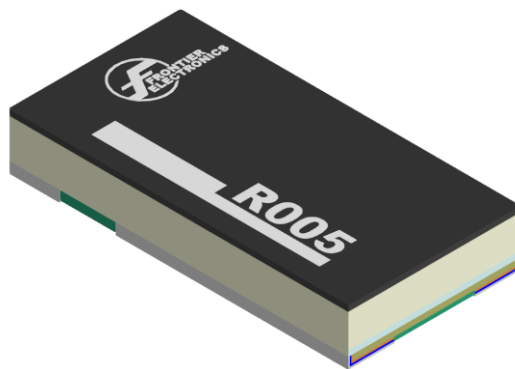




**Frontier Electronics Corp.®**

**SMD CURRENT SENSE METAL FOIL CHIP RESISTORS  
4 LEADS**

**M SERIES**





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### FEATURES & APPLICATIONS

- Low and stable TCR
- High power rating
- Inductance lower than 1.0nH
- High reliability
- Low Profile
- RoHS compliant & Halogen Free
- Battery chargers
- Overcurrent protection circuits
- DC/DC converters
- Power Supplies (Linear and switch-mode)
- Stepper Motor Controller
- Computers

### ORDERING INFORMATION

| 1206                       | G             | J                | R005                                      | G                           | T                                                                                       | C           | L              |
|----------------------------|---------------|------------------|-------------------------------------------|-----------------------------|-----------------------------------------------------------------------------------------|-------------|----------------|
| Size                       | Series        | Wattage          | Resistance                                | Tolerance                   | Packaging                                                                               | Termination | Code           |
| 0612 (1632)<br>1225 (3264) | M: Metal Foil | H: 1 W<br>J: 2 W | R005: 5 mΩ<br>R010: 10 mΩ<br>R0L5: 0.5 mΩ | D: 0.5%<br>F: ±1%<br>J: ±5% | T: Paper Carrier 7" Reel<br>E: Embossed Carrier 7" Reel<br>R: Embossed Carrier 10" Reel | C: Tin (Sn) | L: 4 Terminals |

### VALUES

| Size        | Power Rating @ 70°C Max. (W) | Tolerance | TCR (25 ~ 125 °C)<br>(ppm/°C) | Resistance<br>(mΩ)                    |
|-------------|------------------------------|-----------|-------------------------------|---------------------------------------|
| 0612 (1632) | 1                            | F         | ±150                          | 0.5, 0.75                             |
|             |                              | F         | ±100                          | 1, 2, 3, 4                            |
|             |                              | D         | ±50                           | 5, 6, 7, 8, 9, 10                     |
| 1225 (3264) | 2                            | F         | ±100                          | 0.5, 1.0, 2.0, 3.0, 4.0               |
|             | 2                            | D, F      | ±50                           | 5, 6, 7, 8, 9, 10, 12, 15, 18, 22, 25 |

### OPERATION AND STORAGE TEMPERATURE

#### As a Component

Operation Temperature Range: -55 to +155 °C

Storage Temperature Range: -55 to +155 °C

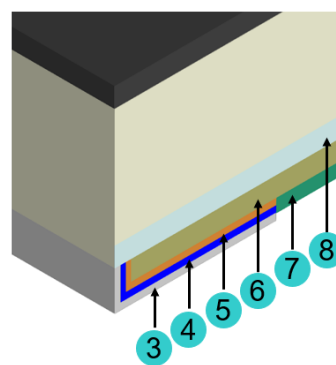
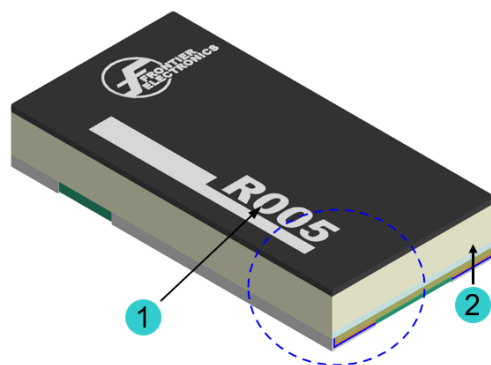
#### Original Packaging

Storage Temperature Range: +10 ~ +40 °C, Humidity: 30 to 70% relative humidity

- Notes:**
1. To avoid solderability problems, do not store products in a corrosive environment such as Sulphur gas, chloride gas, or other corrosive gases/liquids. It may cause corrosion on the soldering terminals
  2. To store products according to the conditions above
  3. Don't expose products to excessive vibration or direct sunlight
  4. We recommend to use the product within 2 years after the date it was purchased

