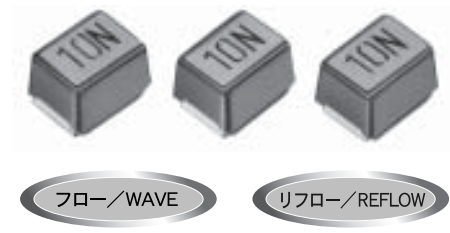


# 巻線チップインダクタ

## WOUND CHIP INDUCTORS

### LE SERIES M TYPE

|                 |           |
|-----------------|-----------|
| OPERATING TEMP. | -40~+85°C |
|-----------------|-----------|



### 特長 FEATURES

- ・アキシアルリード形インダクタの製造工程・基本構造を継承した量産性に優れた高品質のインダクタ
- ・耐熱樹脂成形による優れた耐熱性と機械的強度を有したインダクタ
- ・ A high-quality inductor that is simple to mass-produce and conforms to the same production process and basic construction as an axial lead type inductor.
- ・ Constructed of heat-resistant molded resin having excellent heat resistance and mechanical strength.

### 用途 APPLICATIONS

VTRカメラ、HDD、FDD、液晶TV、カーオーディオ、移動体通信、その他小型電子機器一般

Video cameras, hard disk drives, floppy disk drives, liquid crystal television sets, car audio equipment, mobile communications and other small-sized general electronic appliances.

### 形名表記法 ORDERING CODE

|   |   |   |  |
|---|---|---|--|
| <b>1</b><br>形式<br>LE 巻線チップインダクタ                               | <b>3</b><br>外径寸法 (mm)<br>2520(1008) 2.5×2.0<br>3225(1210) 3.2×2.5 | <b>5</b><br>公称インダクタンス (μH)<br>例<br>10N 0.010<br>R10 0.1<br>1R0 1<br>101 100<br>※R=小数点<br>※N=nHとしての小数点 | <b>6</b><br>インダクタンス許容差 (%)<br>J ±5<br>K ±10<br>M ±20 |
| <b>2</b><br>形状<br>M△ 角形<br>MC 角形/大電流<br>MF 角形/低 Rdc<br>△=スペース | <b>4</b><br>包装<br>B△ 単品<br>T△ テーピング<br>△=スペース                     | <b>7</b><br>当社管理記号<br>△△△△ 標準品<br>△=スペース  |  |



|   |  |  |   |
|---|--|--|---|
| <b>1</b><br>Type<br>LE Wound chip inductor  | <b>3</b><br>External Dimensions (mm)<br>2520(1008) 2.5×2.0<br>3225(1210) 3.2×2.5 | <b>5</b><br>Nominal Inductance(μH)<br>example<br>10N 0.010<br>R10 0.1<br>1R0 1<br>101 100<br>*R=decimal point<br>*N=0.0(nH type) | <b>6</b><br>Inductance Tolerances (%)<br>J ±5<br>K ±10<br>M ±20 |
| <b>2</b><br>Shape<br>M△ Rectangular Type<br>M C Rectangular / High current Type<br>M F Rectangular / Low Rdc<br>△=Blank space | <b>4</b><br>Packaging<br>B△ Bulk<br>T△ Tape & Reel<br>△=Blank space              | <b>7</b><br>Internal code<br>△△△△ Standard Products<br>△=Blank space   |   |

# 外形寸法 EXTERNAL DIMENSIONS

| Type | LEM2520/LEM2520/LEMF2520 (1008) | LEM2520/LEM2520/LEMF2520 (1008) | LEM2520/LEM2520/LEMF2520 (1008) | LEM2520/LEM2520/LEMF2520 (1008) | LEM2520/LEM2520/LEMF2520 (1008) | LEM2520/LEM2520/LEMF2520 (1008) | LEM2520/LEM2520/LEMF2520 (1008) | LEM2520/LEM2520/LEMF2520 (1008) | LEM2520/LEM2520/LEMF2520 (1008) | LEM2520/LEM2520/LEMF2520 (1008) | LEM2520/LEM2520/LEMF2520 (1008) |  |
|------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|--|
| Fig. |                                 |                                 |                                 |                                 |                                 |                                 |                                 |                                 |                                 |                                 |                                 |  |
| L    | 2.5±0.2<br>(0.098±0.008)        |                                 |                                 |                                 |                                 |                                 | 3.2±0.2<br>(0.126±0.008)        |                                 |                                 |                                 |                                 |  |
| W    | 2.0±0.2<br>(0.079±0.008)        |                                 |                                 |                                 |                                 |                                 | 2.5±0.2<br>(0.098±0.008)        |                                 |                                 |                                 |                                 |  |
| H    | 1.8±0.2<br>(0.071±0.008)        |                                 |                                 |                                 |                                 |                                 | 2.2±0.2<br>(0.087±0.008)        |                                 |                                 |                                 |                                 |  |
| a    | 0.45<br>(0.018)                 |                                 |                                 |                                 |                                 |                                 | 0.45<br>(0.018)                 |                                 |                                 |                                 |                                 |  |
| w    | 1.4±0.1<br>(0.055±0.004)        |                                 |                                 |                                 |                                 |                                 | 1.9±0.1<br>(0.075±0.004)        |                                 |                                 |                                 |                                 |  |

Unit : mm(inch)

# 概略バリエーション AVAILABLE INDUCTANCE RANGE

| Range   |                 | Type | LEM2520               | LEM2520                | LEMF2520              | LEMF2520            | LEM2520               | LEM2520             | LEM2520               | LEM2520             | LEM2520               |                     |              |
|---|-----------------|------|-----------------------|------------------------|-----------------------|---------------------|-----------------------|---------------------|-----------------------|---------------------|-----------------------|---------------------|--------------|
|   |                 |      | I <sub>max</sub> [mA] | R <sub>dc</sub> max[Ω] | I <sub>max</sub> [mA] | R <sub>dc</sub> [Ω] | I <sub>max</sub> [mA] | R <sub>dc</sub> [Ω] | I <sub>max</sub> [mA] | R <sub>dc</sub> [Ω] | I <sub>max</sub> [mA] | R <sub>dc</sub> [Ω] |              |
| 高周波タイプ<br>High frequency                        | Inductance [nH] | 10   | 530                   | 10nH                   | 0.26                  |                     |                       |                     |                       |                     |                       |                     |              |
|   |                 | 100  | 280                   |                        | 0.80                  |                     |                       |                     |                       |                     |                       |                     |              |
| 一般タイプ/大電流タイプ<br>Ordinary type/High Current type | Inductance [μH] | 1.0  | 245                   | 1.10                   | 475                   | 1.0μH               | 0.25<br>±30%          | 455                 | 1.0μH                 | 0.13<br>±30%        | 850                   | 1.0μH               | 0.1<br>±30%  |
|   |                 | 10   | 155                   | 3.50                   | 210                   | 1.5<br>±30%         | 33μH                  | 155                 | 0.5<br>±30%           | 300                 | 0.41<br>±30%          | 165                 | 0.22<br>±30% |
|   |                 | 100  | 60                    | 21.00                  |                       |                     |                       | 40                  | 5.5<br>±30%           | 100                 | 4.3<br>±30%           | 55                  | 2.1<br>±30%  |
|   |                 |      |                       |                        |                       |                     |                       |                     |                       |                     |                       |                     |              |

| 代表値<br>Examples | inductance | I max [mA] | Rdc [Ω] | I max [mA] | Rdc [Ω]  | I max [mA] | Rdc [Ω]  | I max [mA] | Rdc [Ω]  | I max [mA] | Rdc [Ω]  |
|-----------------|------------|------------|---------|------------|----------|------------|----------|------------|----------|------------|----------|
|                 | 10nH       | 530        | 0.26    | —          | —        | —          | —        | —          | —        | —          | —        |
|                 | 100nH      | 280        | 0.80    | —          | —        | —          | —        | —          | —        | —          | —        |
|                 | 1μH        | 245        | 1.10    | 475        | 0.25±30% | 455        | 0.13±30% | 850        | 0.10±30% | 500        | 0.06±30% |
|                 | 10μH       | 155        | 3.50    | 210        | 1.5±30%  | 155        | 0.50±30% | 300        | 0.41±30% | 165        | 0.22±30% |
| 100μH           | 60         | 21.00      | —       | —          | 40       | 5.50±30%   | 100      | 4.30±30%   | 55       | 2.1±30%    |          |

