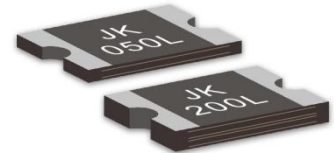


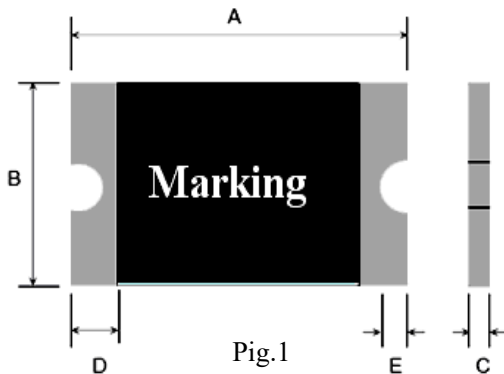
DM-LSMD(Surface-Mount Device) Resettable Fuse: DM-LSMD2920 Series

Features:

- ✧ RoHS Compliant & Halogen Free
- ✧ faster tripping, 2920 Dimension, Surface mountable, Solid state
- ✧ Operation Current: 0.30A~3.00A
- ✧ Maximum Voltage: 6V~60Vdc
- ✧ Operating Temperature: -40°C TO 85°C
- ✧ Certification: UL、CSA



Product Dimensions



Material of terminal pad: Tin-Plated Nickle-copper
 Solderability of terminal pad: Meets EIA specification
 RS 186-9E and ANSI/J-STD-002 Category 3.

Unit : mm

| Model | Marking | A | | B | | C | | D | E |
|---------------|---------|------|------|------|------|------|------|------|------|
| | | Min | Max | Min | Max | Min | Max | Min | Min |
| DM-LSMD030 | DM030 | 6.73 | 7.98 | 4.80 | 5.44 | 0.60 | 1.15 | 0.30 | 0.15 |
| DM-LSMD050 | DM050 | 6.73 | 7.98 | 4.80 | 5.44 | 0.60 | 1.15 | 0.30 | 0.15 |
| DM-LSMD075 | DM075 | 6.73 | 7.98 | 4.80 | 5.44 | 0.60 | 1.15 | 0.30 | 0.15 |
| DM-LSMD100 | DM100 | 6.73 | 7.98 | 4.80 | 5.44 | 0.60 | 1.00 | 0.30 | 0.15 |
| DM-LSMD125 | DM125 | 6.73 | 7.98 | 4.80 | 5.44 | 0.60 | 1.00 | 0.30 | 0.15 |
| DM-LSMD150 | DM150 | 6.73 | 7.98 | 4.80 | 5.44 | 0.60 | 1.20 | 0.30 | 0.15 |
| DM-LSMD185 | DM185 | 6.73 | 7.98 | 4.80 | 5.44 | 0.60 | 1.20 | 0.30 | 0.15 |
| DM-LSMD200 | DM200 | 6.73 | 7.98 | 4.80 | 5.44 | 0.40 | 0.80 | 0.30 | 0.15 |
| DM-LSMD200-24 | DM200 | 6.73 | 7.98 | 4.80 | 5.44 | 0.60 | 1.00 | 0.30 | 0.15 |
| DM-LSMD250 | DM250 | 6.73 | 7.98 | 4.80 | 5.44 | 0.40 | 0.80 | 0.30 | 0.15 |
| DM-LSMD260 | DM260 | 6.73 | 7.98 | 4.80 | 5.44 | 0.40 | 0.80 | 0.30 | 0.15 |
| DM-LSMD300-6 | DM300 | 6.73 | 7.98 | 4.80 | 5.44 | 0.40 | 0.80 | 0.30 | 0.15 |
| DM-LSMD300-16 | DM300 | 6.73 | 7.98 | 4.80 | 5.44 | 0.60 | 1.20 | 0.30 | 0.15 |

Thermal Derating Chart-I_H (A)

