



High Current, Power Inductors

MATB-322520-XXX-M-6A Power Choke



Description

- AEC-Q200 qualified
- Halogen Free
- 165°C maximum total temperature operation
- 3.4 x 2.7 x 2.0mm maximum surface mount package
- Magnetically shielded, low EMI
- High current carrying capacity, Low core losses
- RoHS compliant

Applications

- Automotive applications

Environmental Data

- Storage temperature range: -55°C to +165 °C
- Operating temperature range: -55°C to +165°C (ambient plus self-temperature rise)
- Solder reflow temperature: J-STD-020 compliant

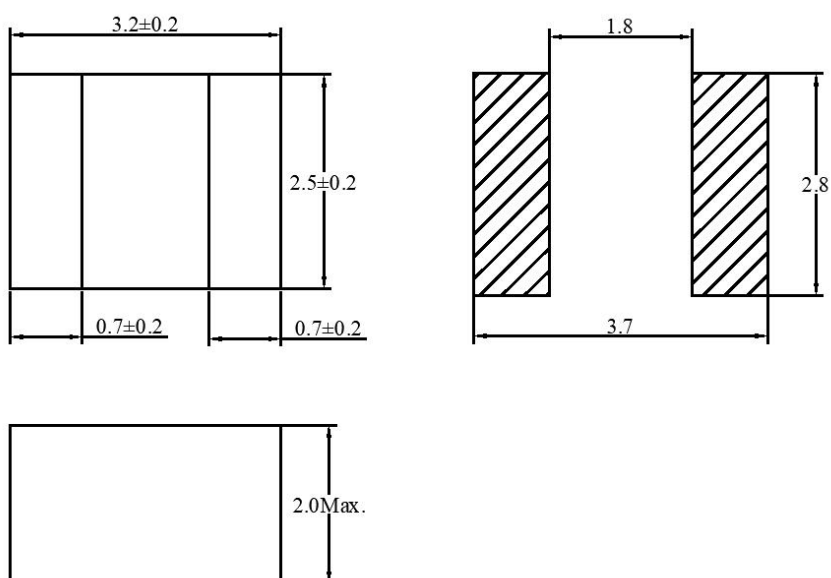
| Description          |   |   |   |            |   |                  |   |   |                      |                  |   |   |           |            |
|----------------------|---|---|---|------------|---|------------------|---|---|----------------------|------------------|---|---|-----------|------------|
| MATB-322520-R47-M-6A |   |   |   |            |   | 0.47μH           |   |   | ±20 %                |                  |   |   |           |            |
| Model                |   |   |   |            |   | Inductance Value |   |   | Inductance Tolerance |                  |   |   |           |            |
| Global Part Number   |   |   |   |            |   |                  |   |   |                      |                  |   |   |           |            |
| M                    | A | T | B | 3          | 2 | 2                | 5 | 2 | 0                    | R                | 4 | 7 | M         | 6A         |
| Product Series       |   |   |   | Dimensions |   |                  |   |   |                      | Inductance Value |   |   | Tolerance | Automotive |

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| Part No.                    | Inductance      | DC Resistance |       | Heating Rating Current |      | Saturation Current |      |
|-----------------------------|-----------------|---------------|-------|------------------------|------|--------------------|------|
|                             | L0 (μH)         | DCR (mΩ)      |       | Idc (A)                |      | Isat (A)           |      |
|                             | ±20 %, 1MHz, 1V | TYP.          | MAX.  | TYP.                   | MAX. | TYP.               | MAX. |
| <b>MATB-322520-R47-M-6A</b> | 0.47            | 9.2           | 11.0  | 12.0                   | 10.8 | 10.2               | 8.7  |
| <b>MATB-322520-1R0-M-6A</b> | 1.0             | 19.0          | 23.0  | 7.2                    | 6.5  | 8.4                | 7.5  |
| <b>MATB-322520-1R5-M-6A</b> | 1.5             | 26.0          | 31.0  | 6.3                    | 5.5  | 7.6                | 6.5  |
| <b>MATB-322520-2R2-M-6A</b> | 2.2             | 35.0          | 46.0  | 5.4                    | 4.9  | 6.2                | 5.0  |
| <b>MATB-322520-3R3-M-6A</b> | 3.3             | 63.0          | 70.0  | 4.2                    | 3.8  | 5.2                | 4.2  |
| <b>MATB-322520-4R7-M-6A</b> | 4.7             | 98.0          | 108.0 | 3.0                    | 2.7  | 4.3                | 3.4  |