セレクションガイド  
Selection Guide



etc

アイテム一覧  
Part Numbers



特性図  
Electrical Characteristics



梱包  
Packaging



信頼性  
Reliability Data



使用上の注意  
Precautions



LEM2520 TYPE

高周波タイプ High frequency type

| 形名<br>Ordering code | 公称<br>インダクタンス<br>Inductance<br>[nH] | インダクタンス<br>許容差<br>Inductance<br>Tolerance | Q<br>min. | LQ<br>測定<br>周波数<br>Measuring<br>frequency<br>[MHz] | Q<br>(参考値)<br>(Typical) |     |     |      |      | 自己共振周波数<br>Self-resonant<br>frequency<br>[MHz] |      | 直流抵抗<br>DC<br>Resistance<br>[Ω]<br>max. | 定格電流<br>Rated<br>current<br>[mA]<br>max. |
|---------------------|-------------------------------------|---|-----------|--|-------------------------|-----|-----|------|------|--|------|---|--|
|                     |                                     |   |           |  | 周波数 Frequency [MHz]     |     |     |      |      | min.   | typ. |   |  |
|                     |                                     |   |           |  | 100                     | 300 | 500 | 800  | 1000 |  |      |   |  |
| LEM2520□10NK        | 10                                  | ±10%                                      | 10        | 100  | 25                      | 37  | 45  | 52   | 57   | 2150   | 4300 | 0.26                                    | 530                                      |
| LEM2520□12NK        | 12                                  |   |           |  | 26                      | 38  | 45  | 52   | 54   | 2050   | 3900 | 0.27                                    | 500                                      |
| LEM2520□15NK        | 15                                  |   |           |  | 26                      | 38  | 46  | 51   | 51   | 1850   | 3500 | 0.31                                    | 480                                      |
| LEM2520□18NK        | 18                                  |   |           |  | 26                      | 40  | 48  | 52   | 51   | 1650   | 3100 | 0.34                                    | 450                                      |
| LEM2520□22NK        | 22                                  |   |           |  | 28                      | 43  | 51  | 56   | 50   | 1550   | 2700 | 0.38                                    | 420                                      |
| LEM2520□27NK        | 27                                  |   | 29        |  | 44                      | 50  | 51  | 48   | 1400 | 2450   | 0.42 | 410                                     |  |
| LEM2520□33NK        | 33                                  |   | 30        |  | 45                      | 51  | 50  | 43   | 1250 | 2200   | 0.46 | 400                                     |  |
| LEM2520□39NK        | 39                                  |   | 30        |  | 45                      | 50  | 39  | 42   | 1100 | 2000   | 0.50 | 380                                     |  |
| LEM2520□47NK        | 47                                  |   | 30        |  | 44                      | 48  | 43  | 35   | 1050 | 1800   | 0.56 | 360                                     |  |
| LEM2520□56NK        | 56                                  |   | 31        |  | 44                      | 42  | 35  | 25   | 950  | 1600   | 0.65 | 340                                     |  |
| LEM2520□68NK        | 68                                  | 31  | 41        | 38   | 27                      | 17  | 900 | 1500 | 0.70 | 320  |      |   |  |
| LEM2520□82NK        | 82                                  | 32  | 44        | 40   | 29                      | 17  | 850 | 1300 | 0.75 | 300  |      |   |  |
| LEM2520□R10K        | 100                                 |   | 20        |  | 32                      | 41  | 36  | 20   | 8    | 700  | 1200 | 0.80                                    | 280                                      |

・注：形名の□には包装記号が入ります。 □ Please specify the packaging code. (T: Tape & reel, B: Bulk)

一般タイプ Ordinary type

| 形名<br>Ordering code | 公称<br>インダクタンス<br>Inductance<br>[μH] | インダクタンス<br>許容差<br>Inductance<br>Tolerance | Q<br>min. | 測定<br>周波数<br>Measuring<br>frequency<br>[MHz] | 自己共振<br>周波数<br>Self-resonant<br>frequency<br>[MHz]<br>min. | 直流抵抗<br>DC<br>Resistance<br>[Ω]<br>max. | 定格電流<br>Rated current<br>[mA]<br>max. |
|---------------------|-------------------------------------|---|-----------|--|--|---|---------------------------------------|
| LEM2520□R12K        | 0.12                                | ±10%                                      | 30        | 25.2   | 600  | 0.37                                    | 520                                   |
| LEM2520□R15K        | 0.15                                |   |           |  | 550  | 0.42                                    | 480                                   |
| LEM2520□R18K        | 0.18                                |   |           |  | 500  | 0.46                                    | 460                                   |
| LEM2520□R22K        | 0.22                                |   |           |  | 450  | 0.52                                    | 430                                   |
| LEM2520□R27K        | 0.27                                |   |           |  | 425  | 0.56                                    | 420                                   |
| LEM2520□R33K        | 0.33                                |   |           |  | 400  | 0.60                                    | 400                                   |
| LEM2520□R39K        | 0.39                                |   |           |  | 375  | 0.65                                    | 375                                   |
| LEM2520□R47K        | 0.47                                |   |           |  | 350  | 0.68                                    | 350                                   |
| LEM2520□R56K        | 0.56                                |   |           |  | 300  | 0.75                                    | 325                                   |
| LEM2520□R68K        | 0.68                                |   |           |  | 270  | 0.85                                    | 300                                   |
| LEM2520□R82K        | 0.82                                | 250                                       | 1.00      | 260  |  |   |                                       |
| LEM2520□1R0J        | 1.0                                 | ±5%                                       | 25        | 7.96   | 220  | 1.10                                    | 245                                   |
| LEM2520□1R2J        | 1.2                                 |   |           |  | 180  | 1.20                                    | 230                                   |
| LEM2520□1R5J        | 1.5                                 |   |           |  | 135  | 1.30                                    | 220                                   |
| LEM2520□1R8J        | 1.8                                 |   |           |  | 100  | 1.45                                    | 210                                   |
| LEM2520□2R2J        | 2.2                                 |   |           |  | 75   | 1.55                                    | 200                                   |
| LEM2520□2R7J        | 2.7                                 |   |           |  | 55   | 1.70                                    | 195                                   |
| LEM2520□3R3J        | 3.3                                 |   |           |  | 48   | 1.90                                    | 185                                   |
| LEM2520□3R9J        | 3.9                                 |   |           |  | 43   | 2.10                                    | 180                                   |
| LEM2520□4R7J        | 4.7                                 |   |           |  | 40   | 2.30                                    | 175                                   |
| LEM2520□5R6J        | 5.6                                 |   |           |  | 36   | 2.50                                    | 170                                   |
| LEM2520□6R8J        | 6.8                                 | 33  | 2.70      | 165  |  |   |                                       |
| LEM2520□8R2J        | 8.2                                 | 30  | 3.05      | 160  |  |   |                                       |
| LEM2520□100J        | 10                                  | 20  | 15        | 0.796  | 27   | 3.50                                    | 155                                   |
| LEM2520□120J        | 12                                  |   |           |  | 23   | 3.80                                    | 150                                   |
| LEM2520□150J        | 15                                  |   |           |  | 20   | 4.40                                    | 140                                   |
| LEM2520□180J        | 18                                  |   |           |  | 18   | 4.80                                    | 130                                   |
| LEM2520□220J        | 22                                  |   |           |  | 17   | 5.50                                    | 125                                   |
| LEM2520□270J        | 27                                  |   |           |  | 16   | 6.30                                    | 115                                   |
| LEM2520□330J        | 33                                  |   |           |  | 15   | 7.10                                    | 110                                   |
| LEM2520□390J        | 39                                  |   |           |  | 14   | 9.50                                    | 90                                    |
| LEM2520□470J        | 47                                  |   |           |  | 13   | 11.10                                   | 80                                    |
| LEM2520□560J        | 56                                  |   |           |  | 12   | 12.10                                   | 75                                    |
| LEM2520□680J        | 68                                  | 11  | 16.60     | 70   |  |   |                                       |
| LEM2520□820J        | 82                                  | 10  | 19.00     | 65   |  |   |                                       |
| LEM2520□101J        | 100                                 |   |           | 9  | 21.00  | 60                                      |                                       |

・注：形名の□には包装記号が入ります。 □ Please specify the packaging code. (T: Tape & reel, B: Bulk)

LEMC2520 TYPE

大電流タイプ High current type

| 形名<br>Ordering code | 公称<br>インダクタンス<br>Inductance<br>[μH] | インダクタンス<br>許容差<br>Inductance<br>Tolerance | Q<br>(参考値)<br>(Typical) | 測定<br>周波数<br>Measuring<br>frequency<br>[MHz] | 自己共振<br>周波数<br>Self-resonant<br>frequency<br>[MHz]<br>min. | 直流抵抗<br>DC<br>Resistance<br>[Ω]<br>(30%) | 定格電流<br>Rated current<br>[mA]<br>max. |
|---------------------|-------------------------------------|---|-------------------------|--|--|--|---------------------------------------|
| LEMC2520□1R0M       | 1.0                                 | ±20%                                      | 20                      | 7.96   | 180  | 0.25                                     | 475                                   |
| LEMC2520□1R5M       | 1.5                                 |   |                         |  | 100  | 0.3                                      | 435                                   |
| LEMC2520□2R2M       | 2.2                                 |   |                         |  | 75   | 0.4                                      | 390                                   |
| LEMC2520□3R3M       | 3.3                                 |   |                         |  | 55   | 0.5                                      | 340                                   |
| LEMC2520□4R7M       | 4.7                                 |   |                         |  | 43   | 0.7                                      | 285                                   |
| LEMC2520□6R8M       | 6.8                                 | ±10%                                      | 30                      | 2.52   | 39   | 0.9                                      | 275                                   |
| LEMC2520□100K       | 10                                  |   |                         |  | 32   | 1.5                                      | 210                                   |
| LEMC2520□150K       | 15                                  |   |                         |  | 21   | 1.9                                      | 175                                   |
| LEMC2520□220K       | 22                                  |   |                         |  | 18   | 2.7                                      | 160                                   |
| LEMC2520□330K       | 33                                  |   |                         |  | 16   | 4.8                                      | 120                                   |