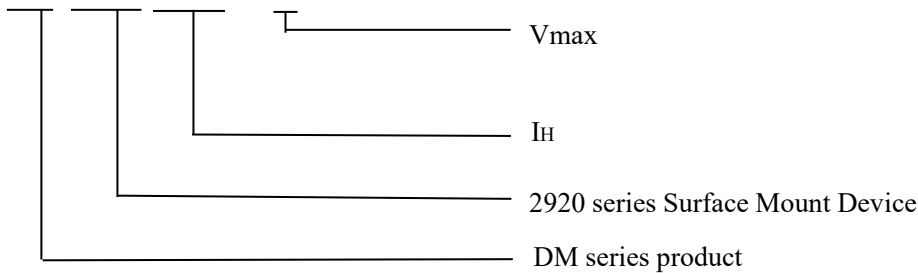
| Model | Maximum ambient operating temperatures (°C) | | | | | | | | |
|---------------|---|------|------|------|------|------|------|------|------|
| | -40 | -20 | 0 | 25 | 40 | 50 | 60 | 70 | 85 |
| DM-LSMD030 | 0.44 | 0.37 | 0.35 | 0.30 | 0.28 | 0.23 | 0.20 | 0.18 | 0.14 |
| DM-LSMD050 | 0.73 | 0.62 | 0.59 | 0.50 | 0.47 | 0.38 | 0.34 | 0.30 | 0.24 |
| DM-LSMD075 | 1.09 | 0.92 | 0.88 | 0.75 | 0.70 | 0.56 | 0.50 | 0.45 | 0.36 |
| DM-LSMD100 | 1.45 | 1.23 | 1.17 | 1.00 | 0.93 | 0.75 | 0.67 | 0.60 | 0.48 |
| DM-LSMD125 | 1.81 | 1.54 | 1.46 | 1.25 | 1.16 | 0.94 | 0.84 | 0.75 | 0.60 |
| DM-LSMD150 | 2.18 | 1.85 | 1.76 | 1.50 | 1.40 | 1.13 | 1.01 | 0.90 | 0.72 |
| DM-LSMD185 | 2.68 | 2.28 | 2.16 | 1.85 | 1.72 | 1.39 | 1.24 | 1.11 | 0.89 |
| DM-LSMD200 | 2.90 | 2.46 | 2.34 | 2.00 | 1.86 | 1.50 | 1.34 | 1.20 | 0.96 |
| DM-LSMD200-24 | 2.90 | 2.46 | 2.34 | 2.00 | 1.86 | 1.50 | 1.34 | 1.20 | 0.96 |
| DM-LSMD250 | 3.63 | 3.08 | 2.93 | 2.50 | 2.33 | 1.88 | 1.68 | 1.50 | 1.20 |
| DM-LSMD260 | 3.77 | 3.20 | 3.04 | 2.60 | 2.42 | 1.95 | 1.74 | 1.56 | 1.25 |
| DM-LSMD300-6 | 4.35 | 3.69 | 3.51 | 3.00 | 2.79 | 2.25 | 2.01 | 1.80 | 1.44 |
| DM-LSMD300-16 | 4.35 | 3.69 | 3.51 | 3.00 | 2.79 | 2.25 | 2.01 | 1.80 | 1.44 |

