

## Electrical / Environmental

- Operating Temperature Range -40°C to +125°C
- Ambient Temperature, Maximum 80°C
- Insulation System Class B, 130°C
- Temperature Rise, Maximum 40°C
- Operating Frequency Up to 3MHz

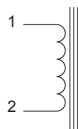
# HM76

Drum Core, Space Efficient High Performance  
Surface Mount Inductors

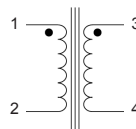


## Schematics

Schematic A



Schematic B



## Specifications (Case Size 10 and 20)

| Part Number   | Inductance<br>$\mu\text{H} \pm 20\%^{(1)}$ | DC Resistance<br>@ 25°C<br>$\Omega$ Max. | Rated Current <sup>(2,4)</sup><br>Amps | Schematic | Figure |
|---------------|--------------------------------------------|------------------------------------------|----------------------------------------|-----------|--------|
| HM76-101R0JLF | 1.0                                        | 0.03                                     | 2.90                                   | A         | 1      |
| HM76-101R5JLF | 1.5                                        | 0.05                                     | 2.80                                   | A         | 1      |
| HM76-102R2JLF | 2.2                                        | 0.06                                     | 2.40                                   | A         | 1      |
| HM76-103R3JLF | 3.3                                        | 0.09                                     | 2.00                                   | A         | 1      |
| HM76-104R7JLF | 4.7                                        | 0.09                                     | 1.50                                   | A         | 1      |
| HM76-106R8JLF | 6.8                                        | 0.17                                     | 1.30                                   | A         | 1      |
| HM76-10100JLF | 10                                         | 0.16                                     | 1.10                                   | A         | 1      |
| HM76-10150JLF | 15                                         | 0.30                                     | 0.80                                   | A         | 1      |
| HM76-10220JLF | 22                                         | 0.43                                     | 0.70                                   | A         | 1      |
| HM76-10330JLF | 33                                         | 0.69                                     | 0.57                                   | A         | 1      |
| HM76-10470JLF | 47                                         | 0.92                                     | 0.46                                   | A         | 1      |
| HM76-10680JLF | 68                                         | 1.39                                     | 0.37                                   | A         | 1      |
| HM76-10101JLF | 100                                        | 1.98                                     | 0.28                                   | A         | 1      |
| HM76-10151JLF | 150                                        | 3.08                                     | 0.22                                   | A         | 1      |
| HM76-10221JLF | 220                                        | 4.47                                     | 0.18                                   | A         | 1      |
| HM76-10331JLF | 330                                        | 6.90                                     | 0.15                                   | A         | 1      |
| HM76-10471JLF | 470                                        | 11.55                                    | 0.12                                   | A         | 1      |
| HM76-20100JLF | 10                                         | 0.07                                     | 2.00                                   | A         | 3      |
| HM76-20150JLF | 15                                         | 0.09                                     | 1.50                                   | A         | 3      |
| HM76-20220JLF | 22                                         | 0.15                                     | 1.30                                   | A         | 3      |
| HM76-20330JLF | 33                                         | 0.21                                     | 1.10                                   | A         | 3      |
| HM76-20470JLF | 47                                         | 0.31                                     | 0.80                                   | A         | 3      |
| HM76-20680JLF | 68                                         | 0.42                                     | 0.70                                   | A         | 3      |
| HM76-20101JLF | 100                                        | 0.58                                     | 0.60                                   | A         | 3      |
| HM76-20151JLF | 150                                        | 0.89                                     | 0.50                                   | A         | 3      |
| HM76-20221JLF | 220                                        | 1.30                                     | 0.40                                   | A         | 3      |
| HM76-20331JLF | 330                                        | 2.00                                     | 0.30                                   | A         | 3      |
| HM76-20471JLF | 470                                        | 2.50                                     | 0.20                                   | A         | 3      |
| HM76-20681JLF | 680                                        | 3.50                                     | 0.10                                   | A         | 3      |
| HM76-20102JLF | 1,000                                      | 6.00                                     | 0.05                                   | A         | 3      |