・注：形名の□には包装記号が入ります。 □ Please specify the packaging code. (T: Tape & reel, B: Bulk,)

LEMF2520 TYPE

低Rdcタイプ Low Rdc type

| 形名<br>Ordering code | 公称<br>インダクタンス<br>Inductance<br>[μH] | インダクタンス<br>許容差<br>Inductance<br>Tolerance | Q<br>(参考値)<br>(Typical) | 測定<br>周波数<br>Measuring<br>frequency<br>[MHz] | 自己共振<br>周波数<br>Self-resonant<br>frequency<br>[MHz]<br>min. | 直流抵抗<br>DC<br>Resistance<br>[Ω]<br>(±30%) | 定格電流<br>Rated current<br>[mA]<br>max. |
|---------------------|-------------------------------------|---|-------------------------|--|--|---|---------------------------------------|
| LEMF2520□1R0M       | 1.0                                 | ±20%                                      | 10                      | 7.96   | 100  | 0.13                                      | 455                                   |
| LEMF2520□1R5M       | 1.5                                 |   |                         |  | 80   | 0.17                                      | 350                                   |
| LEMF2520□2R2M       | 2.2                                 |   |                         |  | 70   | 0.20                                      | 315                                   |
| LEMF2520□3R3M       | 3.3                                 |   |                         |  | 55   | 0.25                                      | 280                                   |
| LEMF2520□4R7M       | 4.7                                 |   |                         |  | 45   | 0.30                                      | 210                                   |
| LEMF2520□6R8M       | 6.8                                 | ±10%                                      | 20                      | 2.52   | 38   | 0.35                                      | 175                                   |
| LEMF2520□100K       | 10                                  |   |                         |  | 32   | 0.50                                      | 155                                   |
| LEMF2520□150K       | 15                                  |   |                         |  | 28   | 1.00                                      | 130                                   |
| LEMF2520□220K       | 22                                  |   |                         |  | 16   | 1.20                                      | 105                                   |
| LEMF2520□330K       | 33                                  |   |                         |  | 14   | 2.10                                      | 85                                    |
| LEMF2520□470K       | 47                                  | 0.796                                     |                         |  | 11   | 2.60                                      | 60                                    |
| LEMF2520□680K       | 68                                  |   |                         |  | 10   | 3.30                                      | 50                                    |
| LEMF2520□101K       | 100                                 |   |                         |  | 8  | 5.50                                      | 40                                    |

・注：形名の□には包装記号が入ります。 □ Please specify the packaging code. (T: Tape & reel, B: Bulk,)

LEMC3225 TYPE

大電流タイプ High current type

| 形名<br>Ordering code | 公称<br>インダクタンス<br>Inductance<br>[μH] | インダクタンス<br>許容差<br>Inductance<br>Tolerance | Q<br>min. | 測定<br>周波数<br>Measuring<br>frequency<br>[MHz] | 自己共振<br>周波数<br>Self-resonant<br>frequency<br>[MHz]<br>min. | 直流抵抗<br>DC<br>Resistance<br>[Ω]<br>(±30%) | 定格電流<br>Rated current<br>[mA]<br>max. |     |
|---------------------|-------------------------------------|---|-----------|--|--|---|---------------------------------------|-----|
| LEMC3225□1R0M       | 1.0                                 | ±20%                                      | 10        | 7.96   | 100  | 0.10                                      | 850                                   |     |
| LEMC3225□1R5M       | 1.5                                 |   |           |  | 80   | 0.12                                      | 700                                   |     |
| LEMC3225□2R2M       | 2.2                                 |   |           |  | 68   | 0.15                                      | 600                                   |     |
| LEMC3225□3R3M       | 3.3                                 |   |           |  | 54   | 0.18                                      | 500                                   |     |
| LEMC3225□4R7M       | 4.7                                 |   |           |  | 46   | 0.22                                      | 430                                   |     |
| LEMC3225□6R8M       | 6.8                                 |   |           |  | 38   | 0.29                                      | 360                                   |     |
| LEMC3225□100K       | 10                                  | ±10%                                      | 15        | 2.52   | 30   | 0.41                                      | 300                                   |     |
| LEMC3225□150K       | 15                                  |   |           |  | 26   | 0.55                                      | 250                                   |     |
| LEMC3225□220K       | 22                                  |   |           |  | 20   | 1.00                                      | 210                                   |     |
| LEMC3225□330K       | 33                                  |   |           |  | 17   | 1.30                                      | 170                                   |     |
| LEMC3225□470K       | 47                                  |   |           |  | 14   | 1.90                                      | 150                                   |     |
| LEMC3225□680K       | 68                                  |   |           |  | 12   | 3.30                                      | 120                                   |     |
| LEMC3225□101K       | 100                                 |   |           | 20   | 0.796  | 10  | 4.30                                  | 100 |
| LEMC3225□151K       | 150                                 |   |           |  |  | 8   | 6.30                                  | 85  |
| LEMC3225□221K       | 220                                 |   |           |  |  | 6   | 8.00                                  | 70  |
| LEMC3225□331K       | 330                                 |   |           |  |  | 5   | 13.00                                 | 60  |

・注：形名の□には包装記号が入ります。・□ Please specify the packaging code. (T: Tape & reel, B: Bulk,)

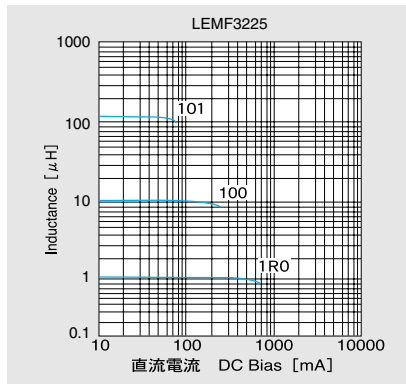
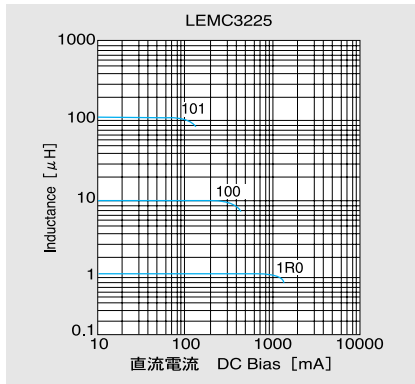
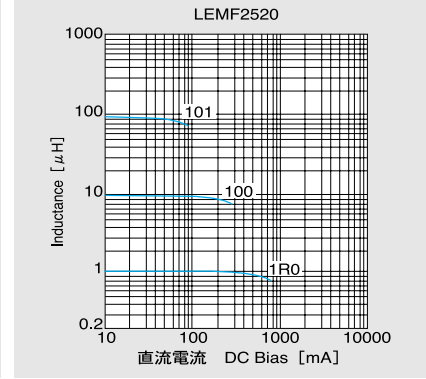
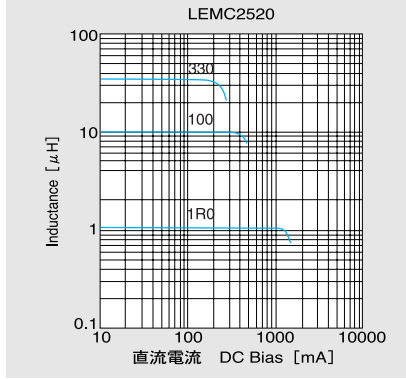
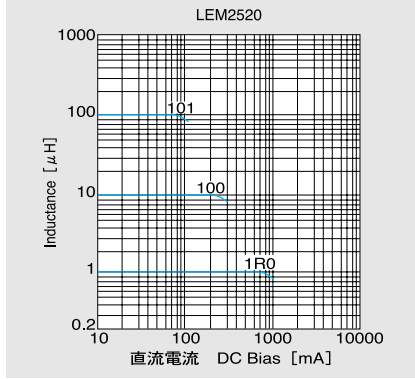
LEMF3225 TYPE

