------------------------|--------------------------------|----------------------------------------|----------------------------------------|
| Part Number         | L <sup>(1)</sup><br>(μH) | DCR Typ. <sup>(2)</sup><br>(Ω) | I <sub>sat</sub> <sup>(3)</sup><br>(A) | I <sub>rms</sub> <sup>(4)</sup><br>(A) | L <sup>(1)</sup><br>(μH) | DCR Typ. <sup>(2)</sup><br>(Ω) | I <sub>sat</sub> <sup>(3)</sup><br>(A) | I <sub>rms</sub> <sup>(4)</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%               | 0.0074                         | 18.4                                   | 0.620                                  | 1.176 ± 20%              | 0.0295                         | 9.18                                   | 3.10                                   |
| HM78D-7551R0MLF     | 1.0 ± 20%                | 0.0100                         | 10.20                                  | 5.33                                   | 3.808 ± 20%              | 0.0400                         | 5.10                                   | 2.66                                   |
| HM78D-7551R5MLF     | 1.5 ± 20%                | 0.0115                         | 8.35                                   | 4.96                                   | 5.688 ± 20%              | 0.0461                         | 4.17                                   | 2.48                                   |
| HM78D-7552R2MLF     | 2.2 ± 20%                | 0.0130                         | 7.06                                   | 4.66                                   | 7.944 ± 20%              | 0.0521                         | 3.53                                   | 2.33                                   |
| HM78D-7553R3MLF     | 3.3 ± 20%                | 0.0183                         | 5.40                                   | 3.94                                   | 13.58 ± 20%              | 0.0732                         | 2.70                                   | 1.97                                   |
| HM78D-7554R7MLF     | 4.7 ± 20%                | 0.0254                         | 4.37                                   | 3.34                                   | 20.73 ± 20%              | 0.102                          | 2.19                                   | 1.67                                   |

### General Note

TT Electronics reserves the right to make changes in product specification without notice or liability.

All information is subject to TT Electronics' own data and is considered accurate at time of going to print.

## Specifications @ 25°C continued

| Parallel Connection |                          |                                |                                        |                                        | Series Connection        |                                |                                        |                                        |
|---------------------|--------------------------|--------------------------------|----------------------------------------|----------------------------------------|--------------------------|--------------------------------|----------------------------------------|----------------------------------------|
| Part Number         | L <sup>(1)</sup><br>(μH) | DCR Typ. <sup>(2)</sup><br>(Ω) | I <sub>sat</sub> <sup>(3)</sup><br>(A) | I <sub>rms</sub> <sup>(4)</sup><br>(A) | L <sup>(1)</sup><br>(μH) | DCR Typ. <sup>(2)</sup><br>(Ω) | I <sub>sat</sub> <sup>(3)</sup><br>(A) | I <sub>rms</sub> <sup>(4)</sup><br>(A) |
| HM78D-7556R8MLF     | 6.8 ± 20%                | 0.0418                         | 3.67                                   | 2.60                                   | 29.38 ± 20%              | 0.167                          | 1.84                                   | 1.30                                   |
| HM78D-7558R2MLF     | 8.2 ± 20%                | 0.0441                         | 3.40                                   | 2.53                                   | 34.26 ± 20%              | 0.177                          | 1.70                                   | 1.27                                   |
| HM78D-755100MLF     | 10 ± 20%                 | 0.0489                         | 3.17                                   | 2.41                                   | 39.53 ± 20%              | 0.196                          | 1.58                                   | 1.20                                   |
| HM78D-755150MLF     | 15 ± 20%                 | 0.0637                         | 2.48                                   | 2.11                                   | 64.36 ± 20%              | 0.255                          | 1.24                                   | 1.05                                   |
| HM78D-755220MLF     | 22 ± 20%                 | 0.0925                         | 2.13                                   | 1.75                                   | 86.92 ± 20%              | 0.371                          | 1.07                                   | 0.874                                  |
| HM78D-755330MLF     | 33 ± 20%                 | 0.143                          | 1.73                                   | 1.41                                   | 132 ± 20%                | 0.574                          | 0.87                                   | 0.702                                  |
| HM78D-755470MLF     | 47 ± 20%                 | 0.216                          | 1.41                                   | 1.15                                   | 198.6 ± 20%              | 0.865                          | 0.71                                   | 0.573                                  |
| HM78D-755680MLF     | 68 ± 20%                 | 0.265                          | 1.19                                   | 1.03                                   | 278.7 ± 20%              | 1.06                           | 0.60                                   | 0.517                                  |
| HM78D-755820MLF     | 82 ± 20%                 | 0.345                          | 1.11                                   | 0.91                                   | 323.8 ± 20%              | 1.38                           | 0.55                                   | 0.453                                  |
| HM78D-755101MLF     | 100 ± 20%                | 0.383                          | 0.99                                   | 0.86                                   | 406.4 ± 20%              | 1.53                           | 0.49                                   | 0.430                                  |
| HM78D-755151MLF     | 150 ± 20%                | 0.591                          | 0.81                                   | 0.69                                   | 600 ± 20%                | 2.37                           | 0.41                                   | 0.346                                  |
| HM78D-755221MLF     | 220 ± 20%                | 0.907                          | 0.66                                   | 0.56                                   | 908 ± 20%                | 3.63                           | 0.33                                   | 0.279                                  |
| HM78D-755331MLF     | 330 ± 20%                | 1.41                           | 0.54                                   | 0.45                                   | 1342 ± 20%               | 5.66                           | 0.27                                   | 0.224                                  |
| HM78D-755471MLF     | 470 ± 20%                | 1.74                           | 0.46                                   | 0.40                                   | 1861 ± 20%               | 6.97                           | 0.23                                   | 0.202                                  |
| HM78D-755681MLF     | 680 ± 20%                | 2.58                           | 0.38                                   | 0.33                                   | 2685 ± 20%               | 10.30                          | 0.19                                   | 0.166                                  |
| HM78D-755821MLF     | 820 ± 20%                | 2.93                           | 0.35                                   | 0.31                                   | 3251 ± 20%               | 11.70                          | 0.17                                   | 0.156                                  |
| HM78D-755102MLF     | 1000 ± 20%               | 3.89                           | 0.31                                   | 0.27                                   | 4036 ± 20%               | 15.60                          | 0.16                                   | 0.135                                  |