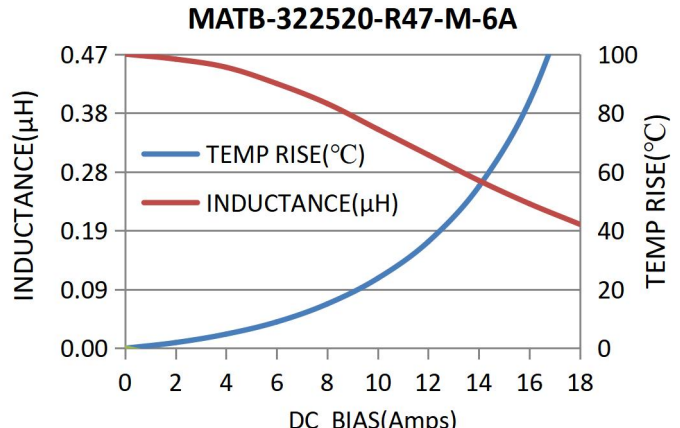
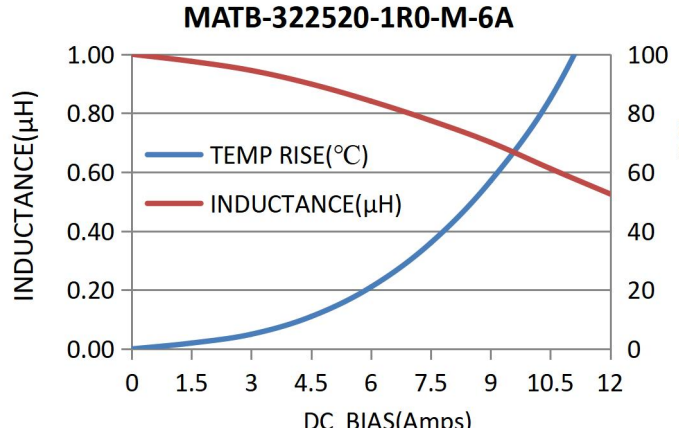
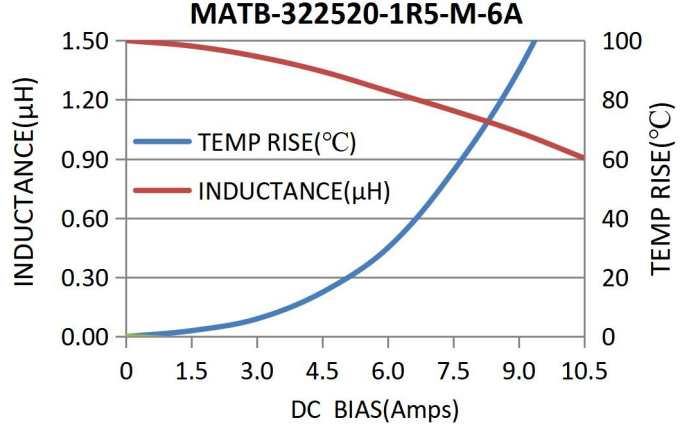
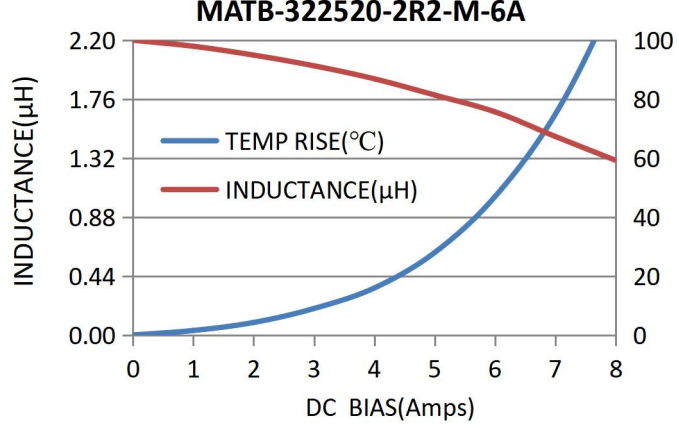
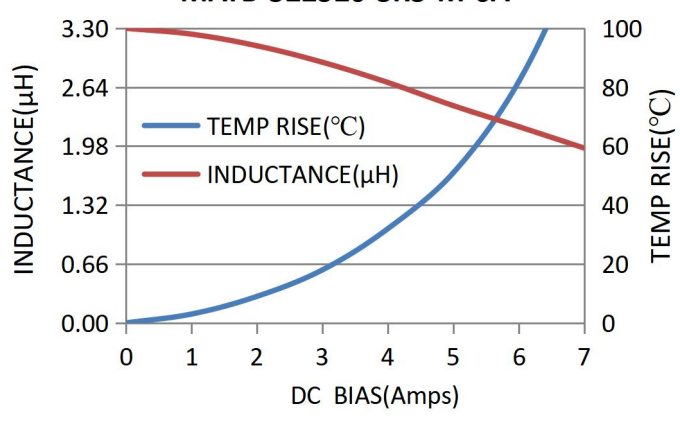
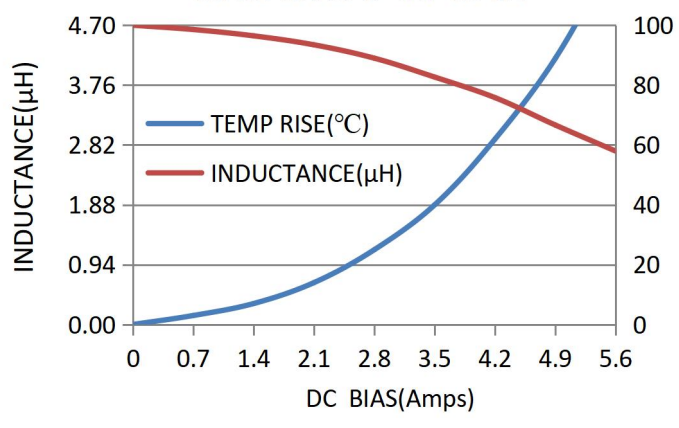
**Notes**