低Rdcタイプ Low Rdc type

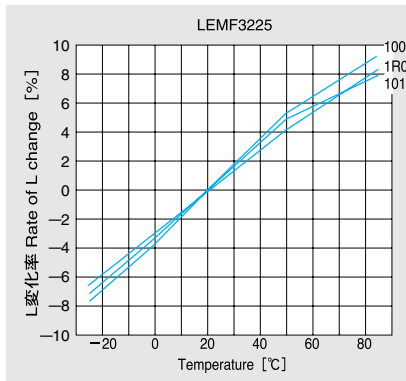
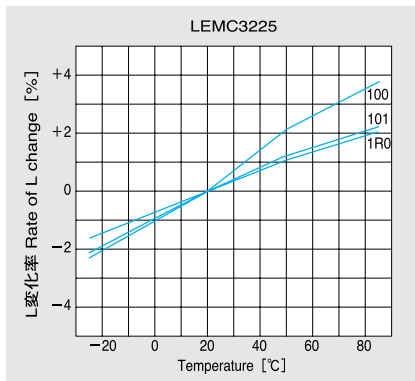
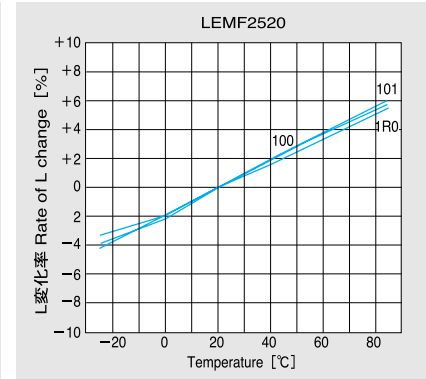
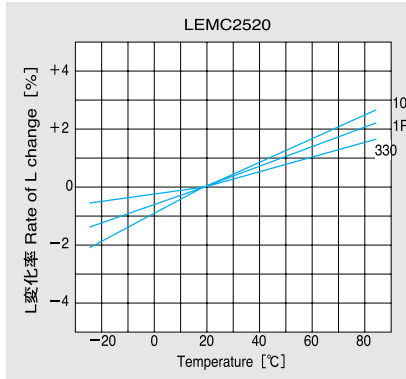
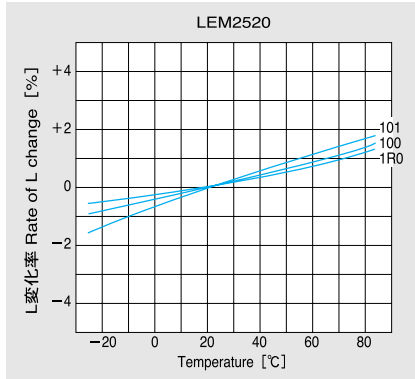
| 形名<br>Ordering code | 公称<br>インダクタンス<br>Inductance<br>[μH] | インダクタンス<br>許容差<br>Inductance<br>Tolerance | Q<br>(参考値)<br>(Typical) | 測定<br>周波数<br>Measuring<br>frequency<br>[MHz] | 自己共振<br>周波数<br>Self-resonant<br>frequency<br>[MHz]<br>min. | 直流抵抗<br>DC<br>Resistance<br>[Ω]<br>(±30%) | 定格電流<br>Rated current<br>[mA]<br>max. |    |
|---------------------|-------------------------------------|---|-------------------------|--|--|---|---------------------------------------|----|
| LEMF3225□1R0M       | 1.0                                 | ±20%                                      | 5                       | 7.96   | 100  | 0.06                                      | 500                                   |    |
| LEMF3225□1R5M       | 1.5                                 |   |                         |  | 80   | 0.08                                      | 400                                   |    |
| LEMF3225□2R2M       | 2.2                                 |   |                         |  | 68   | 0.09                                      | 340                                   |    |
| LEMF3225□3R3M       | 3.3                                 |   |                         |  | 54   | 0.11                                      | 270                                   |    |
| LEMF3225□4R7M       | 4.7                                 |   |                         |  | 43   | 0.13                                      | 240                                   |    |
| LEMF3225□6R8M       | 6.8                                 |   |                         |  | 35   | 0.17                                      | 195                                   |    |
| LEMF3225□100K       | 10                                  | ±10%                                      | 10                      | 2.52   | 28   | 0.22                                      | 165                                   |    |
| LEMF3225□150K       | 15                                  |   |                         |  | 24   | 0.30                                      | 145                                   |    |
| LEMF3225□220K       | 22                                  |   |                         |  | 20   | 0.45                                      | 115                                   |    |
| LEMF3225□330K       | 33                                  |   |                         |  | 17   | 0.65                                      | 95                                    |    |
| LEMF3225□470K       | 47                                  |   |                         |  | 13   | 0.95                                      | 85                                    |    |
| LEMF3225□680K       | 68                                  |   |                         |  | 11   | 1.3                                       | 70                                    |    |
| LEMF3225□101K       | 100                                 |   |                         | 0.796  | 0.796  | 9   | 2.1                                   | 55 |
| LEMF3225□151K       | 150                                 |   |                         |  |  | 7   | 3.2                                   | 45 |
| LEMF3225□221K       | 220                                 |   |                         |  |  | 6   | 4.5                                   | 35 |
| LEMF3225□331K       | 330                                 |   |                         |  |  | 4.5                                       | 7.0                                   | 30 |

・注：形名の□には包装記号が入ります。・□ Please specify the packaging code. (T: Tape & reel, B: Bulk,)

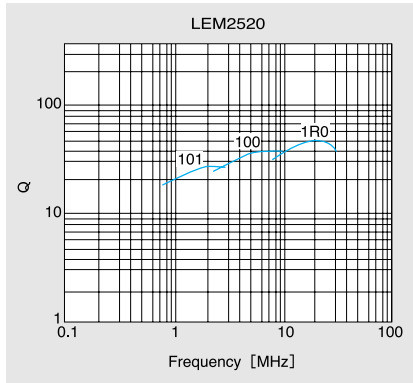
直流量特性例 DC Bias characteristics(Measured by HP4285A+42841A)



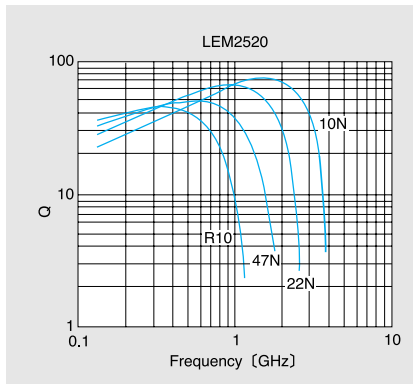
温度特性例 Temperature characteristics(Measured by HP4285A+42851A)



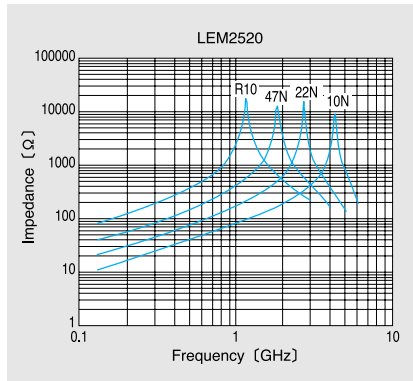
Q-周波数特性例 Q-Characteristics  
 一般タイプ Ordinary type(Measured by HP4285A+42851A)



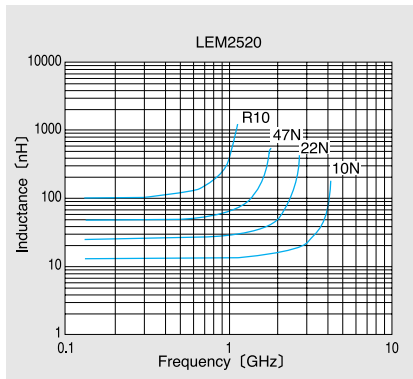
高周波タイプ High frequency type(Measured by HP8720B)



インピーダンス周波数特性例 Impedance-vs-Frequency characteristics(Measured by HP8720B)



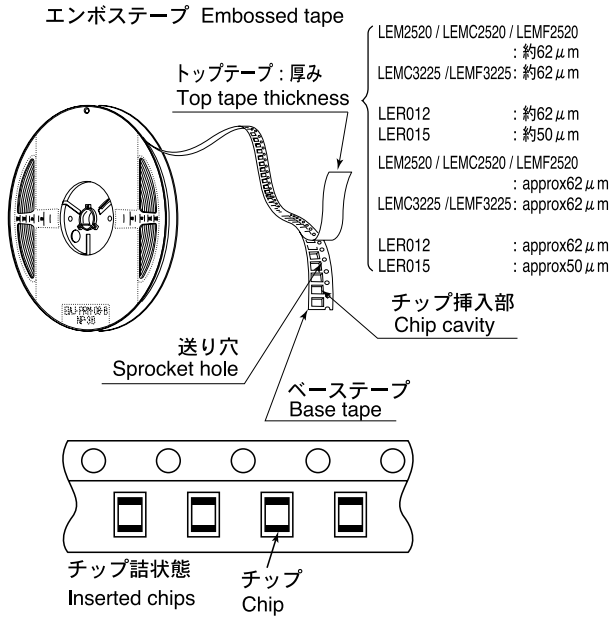
インダクタンス周波数特性例 Inductance-vs-Frequency characteristics(Measured by HP8720B)