- Notes: (1) Inductance is measured at 100 kHz, 0.1Vrms without DC current.  
(2) DCR Typ. is only for 755 series while 128 series is of DCR Max.  
(3) I<sub>sat</sub> is the saturation current at which inductance rolls off approximately 30% from its initial (zero DC) value.  
(4) I<sub>rms</sub> is the approximate current at which ΔT = 40°C.

## Outline Dimensions (mm)

| Top View  |      | Side View |      | Bottom View |     | Recommended Solder Pad Layout |      |     |     |     |     |      |     |     |     |     |     |     |
|-----------|------|-----------|------|-------------|-----|-------------------------------|------|-----|-----|-----|-----|------|-----|-----|-----|-----|-----|-----|
|           |      |           |      |             |     |                               |      |     |     |     |     |      |     |     |     |     |     |     |
| 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 | 5.0         | 5.0 | 3.5                           | 1.5  | 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  | 3.9         | 2.7 | 1.55                          | 0.72 | 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:     |  |  |  |  |  |  |  |  |  | = 500 Units     |  |  |  |  |  |  |
|           |                        | Case size 755 |  |  |  |  |  |  |  |  |  | = 1,000 Units   |  |  |  |  |  |  |

## Ordering Information

|                                                                                                                                        |             |     |   |    |    |                                                |
|----------------------------------------------------------------------------------------------------------------------------------------|-------------|-----|---|----|----|------------------------------------------------|
| Model Series                                                                                                                           | HM78D - 128 | 4R7 | M | LF | TR | Tape & Reel Packing                            |
| Case Size:                                                                                                                             | 128, 755    |     |   |    |    | Lead-Free                                      |
| Inductance Code:                                                                                                                       |             |     |   |    |    | Inductance Tolerance<br>K = ± 10%<br>M = ± 20% |
| First 2 digits are significant. Last digit denotes the number of trailing zeros. For values below 10μH, "R" denotes the decimal point. |             |     |   |    |    |                                                |

### General Note

TT Electronics reserves the right to make changes in product specification without notice or liability.  
All information is subject to TT Electronics' own data and is considered accurate at time of going to print.

## Данный компонент на территории Российской Федерации

**Вы можете приобрести в компании MosChip.**

Для оперативного оформления запроса Вам необходимо перейти по данной ссылке:

<http://moschip.ru/get-element>

Вы можете разместить у нас заказ для любого Вашего проекта, будь то серийное производство или разработка единичного прибора.

В нашем ассортименте представлены ведущие мировые производители активных и пассивных электронных компонентов.

Нашей специализацией является поставка электронной компонентной базы двойного назначения, продукции таких производителей как XILINX, Intel (ex.ALTERA), Vicor, Microchip, Texas Instruments, Analog Devices, Mini-Circuits, Amphenol, Glenair.

Сотрудничество с глобальными дистрибьюторами электронных компонентов, предоставляет возможность заказывать и получать с международных складов практически любой перечень компонентов в оптимальные для Вас сроки.

На всех этапах разработки и производства наши партнеры могут получить квалифицированную поддержку опытных инженеров.

Система менеджмента качества компании отвечает требованиям в соответствии с ГОСТ Р ИСО 9001, ГОСТ РВ 0015-002 и ЭС РД 009

### Офис по работе с юридическими лицами:

105318, г.Москва, ул.Щербаковская д.3, офис 1107, 1118, ДЦ «Щербаковский»

Телефон: +7 495 668-12-70 (многоканальный)

Факс: +7 495 668-12-70 (доб.304)

E-mail: [info@moschip.ru](mailto:info@moschip.ru)

Skype отдела продаж:

moschip.ru

moschip.ru\_4

moschip.ru\_6

moschip.ru\_9