

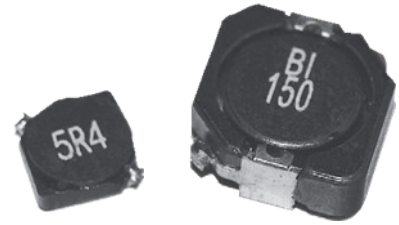
# Miniature Low Profile Shielded Surface Mount Inductors



## HM66 Series

### Features:

- Operating temperature range -40°C to +125°C
- Ambient temperature, maximum 80°C
- Temperature rise, maximum 40°C
- Operating frequency up to 3MHz
- RoHS compliant



All parts are Pb free and comply with EU RoHS Directive 2011/65/EU with amendment EU 2015/863 (RoHS 3)

### Description:

The HM66 is a miniature low profile shielded surface mount inductor. It is characterized by low losses at high frequencies. These compact power inductors offer excellent current handling, low DC resistance and magnetic shielding for high-density mounting. There are total 8 case sizes on this from 3.8x3.8mm 1.85mm max height up to 10.0x10.2mm 4.0mm max height.

### Applications:

- Low profile buck DC-DC converters
- Low profile POL converters
- Output power filter for forward converters
- Power inductance for electronic breakers
- Industrial automation systems
- Industrial DC-DC converters
- Industrial EMI filters

#### 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.

# Miniature Low Profile Shielded Surface Mount Inductors



## HM66 Series

### Electrical Specifications

| Part Number      | Inductance <sup>(1)</sup><br>Nominal<br>$\mu\text{H} \pm 20\%$ | DC<br>Resistance<br>$\Omega$ Max. | Rated <sup>(2)</sup><br>Current<br>Amps | Figure |
|------------------|----------------------------------------------------------------|-----------------------------------|-----------------------------------------|--------|
| HM66-151R5LFTR7  | 1.5                                                            | 0.055                             | 1.55                                    | 1      |
| HM66-152R2LFTR7  | 2.2                                                            | 0.072                             | 1.20                                    | 1      |
| HM66-153R3LFTR7  | 3.3                                                            | 0.085                             | 1.10                                    | 1      |
| HM66-154R7LFTR7  | 4.7                                                            | 0.105                             | 0.90                                    | 1      |
| HM66-156R8LFTR7  | 6.8                                                            | 0.170                             | 0.73                                    | 1      |
| HM66-15100LFTR7  | 10                                                             | 0.210                             | 0.55                                    | 1      |
| HM66-15150LFTR7  | 15                                                             | 0.295                             | 0.45                                    | 1      |
| HM66-15220LFTR7  | 22                                                             | 0.430                             | 0.40                                    | 1      |
| HM66-15330LFTR7  | 33                                                             | 0.675                             | 0.32                                    | 1      |
| HM66-201R0LFTR13 | 1.0                                                            | 0.045                             | 1.72                                    | 1      |
| HM66-202R2LFTR13 | 2.2                                                            | 0.075                             | 1.32                                    | 1      |
| HM66-202R7LFTR13 | 2.7                                                            | 0.105                             | 1.28                                    | 1      |
| HM66-203R3LFTR13 | 3.3                                                            | 0.110                             | 1.04                                    | 1      |
| HM66-203R9LFTR13 | 3.9                                                            | 0.155                             | 0.88                                    | 1      |
| HM66-204R7LFTR13 | 4.7                                                            | 0.162                             | 0.84                                    | 1      |
| HM66-205R6LFTR13 | 5.6                                                            | 0.170                             | 0.80                                    | 1      |
| HM66-206R8LFTR13 | 6.8                                                            | 0.200                             | 0.76                                    | 1      |
| HM66-208R2LFTR13 | 8.2                                                            | 0.245                             | 0.68                                    | 1      |
| HM66-20100LFTR13 | 10                                                             | 0.200                             | 0.61                                    | 1      |
| HM66-20120LFTR13 | 12                                                             | 0.210                             | 0.56                                    | 1      |
| HM66-20150LFTR13 | 15                                                             | 0.240                             | 0.50                                    | 1      |
| HM66-20180LFTR13 | 18                                                             | 0.338                             | 0.48                                    | 1      |
| HM66-20220LFTR13 | 22                                                             | 0.397                             | 0.41                                    | 1      |
| HM66-20270LFTR13 | 27                                                             | 0.441                             | 0.35                                    | 1      |
| HM66-20330LFTR13 | 33                                                             | 0.694                             | 0.32                                    | 1      |
| HM66-20390LFTR13 | 39                                                             | 0.709                             | 0.30                                    | 1      |
| HM66-301R2LFTR13 | 1.2                                                            | 0.024                             | 2.56                                    | 1      |
| HM66-301R8LFTR13 | 1.8                                                            | 0.028                             | 2.20                                    | 1      |
| HM66-302R2LFTR13 | 2.2                                                            | 0.031                             | 2.04                                    | 1      |