①標準数量 Standard Quantity

| 形式<br>Type                | 標準数量<br>Standard Quantity [pcs] |                    |
|---------------------------|---------------------------------|--------------------|
|                           | 袋づめ<br>Bulk / Bag               | テーピング<br>Tape&Reel |
| LEM2520/LEMC2520/LEMF2520 | 2000                            | 2000               |
| LEMC3225/LEMF3225         | 2000                            | 2000               |
| LER012                    | 3000                            | 3000               |
| LER015                    | 3000                            | 3000               |

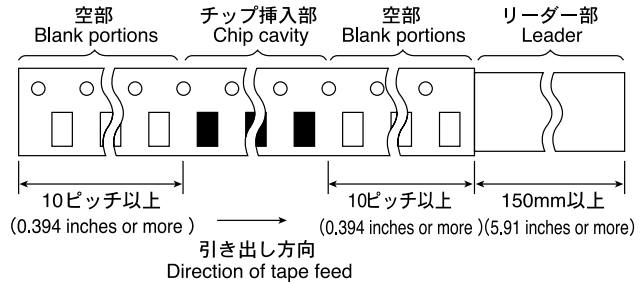
②テーピング材質 Tape material



| 形式<br>Type                        | チップ挿入部<br>Chip Cavity     |                           | 挿入ピッチ<br>Insertion Pitch<br>F | テープ厚み<br>Tape Thickness |                |
|-----------------------------------|---------------------------|---------------------------|-------------------------------|-------------------------|----------------|
|                                   | A                         | B                         |                               | K                       | T              |
| LEM2520/<br>LEMC2520/<br>LEMF2520 | 2.3±0.1<br>(0.091±0.004)  | 2.7±0.1<br>(0.106±0.004)  | 4.0±0.1<br>(0.157±0.004)      | 2.1<br>(0.083)          | 0.3<br>(0.012) |
| LEMC3225/<br>LEMF3225             | 2.8±0.2<br>(0.110±0.008)  | 3.55±0.2<br>(0.140±0.008) | 4.0±0.1<br>(0.157±0.004)      | 2.45<br>(0.096)         | 0.3<br>(0.012) |
| LER012                            | 1.45±0.2<br>(0.057±0.008) | 2.43±0.2<br>(0.096±0.008) | 4.0±0.1<br>(0.157±0.004)      | 2.0<br>(0.079)          | 0.3<br>(0.012) |
| LER015                            | 2.0±0.2<br>(0.079±0.008)  | 3.6±0.2<br>(0.142±0.008)  | 4.0±0.1<br>(0.157±0.004)      | max.                    | max.           |

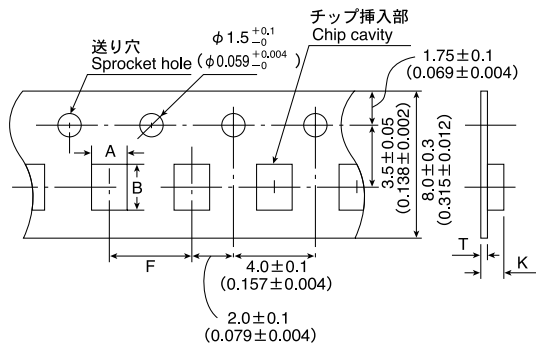
Unit: mm (inch)

④リーダ部/空部 Leader and Blank Portion



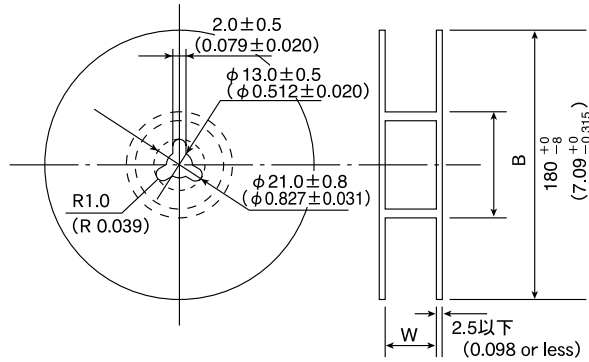
③テーピング寸法 Taping Dimensions

エンボステープ (8mm幅) Embossed Tape (0.315 inches wide)





⑤リール寸法 Reel Size

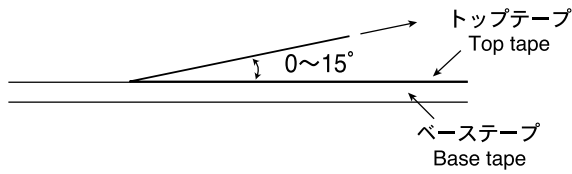


Unit: mm (inch)

| 形式<br>Type                      | W                         | B   |
|---------------------------------|---------------------------|---|
| LER012                          | 9±0.8<br>(0.354±0.031)    | 60 <sup>+1</sup> <sub>-0</sub><br>(2.36 <sup>+0.039</sup> <sub>-0</sub> ) |
| LER015                          | 10.0±1.5<br>(0.394±0.059) | 50±1<br>(1.97±0.039)  |
| LEM2520<br>LEMC2520<br>LEMF2520 | 9±0.8<br>(0.354±0.031)    | 60 <sup>+1</sup> <sub>-0</sub><br>(2.36 <sup>+0.039</sup> <sub>-0</sub> ) |
| LEMC3225<br>LEMF3225            | 9±0.8<br>(0.354±0.031)    | 60 <sup>+1</sup> <sub>-0</sub><br>(2.36 <sup>+0.039</sup> <sub>-0</sub> ) |

⑥トップテープ強度 Top Tape Strength

トップテープのはがし力は、下図矢印方向にて0.2~0.7Nとなります。  
The top tape requires a peel-off force of 0.2 to 0.7N in the direction of the arrow as illustrated below.

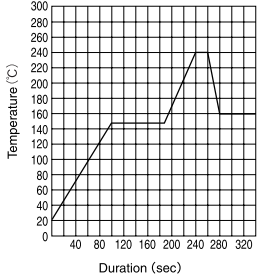


| Item                           | Specified Value                |           |          |          |          |           |           |        |        |        |                       | Test Methods and Remarks   |         |
|--------------------------------|--------------------------------|-----------|----------|----------|----------|-----------|-----------|--------|--------|--------|-----------------------|--|---------|
|                                | LER012<br>LER015               | LEM2520   | LEMC2520 | LEMF2520 | LEMC3225 | LEMF3225  | LB2518    | LB2016 | LB2012 | LB1608 | LBC2518               |  | LBH1608 |
| 1. Operating temperature Range | -25~+85°C                      | -40~+85°C |          |          |          |           | -25~+85°C |        |        |        |                       |  |         |
| 2. Storage                     | -40~+85°C                      |           |          |          |          | -25~+85°C |           |        |        |        |                       |  |         |
| 3. Rated Voltage               | Within the specified tolerance |           |          |          |          |           |           |        |        |        |                       | <p>The maximum DC value having inductance decrease within 10% and temperature increases within 20°C by the application of DC bias.</p> <p>LBH1608 · LEM Series 5N6~R10:<br/>The maximum DC value having temperature increases within 20°C by the application of DC bias.</p>   |         |
| 4. Inductance                  | Within the specified tolerance |           |          |          |          |           |           |        |        |        |                       | <p>LER · LEM Series 5N6~R10 :<br/>Measuring equipment : Impedance analyzer (HP4291A or its equivalent)<br/>Measuring frequency : Specified frequency<br/>LER · LEM Series R12~221 :<br/>Measuring equipment : LCR Meter (HP4285A+42851A or its equivalent)<br/>Measuring frequency : Specified frequency</p> <p>LB · LBC Series :<br/>Measuring equipment : LCR Meter (HP4285A or its equivalent)</p> <p>LBH1608 Series :<br/>Measuring equipment : Impedance analyzer (HP4291A or its equivalent)</p> |         |
| 5. Q                           | Within the specified tolerance |           |          |          |          |           |           |        |        |        | 12~18 (at 100MHz) min | <p>LER · LEM Series 5N6~R10 :<br/>Measuring equipment : Impedance analyzer (HP4291A or its equivalent)<br/>Measuring frequency : Specified frequency<br/>LER · LEM Series R12~221 :<br/>Measuring equipment : LCR Meter (HP4285A+42851A or its equivalent)<br/>Measuring frequency : Specified frequency</p> <p>LB · LBC Series :<br/>Measuring equipment : LCR Meter (HP4285A or its equivalent)</p> <p>LBH1608 Series :<br/>Measuring equipment : Impedance analyzer (HP4291A or its equivalent)</p> |         |
| 6. DC Resistance               | Within the specified tolerance |           |          |          |          |           |           |        |        |        |                       | <p>LER · LEM · LB · LBC · LBH Series :<br/>Measuring equipment : low ohmmeter (A&amp;D AD5812 or its equivalent)</p>   |         |