1. All test data is referenced to 25°C ambient
2. Operating temperature range - 55°C to + 165°C
3. Idc(A):DC current (A) that will cause an approximate ΔT of 40°C (reference ambient temperature is 25°C)
4. Isat(A):DC current (A) that will cause L0 to drop approximately 30%
5. The part temperature (ambient + temp rise) should not exceed 165 °C under worst case operating conditions. Circuit design, component placement, PWB trace size and thickness, airflow and other cooling provisions all affect the part temperature. Part temperature should be verified in the end application.

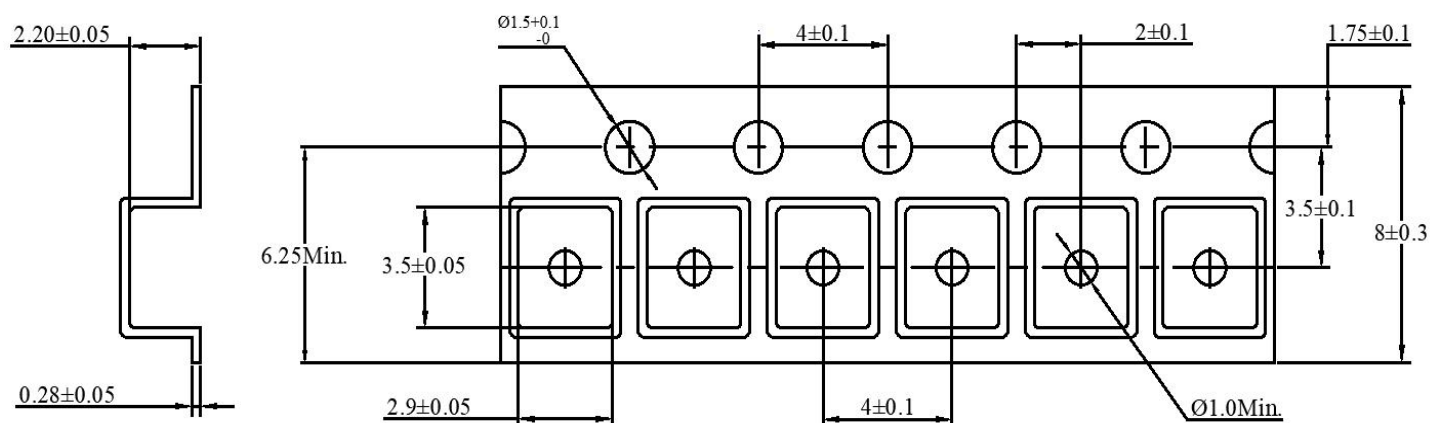
**•Dimensions-mm**

**Notes**

1. Tolerances are +/-0.1millimeters unless stated otherwise
2. Dimensions of recommended PCB layout are reference only.
3. Do not route traces nor place vias underneath the inductor. Proper layout is required.