Electrical Characteristics

| Model | V _{max} (Vdc) | I _{max} (A) | I _{hold} @25°C (A) | I _{trip} @25°C (A) | P _d (W) | Maximum time to trip | | Resistance | |
|---------------|---------------------------|-------------------------|-----------------------------------|-----------------------------------|-----------------------|----------------------|-------|--------------------|--------------------|
| | | | | | | Current | Time | R _{i_min} | R _{l_max} |
| | | | | | | (A) | (Sec) | (Ω) | (Ω) |
| DM-LSMD030 | 60 | 100 | 0.30 | 0.60 | 1.5 | 1.5 | 3.0 | 0.60 | 4.80 |
| DM-LSMD050 | 60 | 100 | 0.50 | 1.00 | 1.5 | 2.5 | 4.0 | 0.18 | 1.40 |
| DM-LSMD075 | 33 | 100 | 0.75 | 1.50 | 1.5 | 8.0 | 0.3 | 0.10 | 1.00 |
| DM-LSMD100 | 33 | 100 | 1.00 | 2.20 | 1.5 | 8.0 | 0.5 | 0.065 | 0.41 |
| DM-LSMD125 | 33 | 100 | 1.25 | 2.50 | 1.5 | 8.0 | 2.0 | 0.05 | 0.25 |
| DM-LSMD150 | 33 | 100 | 1.50 | 3.00 | 1.5 | 8.0 | 2.0 | 0.035 | 0.23 |
| DM-LSMD185 | 33 | 100 | 1.85 | 3.70 | 1.5 | 8.0 | 2.5 | 0.030 | 0.15 |
| DM-LSMD200 | 16 | 100 | 2.00 | 4.00 | 1.5 | 8.0 | 4.5 | 0.020 | 0.12 |
| LSMD200-24 | 24 | 100 | 2.00 | 4.00 | 1.5 | 8.0 | 4.5 | 0.020 | 0.12 |
| DM-LSMD250 | 16 | 100 | 2.50 | 5.00 | 1.5 | 8.0 | 16.0 | 0.020 | 0.085 |
| DM-LSMD260 | 16 | 100 | 2.60 | 5.20 | 1.5 | 8.0 | 10.0 | 0.014 | 0.075 |
| DM-LSMD300-6 | 6 | 100 | 3.00 | 6.00 | 1.5 | 8.0 | 20.0 | 0.012 | 0.048 |
| DM-LSMD300-16 | 16 | 100 | 3.00 | 6.00 | 1.5 | 8.0 | 20.0 | 0.012 | 0.050 |

Part Numbering System

DM-LSMD - □□□ - □



Test Procedures and Requirements

| Test | Test Conditions | Accept/Reject Criteria |
|-----------------|---|-----------------------------------|
| Resistance | In still air @ 25°C | $R_{min} \leq R \leq R_{max}$ |
| Time to Trip | Specified current, V _{max} , 25°C | T _{maximum Time to Trip} |
| Hold Current | 30min, at I _H , 25°C | No trip |
| Trip Cycle Life | V _{max} , I _{max} , 100cycles | No arcing or burning |
| Trip Endurance | V _{max} , 1 hours | No arcing or burning |

Physical Characteristics and Environmental Specifications

Physical Characteristics

| | |
|----------------------|--|
| Terminal materials : | Tin-Plated Nickle-copper |
| Soldering zone | Meets EIA specification RS 186-9E and ANSI/J-STD-002 Category 3. |
| Moisture sensitivity | Level 2a, per IPC/JEDEC J-STD 020C |

Environmental Specifications

| Test | Conditions | Resistance Change |
|--------------------|--|-------------------|
| Passive aging | 85°C,1000hours | ±10% typical |
| Humidity aging | 85°C/85%RH.100 hours | ±5% typical |
| Thermal shock | MIL-STD-202,Method 107G+85°C/-40°C,20times | -30% typical |
| Solvent Resistance | MIL-STD-202,Method 215 | no change |
| Vibration | ML-STD-883C,Test Condition A | no change |

Electrical Specifications:

IH=Hold current:Maximum current at which the device will not interrupt in 25°C still air.

IT=Trip current:Minimum current at which the device from low resistance to high resistance in 25°C still air.

Vmax = Maximum operating voltage device can withstand without damage at rated current.

I_{max} = Maximum fault current device can withstand without damage at rated voltage.

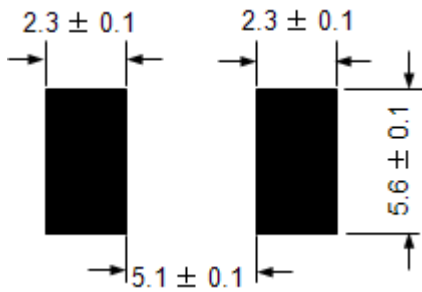
Pd=Maximum power dissipation when device is in the tripped state in 25°C still air environment at rated voltage.

T_{trip}=Maximum time to trip(s) at assigned current.

R_{i min} = Minimum device resistance prior to tripping at 25°C still air..

R_{l max} = Maximum device resistance is measured one hour post reflow.