| Item                                  | Specified Value                           |  |   |  |  |  |   |   |   |   |   | Test Methods and Remarks  |         |                  |   |    |   |     |   |                            |   |                                     |   |    |
|---------------------------------------|---|--|---|--|--|--|---|---|---|---|---|---|---------|------------------|---|----|---|-----|---|----------------------------|---|-------------------------------------|---|----|
|                                       | LER012<br>LER015                          | LEM2520                                    | LEMC2520                                  | LEMF2520                                   | LEMC3225                                   | LEMF3225                                   | LB2518                                    | LB2016                                    | LB2012                                    | LB1608                                    | LBC2518                                   |   | LBH1608 |                  |   |    |   |     |   |                            |   |                                     |   |    |
| 7. Self-Resonant Frequency            | Within the specified tolerance            |  |   |  |  |  |   |   |   |   |   | LER · LEM Series<br>5N6~R10 :<br>Measuring equipment : Network analyzer<br>(HP8720B or its equivalent)<br>LER · LEM Series (Exclude LEM2520)<br>R12~ :<br>Measuring equipment : Impedance analyzer<br>(HP4291A or its equivalent)<br>LEM2520 :<br>Measuring equipment : Network analyzer<br>(Anritsu MS620J or its equivalent)<br>LB · LBC Series :<br>Measuring equipment : Impedance analyzer<br>(HP4291A or its equivalent)<br>LBH1608 Series :<br>Measuring equipment : Network analyzer<br>(HP8720B or its equivalent) |         |                  |   |    |   |     |   |                            |   |                                     |   |    |
| 8. Temperature Characteristic         | $\Delta L/L \rightarrow$ Within $\pm 5\%$ | $\Delta L/L \rightarrow$ Within $\pm 10\%$ | $\Delta L/L \rightarrow$ Within $\pm 5\%$ | $\Delta L/L \rightarrow$ Within $\pm 15\%$ | $\Delta L/L \rightarrow$ Within $\pm 15\%$ | $\Delta L/L \rightarrow$ Within $\pm 15\%$ | $\Delta L/L \rightarrow$ Within $\pm 5\%$ | $\Delta L/L \rightarrow$ Within $\pm 5\%$ | $\Delta L/L \rightarrow$ Within $\pm 5\%$ | $\Delta L/L \rightarrow$ Within $\pm 5\%$ | $\Delta L/L \rightarrow$ Within $\pm 5\%$ | Change of maximum inductance deviation in step 1—5<br>* Exclude CM03MS series<br><table border="1"> <thead> <tr> <th>Step</th> <th>Temperature (°C)</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>20</td> </tr> <tr> <td>2</td> <td>-25</td> </tr> <tr> <td>3</td> <td>20 (Reference temperature)</td> </tr> <tr> <td>4</td> <td>+85 (Maximum operating temperature)</td> </tr> <tr> <td>5</td> <td>20</td> </tr> </tbody> </table>   | Step    | Temperature (°C) | 1 | 20 | 2 | -25 | 3 | 20 (Reference temperature) | 4 | +85 (Maximum operating temperature) | 5 | 20 |
| Step                                  | Temperature (°C)                          |  |   |  |  |  |   |   |   |   |   |   |         |                  |   |    |   |     |   |                            |   |                                     |   |    |
| 1                                     | 20  |  |   |  |  |  |   |   |   |   |   |   |         |                  |   |    |   |     |   |                            |   |                                     |   |    |
| 2                                     | -25                                       |  |   |  |  |  |   |   |   |   |   |   |         |                  |   |    |   |     |   |                            |   |                                     |   |    |
| 3                                     | 20 (Reference temperature)                |  |   |  |  |  |   |   |   |   |   |   |         |                  |   |    |   |     |   |                            |   |                                     |   |    |
| 4                                     | +85 (Maximum operating temperature)       |  |   |  |  |  |   |   |   |   |   |   |         |                  |   |    |   |     |   |                            |   |                                     |   |    |
| 5                                     | 20  |  |   |  |  |  |   |   |   |   |   |   |         |                  |   |    |   |     |   |                            |   |                                     |   |    |
| 9. Resistance to Flexure of Substrate | No breakdown or damage                    |  |   |  |  |  |   |   |   |   |   | Warp: 2mm (LER012, LER015, LBC, LB)<br>: 3mm (LEM2520, LEMC2520, LEMF2520, LEMC3225, LEMF3225)<br>Test substrate: Printed board<br>According to JIS C0051<br>   |         |                  |   |    |   |     |   |                            |   |                                     |   |    |
| 10. Body Strength                     | No breakdown or damage                    |  |   |  |  |  |   |   |   |   |   | LER012 · LER015<br>Applied force : 15N<br>Duration : 5sec.<br>LB · LBC · LBH<br>LEM2520 · LEMC2520 · LEMF2520 · LEMC3225 · LEMF3225<br>Applied force : 10N<br>Duration : 10sec.<br>LB1608<br>Applied force : 5N<br>Duration : 10sec.  |         |                  |   |    |   |     |   |                            |   |                                     |   |    |
| 11. Self Resonant Frequency           | $\Delta L/L \rightarrow$ Within $-10\%$   |  |   |  |  |  |   |   |   |   |   | Measure inductance with application of rated current using LCR metre to compare it with the initial value. (* Excluding 5N6~R10)  |         |                  |   |    |   |     |   |                            |   |                                     |   |    |

| Item                               | Specified Value  |  |          |          |          |   |                              |        |        |        |         | Test Methods and Remarks  |
|------------------------------------|--|--|----------|----------|----------|---|------------------------------|--------|--------|--------|---------|---|
|                                    | LER012<br>LER015   | LEM2520  | LEMC2520 | LEMF2520 | LEMC3225 | LEMF3225  | LB2518                       | LB2016 | LB2012 | LB1608 | LBC2518 |   |
| 12. Adhesion of terminal electrode | Shall not come off PC board.   | No detachment of electrode   |          |          |          |   | Shall not come off PC board. |        |        |        |         | LER012 · LER015<br>Applied force : 15N<br>Duration : 5 sec.<br>Test substrate : Printed board<br><br>LB · LBC · LBH<br>LEM2520 · LEMC2520 · LEMF2520 · LEMC3225 · LEMF3225<br>Applied force : 10N to X and Y directions<br>Duration : 5 sec.<br>Test substrate : Printed board  |
| 13. Resistance to vibration        | $\Delta L/L \rightarrow$<br>Within $\pm 5\%$<br>Q →<br>R12~1R0 :<br>25min.<br>1R2~3R3 :<br>20min.<br><br>$\Delta L/L \rightarrow$<br>Within $\pm 5\%$<br>Q →<br>R12~100 :<br>30min.<br>120~220 :<br>20min. | $\Delta L/L \rightarrow$ Within $\pm 5\%$<br>No significant abnormality in appearance. |          |          |          | $\Delta L/L \rightarrow$ Within $\pm 10\%$<br>No significant abnormality in appearance. |                              |        |        |        |         | LER · LEM · LB · LBC :<br>According to JIS C5102 clause 8.2.<br>Vibration type : A<br>Directions : 2 hrs each in X, Y and Z directions. Total : 6 hrs<br>Frequency range : 10 to 55 to 10 Hz (1min.)<br>Amplitude : 1.5mm<br>Mounting method : Soldering onto printed board<br>(* Excluding 5N6-R10 LE Series)<br><br>Recovery : At least 1 hr of recovery under the standard condition after the test, followed by the measurement within 2 hrs. |