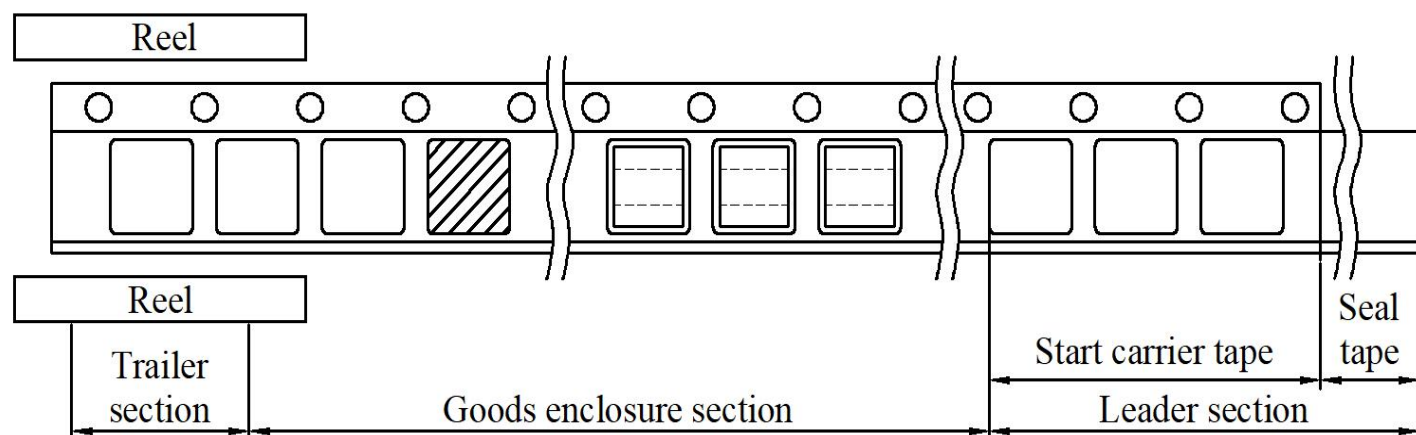
**• NO Marking**

| Performance Graphs                                                                                                    |                                                                                                                         |
|-----------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------|
| Test Instruments                                                                                                      | Test Condition                                                                                                          |
| Wayne kerr 3260B/G LCR Meter<br>Wayne kerr 3265B Bias Current Source                                                  | Temperature: $26 \pm 3^{\circ}\text{C}$<br>Humidity: < 70% RH<br>Frequency: 1MHz, 1.0V                                  |
| <p><b>MATB-322520-R47-M-6A</b></p>    | <p><b>MATB-322520-1R0-M-6A</b></p>    |
| <p><b>MATB-322520-1R5-M-6A</b></p>  | <p><b>MATB-322520-2R2-M-6A</b></p>  |
| <p><b>MATB-322520-3R3-M-6A</b></p>  | <p><b>MATB-322520-4R7-M-6A</b></p>  |