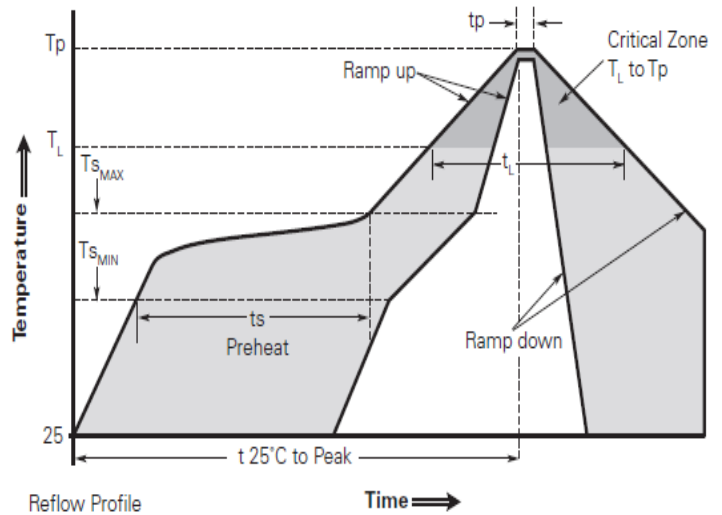
Recommended pad layout (mm)



Solder reflow Profiles

| Profile Feature | Pb-Free Assembly |
|--|------------------|
| Average ramp up rate (T _{S MAX} to T _p) | 3°C/second max. |
| Preheat | |
| • Temperature min. (T _{S MIN}) | 150°C |
| • Temperature max. (T _{S MAX}) | 200°C |
| • Time (t _{S MIN} to t _{S MAX}) | 60-120 seconds |
| Time maintained above: | |
| • Temperature (T _L) | 217°C |
| • Time (t _L) | 60-150 seconds |
| Peak/Classification temperature (T_p) | 260°C |
| Time within 5°C of actual peak temperature | |
| Time (t _p) | 30 seconds max. |
| Ramp down rate | 3°C/second max. |
| Time 25°C to peak temperature | 8 minutes max. |

Note: All temperatures refer to topside of the package, measured on the package body surface.



- Recommended reflow methods: IR, vapor phase oven, hot air oven, N2 environment for lead-free.
- Jinrui believes that the optimum conditions for forming acceptable solder fillets occur when a reasonable amount of solder paste is placed underneath each device's via. As such, Jinrui requests that customers comply with our recommended solder pad layouts.
- Recommended maximum paste thickness is 0.25mm (0.010inch).

- Devices can be cleaned by using standard industry methods and solvents.
- Jinrui requests that customer board layouts refrain from placing raised features (e.g. vias, nomenclature, traces, etc.) underneath LSMD devices. It is possible that raised features could negatively impact solderability performance of our devices.

Notes: If reflow temperatures exceed the recommended profile, devices may not meet the performance requirements.

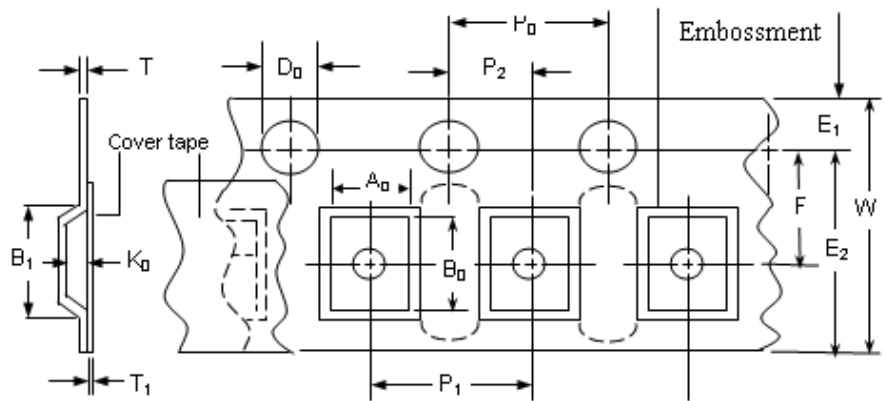
Rework: LSMD series rework should be confined to removal of the installed product and replacement with a fresh device.

Please also avoid directly contacting to the device.