#### 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.

# Miniature Low Profile Shielded Surface Mount Inductors



## HM66 Series

### Electrical Specifications

| Part Number      | Inductance <sup>(1)</sup><br>Nominal<br>$\mu\text{H} \pm 20\%$ | DC<br>Resistance<br>$\Omega$ Max. | Rated <sup>(2)</sup><br>Current<br>Amps | Figure |
|------------------|----------------------------------------------------------------|-----------------------------------|-----------------------------------------|--------|
| HM66-302R7LFTR13 | 2.7                                                            | 0.043                             | 1.60                                    | 1      |
| HM66-303R3LFTR13 | 3.3                                                            | 0.049                             | 1.57                                    | 1      |
| HM66-303R9LFTR13 | 3.9                                                            | 0.065                             | 1.44                                    | 1      |
| HM66-304R7LFTR13 | 4.7                                                            | 0.072                             | 1.32                                    | 1      |
| HM66-305R6LFTR13 | 5.6                                                            | 0.101                             | 1.17                                    | 1      |
| HM66-306R8LFTR13 | 6.8                                                            | 0.109                             | 1.12                                    | 1      |
| HM66-308R2LFTR13 | 8.2                                                            | 0.118                             | 1.04                                    | 1      |
| HM66-30100LFTR13 | 10                                                             | 0.128                             | 1.00                                    | 1      |
| HM66-30120LFTR13 | 12                                                             | 0.132                             | 0.84                                    | 1      |
| HM66-30150LFTR13 | 15                                                             | 0.149                             | 0.76                                    | 1      |
| HM66-30180LFTR13 | 18                                                             | 0.166                             | 0.72                                    | 1      |
| HM66-30220LFTR13 | 22                                                             | 0.235                             | 0.70                                    | 1      |
| HM66-30270LFTR13 | 27                                                             | 0.261                             | 0.58                                    | 1      |
| HM66-30330LFTR13 | 33                                                             | 0.378                             | 0.56                                    | 1      |
| HM66-30390LFTR13 | 39                                                             | 0.384                             | 0.50                                    | 1      |
| HM66-30470LFTR13 | 47                                                             | 0.587                             | 0.48                                    | 1      |
| HM66-30560LFTR13 | 56                                                             | 0.625                             | 0.41                                    | 1      |
| HM66-30680LFTR13 | 68                                                             | 0.699                             | 0.35                                    | 1      |
| HM66-30820LFTR13 | 82                                                             | 0.915                             | 0.32                                    | 1      |
| HM66-30101LFTR13 | 100                                                            | 1.020                             | 0.29                                    | 1      |
| HM66-30121LFTR13 | 120                                                            | 1.270                             | 0.27                                    | 1      |
| HM66-30151LFTR13 | 150                                                            | 1.350                             | 0.24                                    | 1      |
| HM66-30181LFTR13 | 180                                                            | 1.540                             | 0.22                                    | 1      |
| HM66-404R1LFTR13 | 4.1                                                            | 0.057                             | 1.95                                    | 1      |
| HM66-405R4LFTR13 | 5.4                                                            | 0.076                             | 1.60                                    | 1      |
| HM66-406R2LFTR13 | 6.2                                                            | 0.096                             | 1.40                                    | 1      |
| HM66-408R9LFTR13 | 8.9                                                            | 0.116                             | 1.25                                    | 1      |
| HM66-40100LFTR13 | 10                                                             | 0.124                             | 1.20                                    | 1      |
| HM66-40120LFTR13 | 12                                                             | 0.153                             | 1.10                                    | 1      |

