



◆ Features

- Power rating up to 15 W
- Excellent long-term stability
- Ideal for mounting on DCB/IMS substrate
- RoHS compliant
- AEC-Q200 qualified

◆ Applications

- Current sensor for power hybrid applications
- Frequency converters
- Power modules
- Automatic control power supply
- High current applications for the automotive market

◆ Technical Date

| | | |
|--|------|-----------------|
| Resistance | mOhm | 0.1 to 5 |
| Tolerance | % | 1、2、5 |
| Power $P_{70^{\circ}\text{C}}$ | W | 3~15 |
| Recommended applicable temperature range | °C | -65°C to +170°C |

◆ Ordering Code

| ASR | M | 3 | 1 | F |
|--------------|--|-----------------------------------|---------|-------------------------|
| Product Type | Material | Dimension | R Value | R Tolerance |
| | M: Manganin K: Kamar S: CuMn7Sn F: FeCrAl | 3:2512 5:3920 7:5930 ... | Unit:mΩ | J:±5% G:±2% F:±1% |



◆ Physical Dimensions

| Type | Size | W/mm | A/mm | C/mm | H/mm | l | w | a |
|---------------|------|---------|---------|---------|---------|----|------|-----|
| ASR-S/M/K/F-3 | 2512 | 6.3±0.2 | 1.2±0.2 | 3.1±0.3 | 0.5±0.1 | 7 | 3.4 | 1.8 |
| ASR-S/M/K/F-5 | 3920 | 10±0.2 | 2.2±0.2 | 5.1±0.4 | 0.5±0.1 | 11 | 6.2 | 2.7 |
| ASR-S/M/K/F-7 | 5930 | 15±0.3 | 4.2±0.3 | 7.6±0.4 | 0.5±0.1 | 16 | 8.75 | 5.2 |



◆ Electrical Features

| Type | Resistance/mΩ | D1 /mm | D2 /mm | P70°C /W | TCR /ppm/°C |
|---------|---------------|--------|--------|----------|-------------|
| ASR-S-3 | 0.2 | 1.40 | 1.40 | 6 | 175 |
| ASR-M-3 | 0.3 | 1.50 | 1.50 | 6 | 175 |
| | 0.5 | 0.88 | 0.88 | 6 | 115 |
| | 1 | 0.50 | 0.50 | 5 | 100 |
| ASR-K-3 | 2 | 0.65 | 0.65 | 5 | 50 |
| | 3 | 0.43 | 0.43 | 4 | 50 |
| | 4 | 0.3 | 0.3 | 3 | 50 |
| ASR-F-3 | 2 | 0.7 | 0.7 | 5 | 50 |
| | 3 | 0.47 | 0.47 | 4 | 50 |
| | 4 | 0.35 | 0.35 | 3 | 50 |
| | 5 | 0.28 | 0.28 | 3 | 50 |
| ASR-M-5 | 0.2 | 1.66 | 1.66 | 12 | 200 |
| | 0.3 | 1.37 | 1.37 | 10 | 150 |
| | 0.5 | 0.83 | 0.83 | 9 | 70 |
| | 1 | 0.40 | 0.40 | 7 | 50 |
| ASR-K-5 | 1 | 1.16 | 1.16 | 8 | 50 |
| | 2 | 0.56 | 0.56 | 6 | 50 |
| | 3 | 0.37 | 0.37 | 5 | 50 |
| | 4 | 0.28 | 0.28 | 5 | 50 |
| ASR-F-5 | 1 | 1.28 | 1.28 | 8 | 50 |
| | 2 | 0.64 | 0.64 | 6 | 50 |
| | 3 | 0.43 | 0.43 | 5 | 50 |
| | 4 | 0.32 | 0.32 | 5 | 50 |
| ASR-S-7 | 0.1 | 2.0 | 2.0 | 15 | 200 |
| ASR-M-7 | 0.2 | 1.50 | 1.50 | 15 | 100 |
| | 0.3 | 0.98 | 0.98 | 10 | 100 |
| | 0.5 | 0.60 | 0.60 | 10 | 75 |
| | 0.75 | 0.41 | 0.41 | 10 | 75 |
| ASR-K-7 | 1 | 0.86 | 0.86 | 9 | 50 |
| | 2 | 0.40 | 0.40 | 7 | 50 |
| | 3 | 0.29 | 0.29 | 7 | 50 |
| ASR-F-7 | 1 | 0.96 | 0.96 | 9 | 50 |
| | 2 | 0.48 | 0.48 | 7 | 50 |
| | 3 | 0.32 | 0.32 | 7 | 50 |