| Item             | Specified Value                           |   |          |          |  |          |        |        |        |        |         | Test Methods and Remarks   |
|------------------|---|---|----------|----------|--|----------|--------|--------|--------|--------|---------|--|
|                  | LER012<br>LER015                          | LEM2520   | LEMC2520 | LEMF2520 | LEMC3225   | LEMF3225 | LB2518 | LB2016 | LB2012 | LB1608 | LBC2518 |  |
| 14.Drop test     | No significant abnormality in appearance. | △L/L→Within±5%<br>No significant abnormality in appearance. |          |          | △L/L→<br>Within±10%<br>No significant abnormality in appearance. |          |        |        |        |        |         | LER・LEM :<br>LER012・LER015<br>Drop test<br>Impact material : concreta or vinyl tile<br>Height : 1m<br>Total number of drops : 10 times<br><br>LEM2520・LEMC2520・LEMF2520・<br>LEMC3225・LEMF3225<br>Acceleration : 980m/sec <sup>2</sup><br>Duration : 6msec<br>Number of times : 6 sides × 3 times<br>Mounting method : Soldering onto printed board<br>(* Excluding 10N~R10)<br>Recovery : At least 1 hr of recovery under the standard condition after the |
| 15.Solderability | At least 90% of electrode                 |   |          |          |  |          |        |        |        |        |         | test, followed by the measurement within 2 hrs.<br><br>LER・LEM :<br>Solder temperature : 230±5°C<br>Duration : 2±0.5sec. (LER012・LER015)<br>5±0.5sec. (LEM2520・<br>LEMC2520・LEMF2520・<br>LEMC3225・LEMF3225)<br>Flux : Methanol solution with 25% of colophony<br><br>LB・LBH :<br>Solder temperature : 230±5°C<br>Duration : 5±0.5sec<br>Flux : Methanol solution with 25% of colophony   |

| Item                             | Specified Value                           |         |          |          |          |          |        |        |        |        |         | Test Methods and Remarks   |
|----------------------------------|---|---------|----------|----------|----------|----------|--------|--------|--------|--------|---------|--|
|                                  | LER012<br>LER015                          | LEM2520 | LEMC2520 | LEMF2520 | LEMC3225 | LEMF3225 | LB2518 | LB2016 | LB2012 | LB1608 | LBC2518 |  |
| 16. Resistance to soldering heat | No significant abnormality in appearance  |         |          |          |          |          |        |        |        |        |         | <p>Conduct following wave soldering twice. (LER012)</p>  <p>Solder temperature : 260±5°C<br/>                     Duration : 5±0.5sec. Twice (LER015)<br/>                     10±1sec. Once (LEM2520 · LEMC2520 · LEMF2520 · LEMC3225 · LEMF3225)</p> <p>LB · LBH :<br/>                     3 times of reflow oven at 220 ± 5°C for 40sec. with peak temperature at 235± 5°C for 5sec.</p>  |
| 17. Resistance to solvent        | No significant abnormality in appearance. |         |          |          |          |          |        |        |        |        |         | <p>Solvent temperature : Room temperature<br/>                     Type of solvent : Chlorocarbon type<br/>                     (LEM2520 · LEMC2520 · LEMC3225)<br/>                     Isopropyl alcohol<br/>                     (LEMF2520 · LEMF3225 · LB · LBC)</p> <p>Cleaning conditions : Output : 20mW/cm<sup>3</sup><br/>                     Frequency : 28kHz<br/>                     Duration : 1 min<br/>                     Conduct ultrasonic cleaning.<br/>                     (LEM2520 · LEMC2520 · LEMC3225)<br/>                     90s. Immersion and cleaning.<br/>                     (LEMF2520 · LEMF3225 · LB · LBC)</p> |

| Item                        | Specified Value  |   |                  |               |          |          |        |        |        |        |         | Test Methods and Remarks   |  |      |                 |                 |               |   |     |     |    |   |     |     |    |
|-----------------------------|--|---|------------------|---------------|----------|----------|--------|--------|--------|--------|---------|--|--|------|-----------------|-----------------|---------------|---|-----|-----|----|---|-----|-----|----|
|                             | LER012<br>LER015   | LEM2520   | LEMC2520         | LEMF2520      | LEMC3225 | LEMF3225 | LB2518 | LB2016 | LB2012 | LB1608 | LBC2518 |  | LBH1608  |      |                 |                 |               |   |     |     |    |   |     |     |    |
| 18. Resisittance to solvent | Δ/L/L→<br>Within±10%<br>Q→<br>5N6~18N :<br>10min.<br>22N~R10 :<br>15min.<br>R12~1R0 :<br>20min.<br>25min.<br>1R2~3R3 :<br>30min.<br>20min.<br>Δ/L/L→<br>Within±10%<br>Q→<br>10N~18N :<br>10min.<br>22N~R10 :<br>15min.<br>R12~100 :<br>30min.<br>120~220 :<br>20min. | Δ/L/L→<br>Within±10%<br>Q→<br>10N : 10min.<br>12N~33N :<br>15min.<br>39N~R10 :<br>20min.<br>R12~4R7 :<br>30min.<br>5R6~330 :<br>25min.<br>390~820 :<br>20min.<br>101 : 15min. | Δ/L/L→Within±10% |               |          |          |        |        |        |        |         | Δ/L/L→<br>Within±5%<br>※Δ/L/L→<br>within±0.5nH<br>under<br>8.2 n H<br>Δ/Q/Q→<br>within±20%<br>※Δ/Q/Q<br>→within<br>±5 under<br>8.2 n H | Conditions for 1 cycle<br><table border="1"> <thead> <tr> <th>Step</th> <th>Temperature(C)①</th> <th>Temperature(C)②</th> <th>Duration(min)</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>-25</td> <td>-40</td> <td>30</td> </tr> <tr> <td>2</td> <td>+85</td> <td>+85</td> <td>30</td> </tr> </tbody> </table> Temperature ① for : LER012 · LER015<br>Temperature ② for :<br>LEM2520 · LEMC2520 · LEMF2520 ·<br>LEMC3225 · LEMF3225<br>Number of cycle : 100 cycle<br>Recovery : At least 1 hr of recovery the standard condition after the removal from test chamber, followed by measurement within 2 hrs.<br><br>LB · LBC · LBH :<br>-40~+85°C, miaintain times 30min. ,100 cycle<br>Recovery : At least 1 hr of recovery under the standard condition after the test, followed by the measurement within 2 hrs. | Step | Temperature(C)① | Temperature(C)② | Duration(min) | 1 | -25 | -40 | 30 | 2 | +85 | +85 | 30 |
|                             | Step   | Temperature(C)①   | Temperature(C)②  | Duration(min) |          |          |        |        |        |        |         |  |  |      |                 |                 |               |   |     |     |    |   |     |     |    |
| 1                           | -25  | -40   | 30               |               |          |          |        |        |        |        |         |  |  |      |                 |                 |               |   |     |     |    |   |     |     |    |
| 2                           | +85  | +85   | 30               |               |          |          |        |        |        |        |         |  |  |      |                 |                 |               |   |     |     |    |   |     |     |    |
| 19. Damp heat               | Δ/L/L→<br>Within±10%<br>Q→<br>5R6~18N :<br>10min.<br>22N~R10 :<br>15min.<br>R12~1R0 :<br>20min.<br>25min.<br>1R2~3R3 :<br>30min.<br>20min.<br>Δ/L/L→<br>Within±10%<br>Q→<br>10N~18N :<br>10min.<br>22N~R10 :<br>15min.<br>R12~100 :<br>30min.<br>120~220 :<br>20min. | Δ/L/L→<br>Within±10%<br>Q→<br>10N : 10min.<br>12N~33N :<br>15min.<br>39N~R10 :<br>20min.<br>R12~4R7 :<br>30min.<br>5R6~330 :<br>25min.<br>390~820 :<br>20min.<br>101 : 15min. | Δ/L/L→Within±10% |               |          |          |        |        |        |        |         | Δ/L/L→<br>Within±5%<br>※Δ/L/L→<br>within±0.5nH<br>under<br>8.2 n H<br>Δ/Q/Q→<br>Within±20%<br>※Δ/Q/Q<br>→within<br>±5 under<br>8.2 n H | Temperature : 60±2°C<br>Humidity : 90~95%RH<br>Duration : 1000 hrs<br>Recovery : At least 1 hr of recovery the standard condition after the removal from test chamber, followed by measurement within 2 hrs.   |      |                 |                 |               |   |     |     |    |   |     |     |    |

