

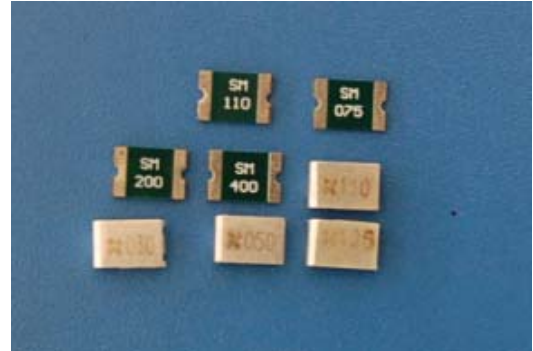
LP-SM Series

Surface-mount devices

Features

- ◇ Small size of 2920/3425
- ◇ Fast tripping resettable circuit protection
- ◇ Surface mount packaging for automated assembly
- ◇ Agency recognition: UL、CSA、TUV

◇



Product Dimensions

Size 7555mm/2920 mils

| Part number | Dimension | | | | | Figures for Dimension |
|--------------|-----------|--------|--------|--------|--------|-----------------------|
| | A Max. | B Max. | C Max. | D Min. | E Min. | |
| LP-SM030 | 7.98 | 3.18 | 5.44 | 0.50 | | S3 |
| LP-SM050 | 7.98 | 3.18 | 5.44 | 0.50 | | S3 |
| LP-SM075 | 7.98 | 3.18 | 5.44 | 0.50 | | S3 |
| LP-SM110 | 7.98 | 3.18 | 5.44 | 0.50 | | S3 |
| LP-SM125 | 7.98 | 3.18 | 5.44 | 0.50 | | S3 |
| LP-SM260 | 7.98 | 3.18 | 5.44 | 0.50 | | S3 |
| LP-SM300 | 7.98 | 3.18 | 5.44 | 0.50 | | S3 |
| LP-SM030C | 7.98 | 5.44 | 1.25 | 0.30 | 0.30 | S2 |
| LP-SM050C | 7.98 | 5.44 | 1.25 | 0.30 | 0.30 | S2 |
| LP-SM075C | 7.98 | 5.44 | 1.25 | 0.30 | 0.30 | S2 |
| LP-SM110C | 7.98 | 5.44 | 1.25 | 0.30 | 0.30 | S2 |
| LP-SM125C | 7.98 | 5.44 | 1.25 | 0.30 | 0.30 | S2 |
| LP-SM130C | 7.98 | 5.44 | 1.25 | 0.30 | 0.30 | S2 |
| LP-SM150C | 7.98 | 5.44 | 1.25 | 0.30 | 0.30 | S2 |
| LP-SM185C | 7.98 | 5.44 | 1.25 | 0.30 | 0.30 | S2 |
| LP-SM200C | 7.98 | 5.44 | 1.50 | 0.30 | 0.30 | S2 |
| LP-SM250C | 7.98 | 5.44 | 1.50 | 0.30 | 0.30 | S2 |
| LP-SM260C | 7.98 | 5.44 | 1.50 | 0.30 | 0.30 | S2 |
| LP-SM300C | 7.98 | 5.44 | 1.50 | 0.30 | 0.30 | S2 |
| LP-SM300C/24 | 7.98 | 5.44 | 1.50 | 0.30 | 0.30 | S2 |
| LP-SM400C | 7.98 | 5.44 | 2.00 | 0.30 | 0.30 | S2 |

Size 8763mm/3425 mils

| Part number | Dimension | | | | | Figures for Dimension |
|-------------|-----------|--------|--------|--------|--------|-----------------------|
| | A Max. | B Max. | C Max. | D Min. | E Min. | |
| LP-SM130 | 9.50 | 3.00 | 6.71 | 0.50 | | S3 |
| LP-SM150 | 9.50 | 3.00 | 6.71 | 0.50 | | S3 |
| LP-SM185 | 9.50 | 3.00 | 6.71 | 0.50 | | S3 |
| LP-SM200 | 9.50 | 3.00 | 6.71 | 0.50 | | S3 |
| LP-SM250 | 9.50 | 3.00 | 6.71 | 0.50 | | S3 |

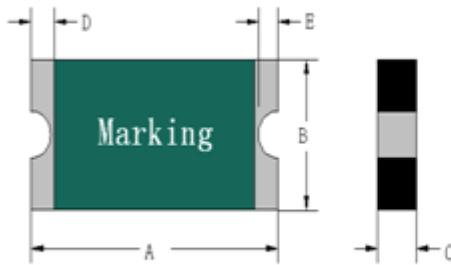


Figure S2

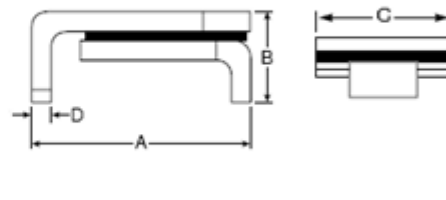


Figure S3

Thermal Derating Chart-IH(A)