◆ Power derating curve at 70 °C



Stability < 1.0% (in covered condition)

◆ Performance Date

| Items | Additional Requirements | Reference | Limits |
|------------------------------|--|----------------------------|------------------------|
| Temperature Cycling | 1000 Cycles(-55°C to +125°C) Measurement at 24±2hours after test conclusion | JESD22 Method JA-104 | ±0.5% |
| High Temperature Exposure | 1000hrs.@T=125°C.Unpowered. Measurement at 24±2hours after test conclusion | MIL-STD-202 Method 108 | ±0.5% |
| Biased Humidity | 1000hrs 85°C/85%RH. Note: Specified conditions: 10% of operating power. Measurement at 24±2hours after test conclusion | MIL-STD-202 Method 103 | ±0.5% |
| Operational Life | Condition D Steady State TA=125°C at rated power. Measurement at 24±2hours after test conclusion | MIL-STD-202 Method 108 | ±1% |
| Solderability | 245°C±5°C,5s+0.5s/-0 | J-STD-002C | 95% Coverage Min |
| Resistance to Soldering Heat | 260°C±5°C, 10s±1s Measurement at 24±2hours after test conclusion | MIL-STD-202 Method 210 | ±0.5% |
| Short Time Overload | 5×Rated power for 5 s Measurement at 24±2hours after test conclusion | MIL-STD-202 Method 301 | ±0.5% |



Marking

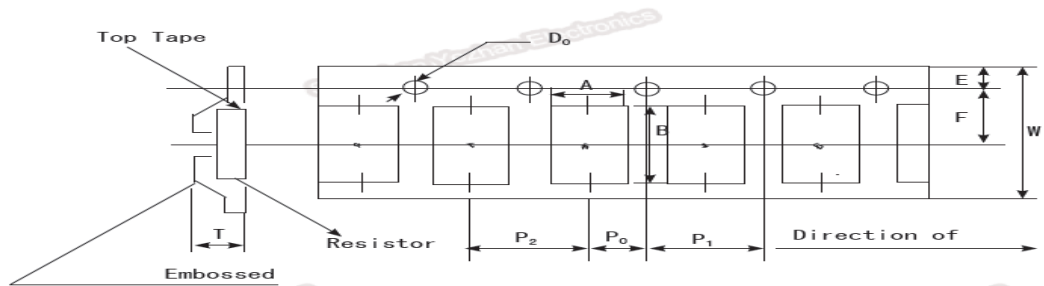
R001 1%

R001: 1mΩ **1%:** Tolerance

包装 Packaging

Embossed plastic Tape Specifications

(Unit: mm)



| Size | A | B | W | E | F | P0 | P1 | P2 | D0 | T | Quantity |
|------|-----|-----|----|------|------|------|-----|-----|------|-----|----------|
| 2512 | 4.3 | 7.6 | 16 | 1.55 | 7.5 | 3.85 | 7.7 | 7.7 | 1.50 | 1.7 | 1000 |
| 3920 | 6 | 11 | 24 | 1.55 | 11.2 | 6 | 12 | 12 | 1.50 | 2.0 | 2500 |
| 5930 | 8.6 | 16 | 24 | 1.55 | 10.8 | 6 | 12 | 12 | 1.50 | 2.4 | 2000 |



| Size | 2512 | 3920 | 5930 |
|----------|------|------|------|
| ϕA | 330 | 330 | 330 |
| ϕB | 99.5 | 99.5 | 99.5 |
| ϕC | 13 | 13 | 13 |
| W | 16.5 | 24.5 | 24.5 |
| T | 21 | 29 | 29 |



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