#### 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.

# Miniature Low Profile Shielded Surface Mount Inductors



## HM66 Series

### Electrical Specifications

| Part Number      | Inductance <sup>(1)</sup><br>Nominal<br>$\mu\text{H} \pm 20\%$ | DC<br>Resistance<br>$\Omega$ Max. | Rated <sup>(2)</sup><br>Current<br>Amps | Figure |
|------------------|----------------------------------------------------------------|-----------------------------------|-----------------------------------------|--------|
| HM66-40150LFTR13 | 15                                                             | 0.196                             | 0.97                                    | 1      |
| HM66-40180LFTR13 | 18                                                             | 0.210                             | 0.85                                    | 1      |
| HM66-40220LFTR13 | 22                                                             | 0.290                             | 0.80                                    | 1      |
| HM66-40270LFTR13 | 27                                                             | 0.330                             | 0.75                                    | 1      |
| HM66-40330LFTR13 | 33                                                             | 0.386                             | 0.65                                    | 1      |
| HM66-40390LFTR13 | 39                                                             | 0.520                             | 0.57                                    | 1      |
| HM66-40470LFTR13 | 47                                                             | 0.595                             | 0.54                                    | 1      |
| HM66-40560LFTR13 | 56                                                             | 0.665                             | 0.50                                    | 1      |
| HM66-40680LFTR13 | 68                                                             | 0.840                             | 0.43                                    | 1      |
| HM66-40820LFTR13 | 82                                                             | 0.978                             | 0.41                                    | 1      |
| HM66-40101LFTR13 | 100                                                            | 1.200                             | 0.36                                    | 1      |
| HM66-502R5LFTR13 | 2.5                                                            | 0.018                             | 2.60                                    | 1      |
| HM66-503R0LFTR13 | 3.0                                                            | 0.024                             | 2.40                                    | 1      |
| HM66-504R2LFTR13 | 4.2                                                            | 0.031                             | 2.20                                    | 1      |
| HM66-505R3LFTR13 | 5.3                                                            | 0.038                             | 1.90                                    | 1      |
| HM66-506R2LFTR13 | 6.2                                                            | 0.045                             | 1.80                                    | 1      |
| HM66-508R2LFTR13 | 8.2                                                            | 0.053                             | 1.60                                    | 1      |
| HM66-50100LFTR13 | 10                                                             | 0.065                             | 1.30                                    | 1      |
| HM66-50120LFTR13 | 12                                                             | 0.076                             | 1.20                                    | 1      |
| HM66-50150LFTR13 | 15                                                             | 0.103                             | 1.10                                    | 1      |
| HM66-50180LFTR13 | 18                                                             | 0.110                             | 1.00                                    | 1      |
| HM66-50220LFTR13 | 22                                                             | 0.122                             | 0.90                                    | 1      |
| HM66-50270LFTR13 | 27                                                             | 0.175                             | 0.85                                    | 1      |
| HM66-50330LFTR13 | 33                                                             | 0.189                             | 0.75                                    | 1      |
| HM66-50390LFTR13 | 39                                                             | 0.212                             | 0.70                                    | 1      |
| HM66-50470LFTR13 | 47                                                             | 0.260                             | 0.62                                    | 1      |
| HM66-50560LFTR13 | 56                                                             | 0.305                             | 0.58                                    | 1      |
| HM66-50680LFTR13 | 68                                                             | 0.355                             | 0.52                                    | 1      |
| HM66-50820LFTR13 | 82                                                             | 0.463                             | 0.46                                    | 1      |