## Specifications (Case Size 30 and 40)

| Part Number   | Inductance<br>$\mu\text{H} \pm 20\%^{(1)}$ | DC Resistance<br>@ 25°C <sup>(3)</sup><br>$\Omega$ Max. | Rated Current <sup>(2,4)</sup><br>Amps | Schematic | Figure |
|---------------|--------------------------------------------|---------------------------------------------------------|----------------------------------------|-----------|--------|
| HM76-301R0JLF | 1.0                                        | 0.01                                                    | 8.50                                   | A         | 1      |
| HM76-301R5JLF | 1.5                                        | 0.01                                                    | 7.90                                   | A         | 1      |
| HM76-302R2JLF | 2.2                                        | 0.02                                                    | 7.40                                   | A         | 1      |
| HM76-303R3JLF | 3.3                                        | 0.02                                                    | 6.60                                   | A         | 1      |
| HM76-304R7JLF | 4.7                                        | 0.02                                                    | 6.00                                   | A         | 1      |
| HM76-306R8JLF | 6.8                                        | 0.03                                                    | 5.20                                   | A         | 1      |
| HM76-308R2JLF | 8.2                                        | 0.03                                                    | 5.00                                   | A         | 1      |

### Specifications (Case Size 30 and 40) (Cont'd)

| Part Number   | Inductance<br>$\mu\text{H} \pm 20\%^{(1)}$ | DC Resistance<br>@ 25°C <sup>(3)</sup><br>$\Omega$ Max. | Rated Current <sup>(2,4)</sup><br>Amps | Schematic | Figure |
|---------------|--------------------------------------------|---------------------------------------------------------|----------------------------------------|-----------|--------|
|               |                                            |                                                         |                                        |           |        |
| HM76-30100JLF | 10                                         | 0.04                                                    | 4.60                                   | A         | 1      |
| HM76-30150JLF | 15                                         | 0.05                                                    | 3.70                                   | A         | 1      |
| HM76-30220JLF | 22                                         | 0.07                                                    | 3.10                                   | A         | 1      |
| HM76-30330JLF | 33                                         | 0.11                                                    | 2.50                                   | A         | 1      |
| HM76-30470JLF | 47                                         | 0.16                                                    | 2.00                                   | A         | 1      |
| HM76-30680JLF | 68                                         | 0.20                                                    | 1.80                                   | A         | 1      |
| HM76-30820JLF | 82                                         | 0.24                                                    | 1.58                                   | A         | 1      |
| HM76-30101JLF | 100                                        | 0.30                                                    | 1.50                                   | A         | 1      |
| HM76-30151JLF | 150                                        | 0.44                                                    | 1.20                                   | A         | 1      |
| HM76-30221JLF | 220                                        | 0.64                                                    | 1.00                                   | A         | 1      |
| HM76-30331JLF | 330                                        | 1.00                                                    | 0.80                                   | A         | 1      |
| HM76-30471JLF | 470                                        | 1.50                                                    | 0.50                                   | A         | 1      |
| HM76-30681JLF | 680                                        | 2.20                                                    | 0.40                                   | A         | 1      |
| HM76-30102JLF | 1,000                                      | 3.15                                                    | 0.30                                   | A         | 1      |
| HM76-403R3JLF | 3.3                                        | 0.01                                                    | 9.80                                   | B         | 2      |
| HM76-404R7JLF | 4.7                                        | 0.01                                                    | 9.30                                   | B         | 2      |
| HM76-406R8JLF | 6.8                                        | 0.02                                                    | 7.70                                   | B         | 2      |
| HM76-408R2JLF | 8.2                                        | 0.02                                                    | 7.00                                   | B         | 2      |
| HM76-40100JLF | 10                                         | 0.02                                                    | 6.50                                   | B         | 2      |
| HM76-40150JLF | 15                                         | 0.03                                                    | 5.30                                   | B         | 2      |
| HM76-40220JLF | 22                                         | 0.04                                                    | 4.40                                   | B         | 2      |
| HM76-40330JLF | 33                                         | 0.06                                                    | 3.50                                   | B         | 2      |
| HM76-40470JLF | 47                                         | 0.07                                                    | 3.00                                   | B         | 2      |
| HM76-40680JLF | 68                                         | 0.11                                                    | 2.50                                   | B         | 2      |
| HM76-40820JLF | 82                                         | 0.12                                                    | 2.20                                   | B         | 2      |
| HM76-40101JLF | 100                                        | 0.15                                                    | 2.00                                   | B         | 2      |
| HM76-40151JLF | 150                                        | 0.22                                                    | 1.70                                   | B         | 2      |
| HM76-40221JLF | 220                                        | 0.33                                                    | 1.30                                   | B         | 2      |
| HM76-40331JLF | 330                                        | 0.45                                                    | 1.10                                   | B         | 2      |
| HM76-40471JLF | 470                                        | 0.70                                                    | 0.93                                   | B         | 2      |
| HM76-40681JLF | 680                                        | 1.00                                                    | 0.78                                   | B         | 2      |
| HM76-40102JLF | 1,000                                      | 1.45                                                    | 0.65                                   | B         | 2      |