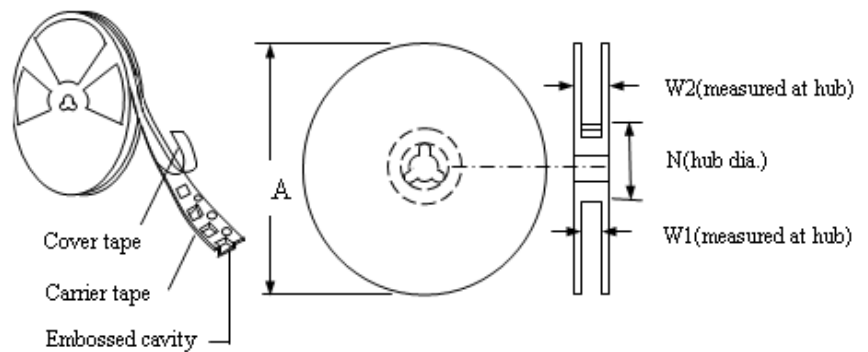
Tape Specifications and Reel Dimensions

| | |
|------------------------|-------------|
| Coverage specification | |
| EIA 481-1(Unit: mm) | |
| W | 16± 0.3 |
| P ₀ | 4.0 ± 0.10 |
| P ₁ | 8.0 ± 0.10 |
| P ₂ | 2.0 ± 0.10 |
| A ₀ | 5.74 ± 0.10 |
| B ₀ | 8.02 ± 0.10 |
| D ₀ | 1.55 ± 0.05 |
| F | 7.5± 0.10 |
| E ₁ | 1.75 ± 0.10 |
| T | 0.20± 0.10 |
| Leader min. | 390 |
| Trailer min. | 160 |
| Reel Dimensions | |
| A | 178± 1 |
| N | 58± 1 |
| W ₁ | 16.9± 0.80 |
| W ₂ | 19.3± 0.1 |

EIA Tape Component Dimintions



EIA Reel Dimintions



Packaging Quantity

| Model | Quantity | Model | Quantity |
|------------|----------|---------------|----------|
| DM-LSMD030 | 2000 | DM-LSMD200 | 2000 |
| DM-LSMD050 | 2000 | DM-LSMD200-24 | 1500 |
| DM-LSMD075 | 2000 | DM-LSMD250 | 2000 |
| DM-LSMD100 | 2000 | DM-LSMD260 | 2000 |
| DM-LSMD125 | 2000 | DM-LSMD300 | 1500 |
| DM-LSMD150 | 2000 | DM-LSMD300-6 | 2000 |
| DM-LSMD185 | 1500 | | |

Storage

The maximum ambient temperature shall not exceed 38°C. Storage temperatures higher than 38°C could result in the deformation of packaging materials. The maximum relative humidity recommended for storage is 60%. High humidity with high temperature can accelerate the oxidation of the solder plating on the termination and reduce the solderability of the components. Sealed plastic bags with desiccant shall be used to reduce the oxidation of the termination and shall only be opened prior to use. The products shall not be stored in areas where harmful gases containing sulfur or chlorine are present

WARNING

- Please read this specification before using the product.
- Use PPTC beyond the maximum ratings or improper use may result in device damage, electrical arcing and flame.
- PPTC are intended for protection against occasional over current or over temperature fault conditions and should not be used when repeated fault conditions or prolonged trip events are anticipated.
- Device performance can be impacted negatively if devices are handled in a manner inconsistent with recommended electronic, thermal, and mechanical procedures for electronic components.
- Use PPTC with a large inductance in circuit will generate a circuit voltage above the rated voltage of the PPTC.
- Avoid impact PPTC device its thermal expansion like placed under pressure or installed in limited space.
- Contamination of the PPTC material with certain silicon based oils or some aggressive solvents can adversely impact the performance of the devices. PPTC can be cleaned by standard methods.
- Requests that customers comply with our recommended solder pad layouts and recommended reflow profile. Improper board layouts or reflow profile could negatively impact solderability performance of our devices.

Notes:

The specification is intended to present application product and technical data to assist the user in selecting PPTC circuit production devices, However, users should independently evaluate and test the suitability of each product. Jinrui makes no warranties as to the accuracy or completeness of the information and disclaims any liability resulting from its use, Jinrui's only obligations are those in the Jinrui Standard Terms and Conditions of Sale and in no case will Jinrui be liable for any incidental, indirect, or consequential damages arising from the sale, resale, or misuse of its products. Jinrui reserves the right to change or update any information contained in this specification without notice.