#### 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.

# Miniature Low Profile Shielded Surface Mount Inductors



## HM66 Series

### Electrical Specifications

| Part Number      | Inductance <sup>(1)</sup><br>Nominal<br>$\mu\text{H} \pm 20\%$ | DC<br>Resistance<br>$\Omega$ Max. | Rated <sup>(2)</sup><br>Current<br>Amps | Figure |
|------------------|----------------------------------------------------------------|-----------------------------------|-----------------------------------------|--------|
| HM66-50101LFTR13 | 100                                                            | 0.520                             | 0.42                                    | 1      |
| HM66-603R0LFTR13 | 3.0                                                            | 0.024                             | 3.00                                    | 1      |
| HM66-603R9LFTR13 | 3.9                                                            | 0.027                             | 2.60                                    | 1      |
| HM66-605R0LFTR13 | 5.0                                                            | 0.031                             | 2.40                                    | 1      |
| HM66-606R0LFTR13 | 6.0                                                            | 0.035                             | 2.25                                    | 1      |
| HM66-607R3LFTR13 | 7.3                                                            | 0.054                             | 2.10                                    | 1      |
| HM66-608R6LFTR13 | 8.6                                                            | 0.058                             | 1.85                                    | 1      |
| HM66-60100LFTR13 | 10                                                             | 0.065                             | 1.70                                    | 1      |
| HM66-60120LFTR13 | 12                                                             | 0.070                             | 1.55                                    | 1      |
| HM66-60150LFTR13 | 15                                                             | 0.084                             | 1.40                                    | 1      |
| HM66-60180LFTR13 | 18                                                             | 0.095                             | 1.32                                    | 1      |
| HM66-60220LFTR13 | 22                                                             | 0.128                             | 1.20                                    | 1      |
| HM66-60270LFTR13 | 27                                                             | 0.142                             | 1.05                                    | 1      |
| HM66-60330LFTR13 | 33                                                             | 0.165                             | 0.97                                    | 1      |
| HM66-60390LFTR13 | 39                                                             | 0.210                             | 0.86                                    | 1      |
| HM66-60470LFTR13 | 47                                                             | 0.238                             | 0.80                                    | 1      |
| HM66-60560LFTR13 | 56                                                             | 0.277                             | 0.73                                    | 1      |
| HM66-60680LFTR13 | 68                                                             | 0.304                             | 0.65                                    | 1      |
| HM66-60820LFTR13 | 82                                                             | 0.390                             | 0.60                                    | 1      |
| HM66-60101LFTR13 | 100                                                            | 0.535                             | 0.54                                    | 1      |
| HM66-703R3LFTR13 | 3.3                                                            | 0.020                             | 3.50                                    | 1      |
| HM66-705R0LFTR13 | 5.0                                                            | 0.024                             | 2.90                                    | 1      |
| HM66-706R2LFTR13 | 6.2                                                            | 0.027                             | 2.50                                    | 1      |
| HM66-707R4LFTR13 | 7.4                                                            | 0.031                             | 2.30                                    | 1      |
| HM66-708R7LFTR13 | 8.7                                                            | 0.034                             | 2.20                                    | 1      |
| HM66-70100LFTR13 | 10                                                             | 0.038                             | 2.00                                    | 1      |
| HM66-70120LFTR13 | 12                                                             | 0.053                             | 1.70                                    | 1      |
| HM66-70150LFTR13 | 15                                                             | 0.057                             | 1.60                                    | 1      |
| HM66-70180LFTR13 | 18                                                             | 0.092                             | 1.50                                    | 1      |

#### 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.

# Miniature Low Profile Shielded Surface Mount Inductors



## HM66 Series

### Electrical Specifications

| Part Number      | Inductance <sup>(1)</sup><br>Nominal<br>$\mu\text{H} \pm 20\%$ | DC<br>Resistance<br>$\Omega$ Max. | Rated <sup>(2)</sup><br>Current<br>Amps | Figure |
|------------------|----------------------------------------------------------------|-----------------------------------|-----------------------------------------|--------|
| HM66-70220LFTR13 | 22                                                             | 0.096                             | 1.30                                    | 1      |
| HM66-70270LFTR13 | 27                                                             | 0.109                             | 1.20                                    | 1      |
| HM66-70330LFTR13 | 33                                                             | 0.124                             | 1.10                                    | 1      |
| HM66-70390LFTR13 | 39                                                             | 0.138                             | 1.00                                    | 1      |
| HM66-70470LFTR13 | 47                                                             | 0.155                             | 0.95                                    | 1      |
| HM66-70560LFTR13 | 56                                                             | 0.202                             | 0.85                                    | 1      |
| HM66-70680LFTR13 | 68                                                             | 0.234                             | 0.75                                    | 1      |
| HM66-70820LFTR13 | 82                                                             | 0.324                             | 0.70                                    | 1      |
| HM66-70101LFTR13 | 100                                                            | 0.358                             | 0.65                                    | 1      |
| HM66-70221LFTR13 | 220                                                            | 0.820                             | 0.45                                    | 1      |
| HM66-801R5LFTR13 | 1.5                                                            | 0.0081                            | 10.0                                    | 2      |
| HM66-802R5LFTR13 | $2.5 \pm 30\%$                                                 | 0.0105                            | 7.50                                    | 2      |
| HM66-803R8LFTR13 | 3.8                                                            | 0.017                             | 6.00                                    | 2      |
| HM66-805R2LFTR13 | 5.2                                                            | 0.022                             | 5.50                                    | 2      |
| HM66-807R0LFTR13 | 7                                                              | 0.027                             | 4.80                                    | 2      |
| HM66-80100LFTR13 | 10                                                             | 0.035                             | 4.40                                    | 2      |
| HM66-80150LFTR13 | 15                                                             | 0.050                             | 3.60                                    | 2      |
| HM66-80220LFTR13 | 22                                                             | 0.073                             | 2.90                                    | 2      |
| HM66-80330LFTR13 | 33                                                             | 0.093                             | 2.30                                    | 2      |
| HM66-80470LFTR13 | 47                                                             | 0.128                             | 2.10                                    | 2      |
| HM66-80680LFTR13 | 68                                                             | 0.213                             | 1.50                                    | 2      |
| HM66-80101LFTR13 | 100                                                            | 0.304                             | 1.35                                    | 2      |
| HM66-80151LFTR13 | 150                                                            | 0.506                             | 1.15                                    | 2      |
| HM66-80221LFTR13 | 220                                                            | 0.756                             | 0.92                                    | 2      |
| HM66-80331LFTR13 | 330                                                            | 1.090                             | 0.70                                    | 2      |
| HM66-80561LFTR13 | 560                                                            | 1.900                             | 0.45                                    | 2      |
| HM66-80102LFTR13 | 1000                                                           | 4.000                             | 0.40                                    | 2      |