| Item                           | Specified Value  |   |                 |          |          |          |        |        |        |        |         | Test Methods and Remarks   |  |
|--------------------------------|--|---|-----------------|----------|----------|----------|--------|--------|--------|--------|---------|--|--|
|                                | LER012<br>LER015   | LEM2520   | LEMC2520        | LEMF2520 | LEMC3225 | LEMF3225 | LB2518 | LB2016 | LB2012 | LB1608 | LBC2518 |  | LBH1608  |
| 20.Loading under damp heat     | ΔLL→<br>Within±10%<br>Q→<br>R12~1R0 :<br>25min.<br>1R2~3R3 :<br>20min.<br>ΔLL→<br>Within±10%<br>Q→<br>R12~100 :<br>30min.<br>120~220 :<br>20min.   | ΔLL→<br>Within±10%<br>Q→<br>R12~4R7 :<br>30min.<br>5R6~330 :<br>25min.<br>390~820 :<br>20min.<br>101 : 15min.   | ΔL/L→Within±10% |          |          |          |        |        |        |        |         | ΔLL→<br>Within±5%<br>※ΔLL→<br>within<br>±0.5nH<br>under<br>8.2 n H<br>△Q/Q→<br>Within±20%<br>※△QQ<br>→within<br>±0.5 under<br>8.2 n H  | LER · LEM · LB · LBC :<br>Temperature : 60±2°C (Excluding nH range)<br>Humidity : 90~95%RH<br>Duration : 1000 hrs<br>Applied current : Rated current<br>Recovery : At least 1 hr of recovery the standard condition after the removal from test chamber, followed by measurement within 2 hrs. |
| 21.Hihr temperature life test  | ΔLL→<br>Within±10%<br>Q→<br>5R6~18N :<br>10min.<br>22N~R10 :<br>15min.<br>15min.<br>R12~1R0 :<br>25min.<br>1R2~3R3 :<br>20min.<br>ΔLL→<br>Within±10%<br>Q→<br>10N~18N :<br>10min.<br>22N~R10 :<br>15min.<br>R12~100 :<br>30min.<br>120~220 :<br>20min. | ΔLL→<br>Within±10%<br>Q→<br>10N : 10min.<br>12N~33N :<br>15min.<br>39N~R10 :<br>20min.<br>R12~4R7 :<br>30min.<br>5R6~330 :<br>25min.<br>390~820 :<br>20min.<br>101 : 15min. | ΔL/L→Within±10% |          |          |          |        |        |        |        |         | LER · LEM :<br>Temperature : 85±2°C<br>Duration : 1000 hrs<br>Recovery : At least 1 hr of recovery the standard condition after the removal from test chamber, followed by measurement within 2 hrs. |  |
| 22.Loading at high temperature | ΔLL→<br>Within±10%<br>Q→<br>R12~1R0 :<br>25min.<br>1R2~3R3 :<br>20min.<br>ΔLL→<br>Within±10%<br>Q→<br>R12~100 :<br>30min.<br>120~220 :<br>20min.   |   | ΔL/L→Within±10% |          |          |          |        |        |        |        |         | ΔLL→<br>Within±5%<br>※ΔLL→<br>within±0.5nH<br>under<br>8.2 n H<br>△Q/Q→<br>Within±20%<br>※△QQ<br>→within<br>±0.5 under<br>8.2 n H  | LER · LB · LBC :<br>Temperature : 85±2°C (Excluding nH range)<br>Duration : 1000 hrs<br>Applied current : Rated current<br>Recovery : At least 1 hr of recovery the standard condition after the removal from test chamber, followed by measurement within 2 hrs.                              |



| Item                         | Specified Value   |   |                 |          |          |   |        |        |        |        |         | Test Methods and Remarks   |  |
|------------------------------|---|---|-----------------|----------|----------|---|--------|--------|--------|--------|---------|--|--|
|                              | LER012<br>LER015  | LEM2520   | LEMC2520        | LEMF2520 | LEMC3225 | LEMF3225  | LB2518 | LB2016 | LB2012 | LB1608 | LBC2518 |  | LBH1608  |
| 23.Low temperature life test | ΔL/L→<br>Within±10%<br>Q→<br>5R6~18N : 10min.<br>22N~R10 : 15min.<br>R12~1R0 : 20min.<br>25min.<br>1R2~3R3 : 30min.<br>20min.<br>ΔL/L→<br>±10%以内<br>Q→<br>10N~18N : 10min.<br>22N~R10 : 15min.<br>R12~100 : 30min.<br>120~220 : 20min.  | ΔL/L→<br>Within±10%<br>Q→<br>10N : 10min.<br>12N~33N : 15min.<br>39N~R10 : 20min.<br>R12~4R7 : 30min.<br>5R6~330 : 25min.<br>390~820 : 20min.<br>101 : 15min. | ΔL/L→Within±10% |          |          |   |        |        |        |        |         | ΔL/L→<br>Within±5%<br>※ΔL/L→<br>within±0.5nH<br>8.2 n H<br>ΔQ/Q→<br>Within±20%<br>※ΔQQ<br>→within<br>±5 under<br>8.2 n H | LER · LEM · LB · LBC · LBH<br>Temperature : -40±2°C<br>Duration : 1000 hrs<br>Recovery : At least 1 hr of recovery the standard condition after the removal from test chamber, followed by measurement within 2 hrs. |
| 24.Standard condition        | "Standard condition" referred to herein defined as follows : 5 to 35°C of temperature, 45 to 85% relative humidity, and 86 to 106kPa of air pressure. When there are questions concerning measurement results : In order to provide correlation data, the test shall be conducted under condition of 20±2°C of temperature, 45 to 85% to 106kPa of air pressure. Unless otherwise specified all the test are conducted under the "standard condition" |   |                 |          |          | Standard test condition : Unless otherwise specified, Temperature 20±15°C of temperature, 65±20% of relative humidity. When there are question concerning measurement result : In order to provide correlation date, the test shall be condition of 20±2°C of temperature, 65±5% relative humidity.<br>Inductance is in accordance with our measured value. |        |        |        |        |         |  |  |

## PRECAUTIONS

LER Type, LEM Type, LB Type

| Stages                                   | Precautions  | Technical considerations   |
|--|--|--|
| 1.Circuit Design                         | <p>Operating environment,</p> <p>1.The products described in this specification are intended for use in general electronic equipment,(office supply equipment, telecommunications systems, measuring equipment, and household equipment). They are not intended for use in mission-critical equipment or systems requiring special quality and high reliability (traffic systems, safety equipment, aerospace systems, nuclear control systems and medical equipment including life-support systems,) where product failure might result in loss of life, injury or damage. For such uses, contact TAIYO YUDEN Sales Department in advance.</p>  |  |
| 2.PCB Design                             | <p>Land pattern design</p> <p>1.Please contact any of our offices for a land pattern, and refer to a recommended land pattern of specifications.</p>   |  |
| 3.Considerations for automatic placement | <p>Adjustment of mounting machine</p> <p>1.Excessive impact load should not be imposed on the products when mounting onto the PC boards.</p> <p>2.Mounting and soldering conditions should be checked beforehand.</p>  | <p>1. When installing products, care should be taken not to apply distortion stress as it may deform the products.</p>   |
| 4.Soldering                              | <p>Wave soldering</p> <p>1.Please refer to the specifications in the catalog for a wave soldering.</p> <p>Reflow soldering</p> <p>1.Please contact any of our offices for a reflow soldering, and refer to the recommended condition specified.</p> <p>2.LER012 Type, LB Type</p> <p>Reflow soldering only.</p> <p>Lead free soldering</p> <p>1.When using products with lead free soldering, we request to use them after confirming of adhesion, temperature of resistance to soldering heat, etc. sufficiently.</p> <p>Recommended conditions for using a soldering iron</p> <p>Put the soldering iron on the land-pattern.</p> <p>Soldering iron's temperature - Below 350 °C</p> <p>Duration - 3 seconds or less</p> <p>The soldering iron should not directly touch the inductor.</p>          | <p>1.If products are used beyond the range of the recommended conditions, heat stresses may deform the products, and consequently degrade the reliability of the products.</p>   |
| 5.Cleaning                               | <p>Cleaning conditions</p> <p>LB Type</p> <p>1.Washing by supersonic waves shall be avoided.</p>   | <p>LB Type</p> <p>1.If washing by supersonic waves, supersonic waves may cause broken products.</p>  |
| 6.Handling                               | <p>Handling</p> <p>1.Keep the inductors away from all magnets and magnetic objects.</p> <p>Breakaway PC boards (splitting along perforations)</p> <p>1.When splitting the PC board after mounting inductors, care should be taken not to give any stresses of deflection or twisting to the board.</p> <p>2.Board separation should not be done manually, but by using the appropriate devices.</p> <p>Mechanical considerations</p> <p>1.Please do not give the inductors any excessive mechanical shocks.</p>  | <p>1.There is a case that a characteristic varies with magnetic influence.</p> <p>1.Planning pattern configurations and the position of products should be carefully performed to minimize stress.</p> <p>1.There is a case to be damaged by a mechanical shock.</p> |
| 7.Storage conditions                     | <p>Storage</p> <p>1.To maintain the solderability of terminal electrodes and to keep the packing material in good condition, temperature and humidity in the storage area should be controlled.</p> <p>• Recommended conditions</p> <p>Ambient temperature      0~40°C</p> <p>Humidity                      Below 70% RH</p> <p>The ambient temperature must be kept below 30°C Even under ideal storage conditions, solderability of products electrodes may decrease as time passes. For this reason, LE type inductors should be used within one year from the time of delivery.</p> <p>LER type, LB type</p> <p>Please should be used within 6 months from the time of delivery.</p> <p>LE type</p> <p>In case of storage over 6 months, solderability shall be checked before actual usage.</p> | <p>1. Under a high temperature and humidity environment, problems such as reduced solderability caused by oxidation of terminal electrodes and deterioration of taping/packaging materials may take place.</p>   |