### Specifications (Case Size 50)

| Part Number   | Inductance<br>$\mu\text{H} \pm 20\%^{(1)}$ | DC Resistance<br>@ 25°C<br>$\Omega$ Max. | Rated Current <sup>(2,4)</sup><br>Amps | Schematic | Figure |
|---------------|--------------------------------------------|------------------------------------------|----------------------------------------|-----------|--------|
|               |                                            |                                          |                                        |           |        |
| HM76-50R78JLF | 0.78                                       | 0.003                                    | 15.0                                   | A         | 3      |
| HM76-501R3JLF | 1.3                                        | 0.0043                                   | 13.7                                   | A         | 3      |
| HM76-502R2JLF | 2.2                                        | 0.006                                    | 12.0                                   | A         | 3      |
| HM76-503R3JLF | 3.3                                        | 0.008                                    | 9.80                                   | A         | 3      |
| HM76-505R6JLF | 5.6                                        | 0.010                                    | 7.50                                   | A         | 3      |
| HM76-50100JLF | 10                                         | 0.023                                    | 6.00                                   | A         | 3      |
| HM76-50150JLF | 15                                         | 0.035                                    | 4.50                                   | A         | 3      |
| HM76-50220JLF | 22                                         | 0.045                                    | 4.00                                   | A         | 3      |
| HM76-50330JLF | 33                                         | 0.075                                    | 3.00                                   | A         | 3      |
| HM76-50470JLF | 47                                         | 0.096                                    | 2.60                                   | A         | 3      |
| HM76-50680JLF | 68                                         | 0.140                                    | 2.30                                   | A         | 3      |
| HM76-50101JLF | 100                                        | 0.190                                    | 1.70                                   | A         | 3      |
| HM76-50151JLF | 150                                        | 0.290                                    | 1.50                                   | A         | 3      |
| HM76-50221JLF | 220                                        | 0.410                                    | 1.20                                   | A         | 3      |
| HM76-50331JLF | 330                                        | 0.540                                    | 1.00                                   | A         | 3      |
| HM76-50471JLF | 470                                        | 0.800                                    | 0.83                                   | A         | 3      |
| HM76-50681JLF | 680                                        | 1.150                                    | 0.72                                   | A         | 3      |
| HM76-50102JLF | 1,000                                      | 1.800                                    | 0.56                                   | A         | 3      |

Notes: (1) Inductance is measured at 100kHz, 0.1 Vrms, without DC current.

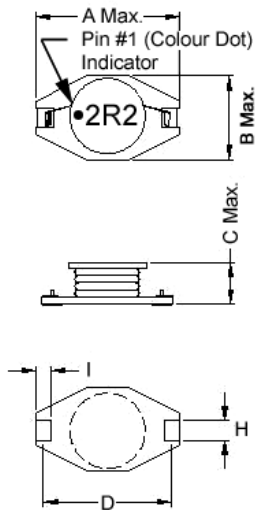
(2) Rated DC current at which inductance will be decreased by 10% from its initial value or the DC current at which  $\Delta T = 40^\circ\text{C}$ , whichever is smaller.

(3) Resistance is measured with both windings connected in parallel (case size 40 only).

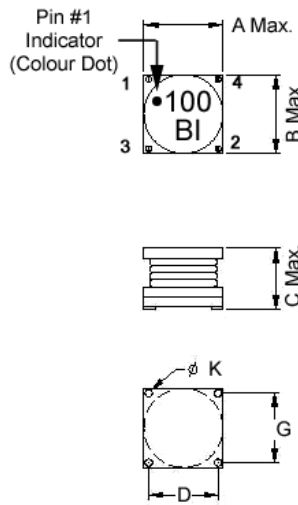
(4) Rated current will be decreased by 50% when parts are connected as coupled inductors.