Notes: (1) Test conditions for case sizes 15, 20, 30, 80 = 100 kHz, 0.1 V without DC current. Test conditions for case sizes 40, 50, 60, 70 = 10 kHz, 0.1 V without DC current.  
(2) Rated DC current is the approximate current at which inductance will be decreased by 35% from its initial (zero DC) value or the DC current at which  $\Delta T = 40^\circ\text{C}$ , whichever is lower.

#### General Note

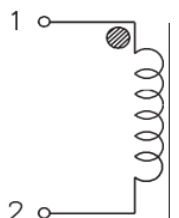
TT Electronics reserves the right to make changes in product specification without notice or liability. All information is subject to TT Electronics' own data and is considered accurate at time of going to print.

# Miniature Low Profile Shielded Surface Mount Inductors



## HM66 Series

### Electrical Schematic



### Outline Dimensions

Figure 1

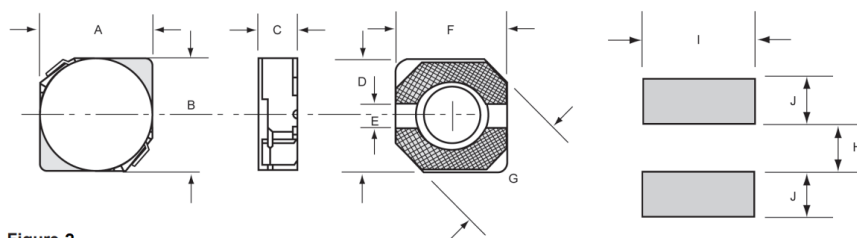
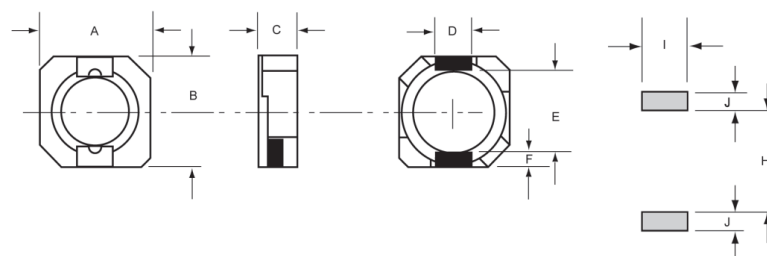