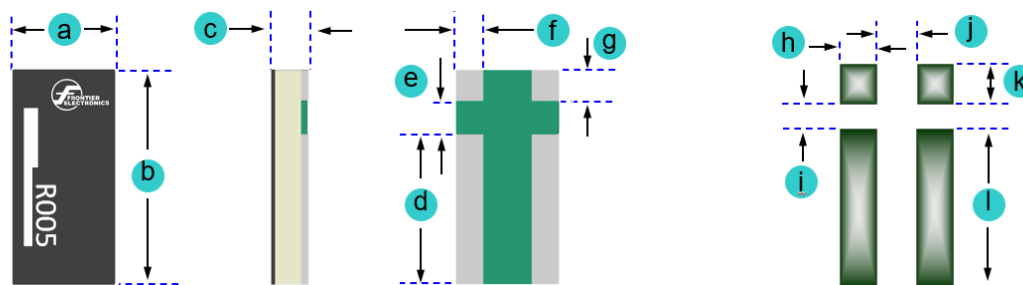
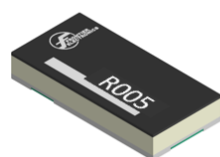
### CONSTRUCTION

| 1               | 2         | 3         | 4            | 5            | 6          | 7                  | 8              |
|-----------------|-----------|-----------|--------------|--------------|------------|--------------------|----------------|
| Marking/Coating | Substrate | Tin Layer | Nickel Layer | Copper Layer | Metal Foil | Protective Coating | Adhesive Layer |



### DIMENSIONS

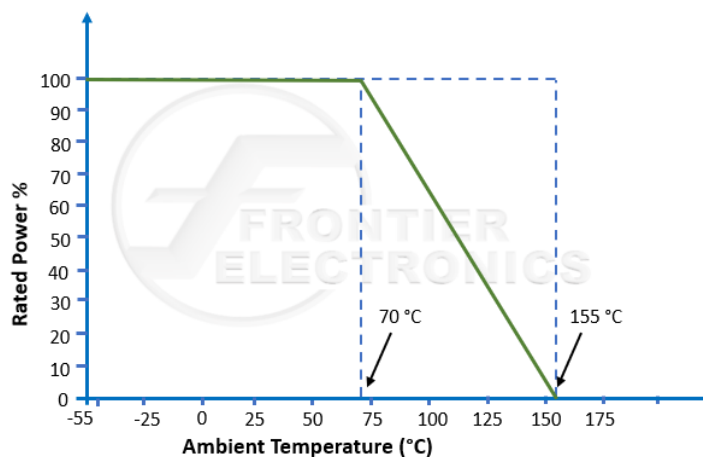
| TYPE                         | A                 | B                 | C                 | D                 | E                 | F                 | G                 | H               | I                | J               | K               | L              |
|------------------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-----------------|------------------|-----------------|-----------------|----------------|
| <b>0612</b><br><b>(1632)</b> | 1.55<br>(0.061)   | 3.2<br>(0.126)    | 0.5<br>(0.02)     | 2.16<br>(0.085)   | 0.5<br>(0.02)     | 0.41<br>(0.016)   | 0.46<br>(0.018)   | 1.014<br>(0.04) | 0.381<br>(0.015) | 0.762<br>(0.03) | 0.762<br>(0.03) | 2.29<br>(0.09) |
| Tol.                         | ±0.20<br>(±0.008) | ±0.20<br>(±0.008) | ±0.20<br>(±0.008) | ±0.20<br>(±0.008) | ±0.20<br>(±0.008) | ±0.20<br>(±0.008) | ±0.20<br>(±0.008) | Typ.<br>1       | Typ.<br>0.5      | Typ.<br>2       | Typ.<br>0.7     | Typ.<br>5.1    |
| <b>1225</b><br><b>(3264)</b> | 3.1<br>(0.122)    | 6.3<br>(0.248)    | 0.6<br>(0.024)    | 5.12<br>(0.202)   | 0.5<br>(0.02)     | 0.5<br>(0.02)     | 0.62<br>(0.024)   | (0.039)         | (0.02)           | (0.079)         | (0.028)         | (0.201)        |
| Tol.                         | ±0.20<br>(±0.008) | ±0.20<br>(±0.008) | ±0.20<br>(±0.008) | ±0.20<br>(±0.008) | ±0.20<br>(±0.008) | ±0.20<br>(±0.008) | ±0.20<br>(±0.008) | Typ.            | Typ.             | Typ.            | Typ.            | Typ.           |



### MARKING

| SIZE                        | RESISTANCE CODE                                                                                    | MARKING |
|-----------------------------|----------------------------------------------------------------------------------------------------|---------|
| 0612 (1632) and 1225 (3264) | <p>R is first digit followed by 3 significant digits</p> <p>0.025Ω = R025</p> <p>0.005Ω = R005</p> |         |