## Outline Dimensions (Inch/mm)

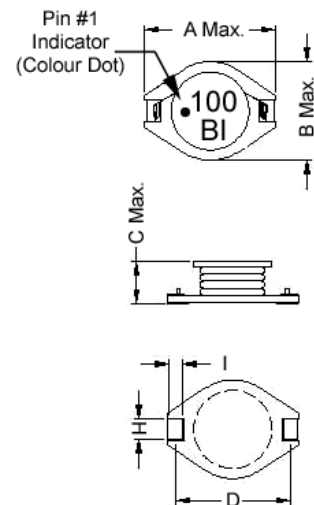
**Figure 1**  
( Case Size: 10 & 30 )



**Figure 2**  
( Case Size: 40 )

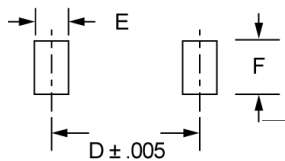


**Figure 3**  
( Case Size: 20 & 50 )

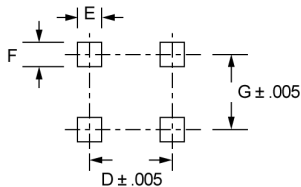


### Recommended Solder Pad Layouts

(1) For Case Size: 10, 20, 30 & 50



(2) For Case Size: 40



| Case size | Figure | A             | B             | C            | D             | E            | F            | G             | H            | I            | K            |
|-----------|--------|---------------|---------------|--------------|---------------|--------------|--------------|---------------|--------------|--------------|--------------|
| 10        | 1      | .280<br>7.30  | .188<br>4.78  | .127<br>3.23 | .218<br>5.54  | .059<br>1.50 | .10<br>2.54  | -             | .067<br>1.70 | .051<br>1.30 | -            |
| 20        | 3      | .508<br>12.90 | .370<br>9.40  | .137<br>3.50 | .402<br>10.21 | .120<br>3.05 | .135<br>3.43 | -             | .102<br>2.59 | .107<br>2.72 | -            |
| 30        | 1      | .530<br>13.46 | .370<br>9.40  | .232<br>5.90 | .404<br>10.26 | .120<br>3.05 | .135<br>3.43 | -             | .102<br>2.59 | .107<br>2.72 | -            |
| 40        | 2      | .634<br>16.10 | .622<br>15.80 | .292<br>7.41 | .520<br>13.21 | .157<br>4.00 | .157<br>4.00 | .466<br>11.84 | -            | -            | .098<br>2.50 |
| 50        | 3      | .746<br>18.95 | .60<br>15.24  | .284<br>7.21 | .595<br>15.11 | .145<br>3.68 | .135<br>3.43 | -             | .102<br>2.59 | .103<br>2.62 | -            |

## Packaging

**Standard:** Embossed Tape and Reel

All units orientated with lead #1 to the same side of sprocket hole.

|           |              |                      |       |               |
|-----------|--------------|----------------------|-------|---------------|
| Reel:     | Diameter:    | Case size 10         | =     | 7" (177.8mm)  |
|           |              | All Other Case Sizes | =     | 13" (330.2mm) |
| Capacity: | Case size 10 | =                    | 500   | Units         |
|           | Case size 20 | =                    | 1,000 | Units         |
|           | Case size 30 | =                    | 350   | Units         |
|           | Case size 40 | =                    | 200   | Units         |
|           | Case size 50 | =                    | 200   | Units         |

## Ordering Information

|              |                  |               |                                                                                  |           |             |                         |
|--------------|------------------|---------------|----------------------------------------------------------------------------------|-----------|-------------|-------------------------|
| Model Series | <b>HM76 - 20</b> | <b>100</b>    | <b>J</b>                                                                         | <b>LF</b> | <b>TR13</b> | TR: Tape & Reel Packing |
| Case Size:   | 10 (Figure 1)    | 40 (Figure 2) |                                                                                  |           |             | 7 – 7" reel             |
|              | 20 (Figure 3)    | 50 (Figure 3) |                                                                                  |           |             | 13 – 13" reel           |
|              | 30 (Figure 1)    |               |                                                                                  |           |             |                         |
|              |                  |               | Termination Type                                                                 |           |             |                         |
|              |                  |               | Inductance Code:                                                                 |           |             |                         |
|              |                  |               | First 2 digits are significant. Last digit denotes the number of trailing zeros. |           |             |                         |