Figure 2



| Case Size | Figure | A          | B          | C Max | D         | E          | F          | G Max | H   | I   | J    |
|-----------|--------|------------|------------|-------|-----------|------------|------------|-------|-----|-----|------|
| 15        | 1      | 3.8 ± 0.5  | 3.8 ± 0.5  | 1.85  | 3.8 ± 0.3 | 1.1 ± 0.15 | 3.8 ± 0.3  | 5.5   | 1.1 | 4.5 | 1.7  |
| 20        | 1      | 4.7 ± 0.5  | 4.7 ± 0.5  | 2.1   | 4.5 ± 0.3 | 1.5 ± 0.15 | 4.5 ± 0.3  | 6.9   | 1.5 | 5.3 | 1.9  |
| 30        | 1      | 4.7 ± 0.5  | 4.7 ± 0.5  | 3.0   | 4.5 ± 0.3 | 1.5 ± 0.15 | 4.5 ± 0.3  | 6.9   | 1.5 | 5.3 | 1.9  |
| 40        | 1      | 5.7 ± 0.5  | 5.7 ± 0.5  | 2.0   | 5.5 ± 0.3 | 2.0 ± 0.15 | 5.5 ± 0.3  | 8.2   | 2.0 | 6.3 | 2.15 |
| 50        | 1      | 5.7 ± 0.5  | 5.7 ± 0.5  | 3.0   | 5.5 ± 0.3 | 2.1 ± 0.1  | 5.5 ± 0.3  | 8.2   | 2.0 | 6.3 | 2.15 |
| 60        | 1      | 6.7 ± 0.5  | 6.7 ± 0.5  | 3.0   | 6.5 ± 0.3 | 2.1 ± 0.1  | 6.5 ± 0.3  | 9.5   | 2.0 | 7.3 | 2.65 |
| 70        | 1      | 6.7 ± 0.5  | 6.7 ± 0.5  | 4.0   | 6.5 ± 0.3 | 2.1 ± 0.1  | 6.5 ± 0.3  | 9.5   | 2.0 | 7.3 | 2.65 |
| 80        | 2      | 10.0 ± 0.5 | 10.2 ± 0.5 | 4.0   | 3.0 ± 0.1 | 7.7 ± 0.3  | 1.2 ± 0.15 | -     | 7.3 | 3.2 | 1.7  |

#### 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.

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

Ph: +60 9 565 8888

<https://www.ttelectronics.com/contact-us/>

# Miniature Low Profile Shielded Surface Mount Inductors

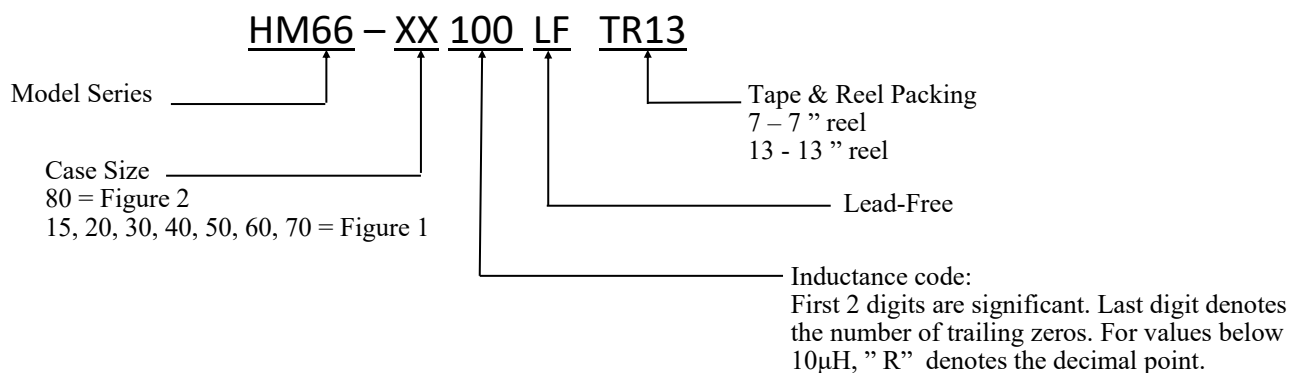


## HM66 Series

### Packaging

|           |                        |           |                      |   |               |
|-----------|------------------------|-----------|----------------------|---|---------------|
| Standard: | Embossed Tape and Reel |           |                      |   |               |
|           | Reel:                  | Diameter: | Case size 15         | = | 7" (177.8mm)  |
|           |                        |           | All other case sizes | = | 13" (330.2mm) |
|           |                        | Capacity: | Case size 20         | = | 3,000 Units   |
|           |                        |           | Case size 30,40,50   | = | 2,000 Units   |
|           |                        |           | Case size 60         | = | 1,500 Units   |
|           |                        |           | Case size 15,70      | = | 1,000 Units   |
|           |                        |           | Case size 80         | = | 800 Units     |