### Tape Packaging Dimensions-mm

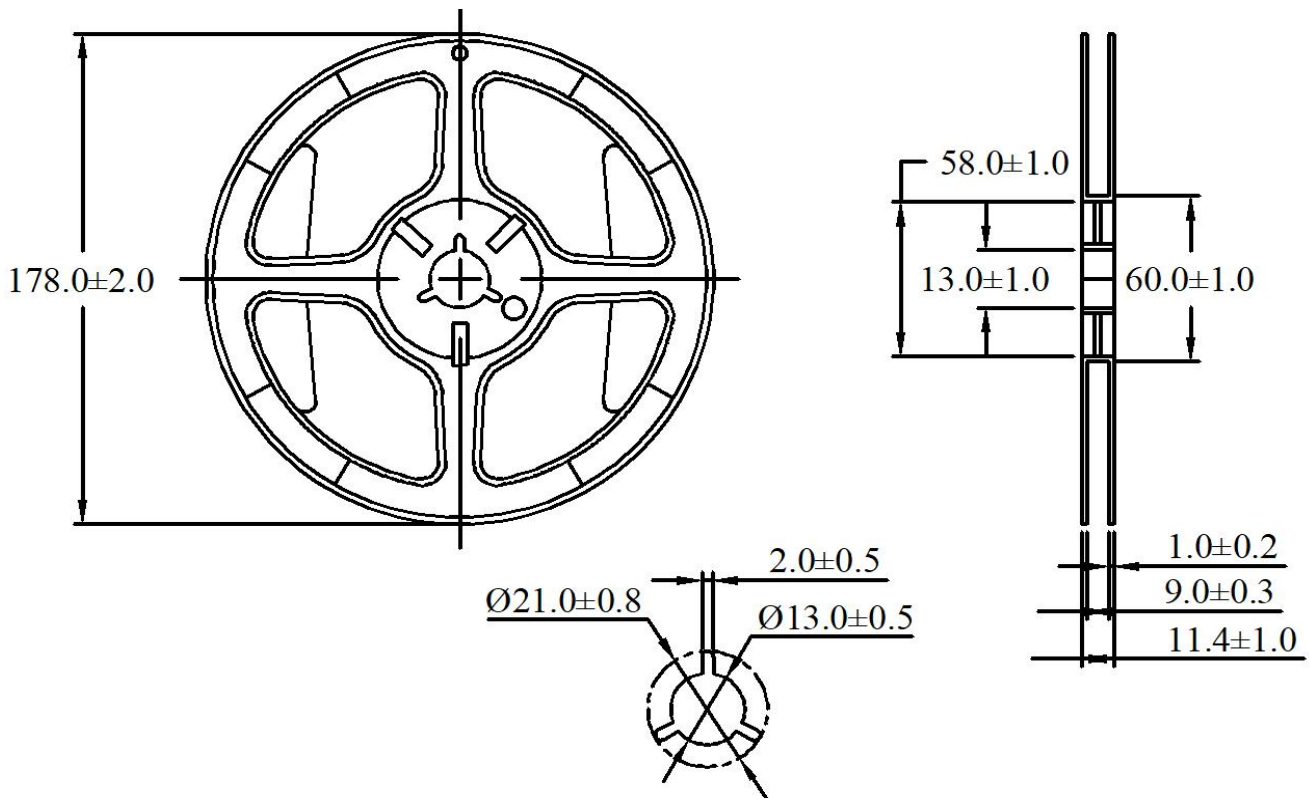


### Taping dimension and tape direction, Leader ,Trailer,section dimension



|                         |           |
|-------------------------|-----------|
| Leader section          | Min.400mm |
| Carrier tape start size | Min.100mm |
| Trailer section size    | Min.160mm |

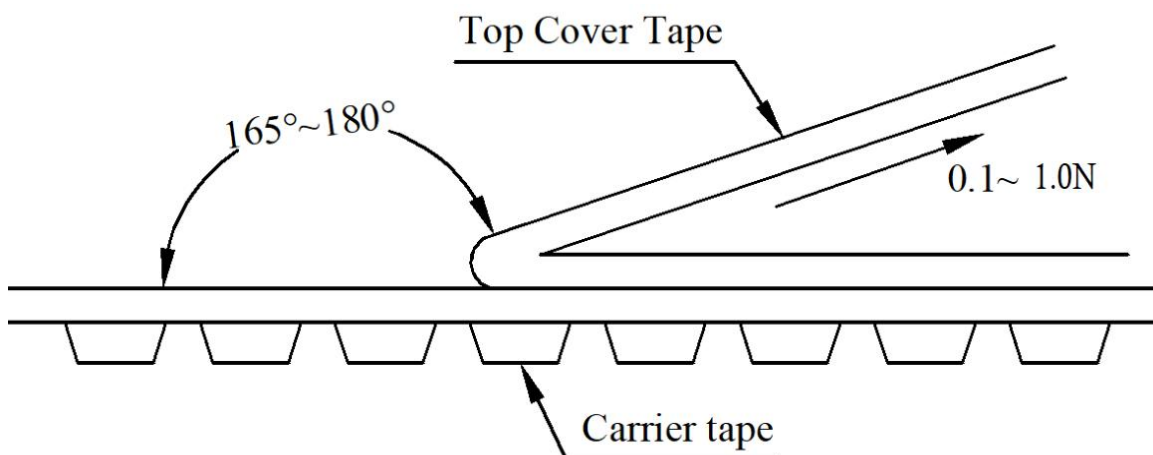
Reel Dimensions-mm



• Peel force of top cover tape

The peel speed shall be about 300mm/minute

The peel force of top cover tape shall be between 0.1 to 1.0 N



• Numbers of taping

2000pieces/reel