### DERATING CURVE



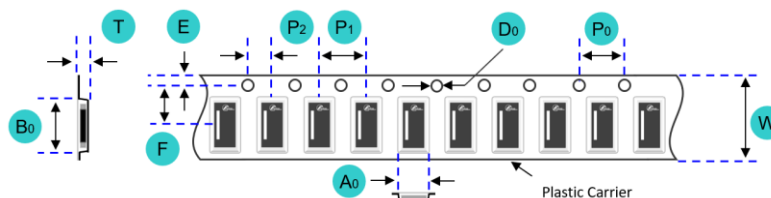
The maximum amount of power that the resistor can dissipate without failing or degrading. This rating is based on the ambient temperature. Other factors affecting its performance are: Size, construction and Material

### PACKAGING

| Size                         | Ao                | Bo                | W                 | F                 | E                 | P1                | P2                | P0                | D                 | T              |
|------------------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|----------------|
| <b>0612</b><br><b>(1632)</b> | 2.0<br>(0.079)    | 3.6<br>(0.142)    | 8.0<br>(0.315)    | 3.5<br>(0.138)    | 1.75<br>(0.069)   | 4.0<br>(0.157)    | 2.0<br>(0.079)    | 4.0<br>(0.157)    | 1.5<br>(0.059)    | 1.2<br>(0.047) |
| <b>Tol.</b>                  | ±0.20<br>(±0.008) | ±0.20<br>(±0.008) | ±0.30<br>(±0.012) | ±0.05<br>(±0.002) | ±0.10<br>(±0.004) | ±0.10<br>(±0.004) | ±0.05<br>(±0.002) | ±0.10<br>(±0.004) | ±0.05<br>(±0.002) | max<br>(max)   |
| <b>1225</b><br><b>(3264)</b> | 3.5<br>(0.138)    | 6.75<br>(0.266)   | 12<br>(0.472)     | 5.5<br>(0.217)    | 1.75<br>(0.069)   | 4.0<br>(0.157)    | 2.0<br>(0.079)    | 4.0<br>(0.157)    | 1.5<br>(0.059)    | 1.2<br>(0.047) |
| <b>Tol.</b>                  | ±0.20<br>(±0.008) | ±0.20<br>(±0.008) | ±0.30<br>(±0.012) | ±0.1<br>(±0.004)  | ±0.10<br>(±0.004) | ±0.10<br>(±0.004) | ±0.05<br>(±0.002) | ±0.10<br>(±0.004) | ±0.05<br>(±0.002) | max<br>(max)   |

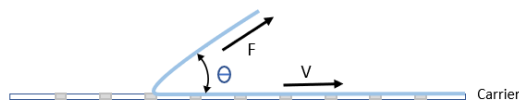
mm (In)

#### Plastic carrier



#### Top Cover Tape Removing Force

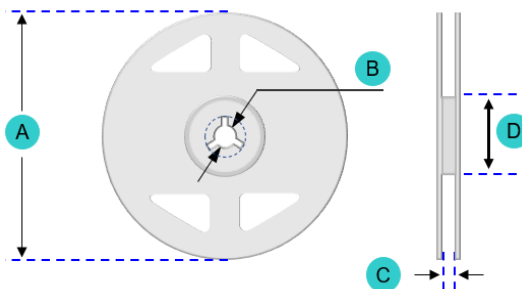
- Speed: around 300 mm/min
- Force: 0.1N Min. and 0.7N Max.
- Angle: 15° Max.



#### Reel Dimensions

| Size                         | Reel Qty                         | A                | B                | C                | D                |
|------------------------------|----------------------------------|------------------|------------------|------------------|------------------|
| <b>0612</b><br><b>(1632)</b> | 7" Reel 5Kpcs<br>Plastic Carrier | 178<br>(7.008)   | 13<br>(0.512)    | 9<br>(0.354)     | 60<br>(2.362)    |
| <b>Tol.</b>                  |                                  | ±2.0<br>(±0.079) | ±0.2<br>(±0.008) | ±0.5<br>(±0.02)  | ±1.0<br>(±0.039) |
| <b>1225</b><br><b>(3264)</b> | 7" Reel 4Kpcs<br>Plastic Carrier | 178<br>(7.008)   | 13<br>(0.512)    | 14<br>(0.551)    | 60<br>(2.362)    |
| <b>Tol.</b>                  |                                  | ±2.0<br>(±0.079) | ±0.2<br>(±0.008) | ±0.2<br>(±0.008) | ±1.0<br>(±0.039) |

mm (In)





SOLDER PROFILE

REFLOW