### 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.



1. All components are manufactured, designed, and promoted for application in general electronics devices. For specific application use such as in automotive, medical, military and aerospace industry other than for general electronic devices, BI Technologies must be asked for written approval before incorporating the components into those areas.
2. Any components that will be used in high-reliability / high level of safety applications should be pre-evaluated by the end customer especially in customer applications in which the malfunction or failure of an electronic component could endanger human life or health.
3. The customer shall be responsible for evaluating and confirming BI Technologies product is suitable for use in customer's applications. If customer applications requiring a very high level of operational safety and especially in customer applications in which a failure of an electronic component could endanger human life or health, it must therefore be ensured by means of suitable design of the customer application or other action taken by the customer such that no injury or damage is sustained by third parties in the event of malfunction or failure of an electronic component.
4. Customer must be cautioned to verify that data sheets are the updated ones before placing orders especially of standard series.
5. Customer need to use the part within warranty period as stated in quotation. Any trouble or failure of electronic components happening during their long life span which cannot be eliminated even after following the instruction within existing technology, BI Technologies would not be liable for it.
6. Many coating/potting materials would shrink as they harden. They therefore applies a pressure on the plastic housing or core. This pressure can have an effect on electrical properties and in extreme cases can damage the core or plastic housing mechanically. It is necessary to check whether the coating/potting material used may attacks or destroys the wire insulation, plastics or glue. The effect of the coating/potting material can change the high-frequency behavior of the components. Many coating/potting materials have a negative effect (chemically and mechanically) on the winding wires, insulation materials and connecting points. Customers are always obligated to determine whether and to what extent their coating materials influence the component. Customers are responsible and bear all risk for the use of the coating material. BI Technologies does not assume any liability for failures of our components that are caused by the coating material.
7. Washing / Cleaning process may jeopardize the product and cause a defect. Washing agents may harm the long-term functionality of the product. The customer shall be responsible for evaluating and confirming the product is suitable for use in customer's applications upon washing/cleaning process as its customer process application related.
8. Products should not be kept in unsuitable storage conditions, such as areas susceptible to high humidity, high temperatures, dust or corrosion where for example atmospheres should be free of chlorine and sulfur bearing compounds. Recommended storage condition in general is +10°C ... +40 °C, humidity ≤75% RH. Temperature fluctuations should be minimized to avoid condensation on the parts. Avoid storage near strong magnetic fields, as this might magnetize the product.
9. The storage period should not be longer than 12 months (In the specific storage environment). Oxidization may occur on the terminals. Hence all products shall be consumed within 12 months after the shipping date. If the time is more than 12 months, please check the solderability before use it.
10. Don't touch electrodes terminals directly with bare hands as oil stains may inhibit proper soldering. Always ensure optimum conditions for soldering.
11. Terminals should not be bend or subjected to excessive stress. If the terminals are cable harness type, do not use cable harness to carry the unit or pull the cable harness with a force. It may cause failure on unit immediately or latent effect.
12. Avoid placing magnetic components near the edge of the PCB. It is in customer discretion to have proper design and PCB layout such that component are not damaged in any way of handling nor causing any EMI issue.

#### 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.

13. Don't touch any exposed winding part and avoid coming into contact with the guide of the electrode as due to charge stored it may cause an electric shock. It is customer discretion to inform all relevant personal handling the components accordingly.
14. The inductor / coil / common mode choke generates heat when current is applied. Please take consideration on this during the design or testing stage.
15. Ferrites are sensitive to direct impact. This can cause the core material to flake, or lead to breakage of the core. Always handle the product with care to prevent any damage.
16. Our specification specifies the quality of the component as a single unit. Please ensure the component is thoroughly evaluated in customer application circuit, therefor even for customized products, conclusive validation of the component in the circuit can only be carried out by customer.
17. The general testing condition is in the room temperature  $25^{\circ}\text{C} \pm 5^{\circ}\text{C}$  and humidity under 70% RH, which is applied to all products. It is the customer's responsibility to validate that a particular product with the properties described in the product specification is suitable for use in a particular application. Parameters provided in datasheets and / or specifications may vary in different applications and performance may vary over time. All operating parameters, including typical parameters, must be validated for each customer application by the customer.
18. If have any query, please feel free to contact our sales team.

#### 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.