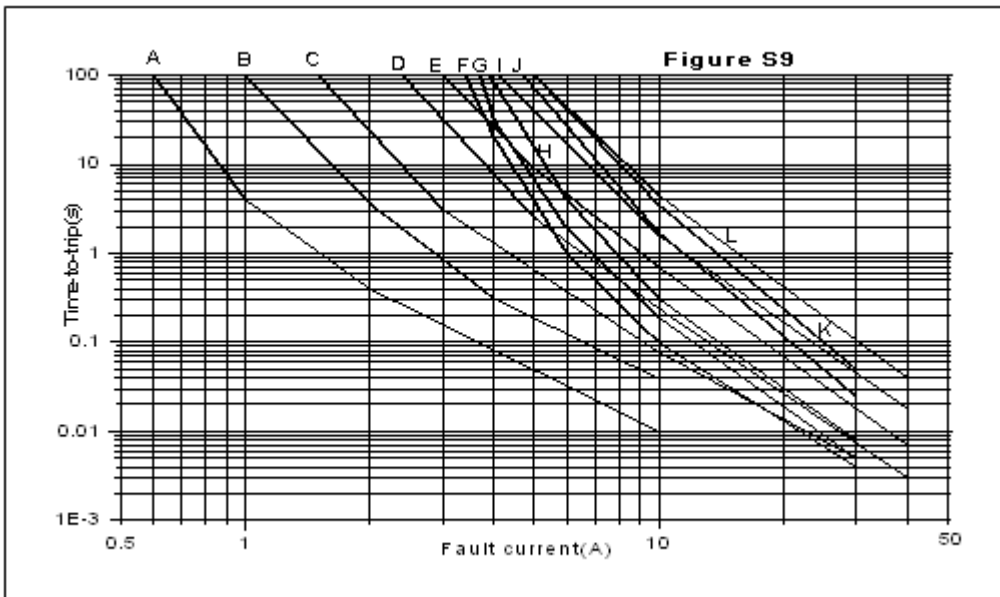
Size 7555mm/2920 mils

| Part number | Maximum Ambient Temperature | | | | | | | | | |
|--------------|-----------------------------|-------|------|------|------|------|------|------|------|------|
| | -40°C | -20°C | 0°C | 20°C | 25°C | 40°C | 50°C | 60°C | 70°C | 85°C |
| LP-SM030 | 0.48 | 0.41 | 0.35 | 0.32 | 0.30 | 0.25 | 0.23 | 0.19 | 0.15 | 0.10 |
| LP-SM050 | 0.80 | 0.71 | 0.59 | 0.52 | 0.50 | 0.44 | 0.38 | 0.32 | 0.26 | 0.19 |
| LP-SM075 | 1.21 | 1.05 | 0.89 | 0.78 | 0.75 | 0.64 | 0.56 | 0.49 | 0.41 | 0.28 |
| LP-SM110 | 1.75 | 1.54 | 1.32 | 1.15 | 1.10 | 0.96 | 0.83 | 0.73 | 0.61 | 0.42 |
| LP-SM125 | 1.99 | 1.75 | 1.51 | 1.30 | 1.25 | 1.07 | 0.94 | 0.83 | 0.69 | 0.46 |
| LP-SM260 | 4.12 | 3.62 | 3.18 | 2.64 | 2.60 | 2.23 | 1.91 | 1.75 | 1.45 | 1.02 |
| LP-SM300 | 4.74 | 4.21 | 3.63 | 3.05 | 3.00 | 2.59 | 2.25 | 2.02 | 1.65 | 1.18 |
| LP-SM030C | 0.47 | 0.43 | 0.38 | 0.31 | 0.30 | 0.24 | 0.21 | 0.18 | 0.16 | 0.11 |
| LP-SM050C | 0.81 | 0.73 | 0.63 | 0.52 | 0.50 | 0.44 | 0.36 | 0.33 | 0.26 | 0.21 |
| LP-SM075C | 1.21 | 1.08 | 0.93 | 0.79 | 0.75 | 0.64 | 0.54 | 0.49 | 0.41 | 0.30 |
| LP-SM110C | 1.76 | 1.57 | 1.36 | 1.15 | 1.10 | 0.96 | 0.80 | 0.72 | 0.61 | 0.43 |
| LP-SM125C | 2.01 | 1.78 | 1.54 | 1.30 | 1.25 | 1.09 | 0.91 | 0.82 | 0.69 | 0.49 |
| LP-SM130C | 2.06 | 1.81 | 1.59 | 1.35 | 1.30 | 1.13 | 0.93 | 0.86 | 0.72 | 0.51 |
| LP-SM150C | 2.40 | 2.09 | 1.81 | 1.52 | 1.50 | 1.33 | 1.06 | 1.01 | 0.83 | 0.59 |
| LP-SM185C | 2.95 | 2.58 | 2.28 | 1.87 | 1.85 | 1.64 | 1.34 | 1.24 | 1.03 | 0.72 |
| LP-SM200C | 3.18 | 2.80 | 2.45 | 2.03 | 2.00 | 1.76 | 1.45 | 1.32 | 1.11 | 0.79 |
| LP-SM250C | 3.98 | 3.51 | 3.06 | 2.53 | 2.50 | 2.19 | 1.82 | 1.68 | 1.40 | 0.95 |
| LP-SM260C | 4.15 | 3.65 | 3.18 | 2.64 | 2.60 | 2.24 | 1.91 | 1.77 | 1.46 | 1.01 |
| LP-SM300C | 4.76 | 4.21 | 3.66 | 3.05 | 3.00 | 2.61 | 2.21 | 2.05 | 1.69 | 1.17 |
| LP-SM300C/24 | 4.76 | 4.21 | 3.66 | 3.05 | 3.00 | 2.61 | 2.21 | 2.05 | 1.69 | 1.17 |
| LP-SM400C | 6.35 | 5.63 | 4.86 | 4.05 | 4.00 | 3.46 | 2.95 | 2.72 | 2.24 | 1.53 |

Size 8763mm/3425mils

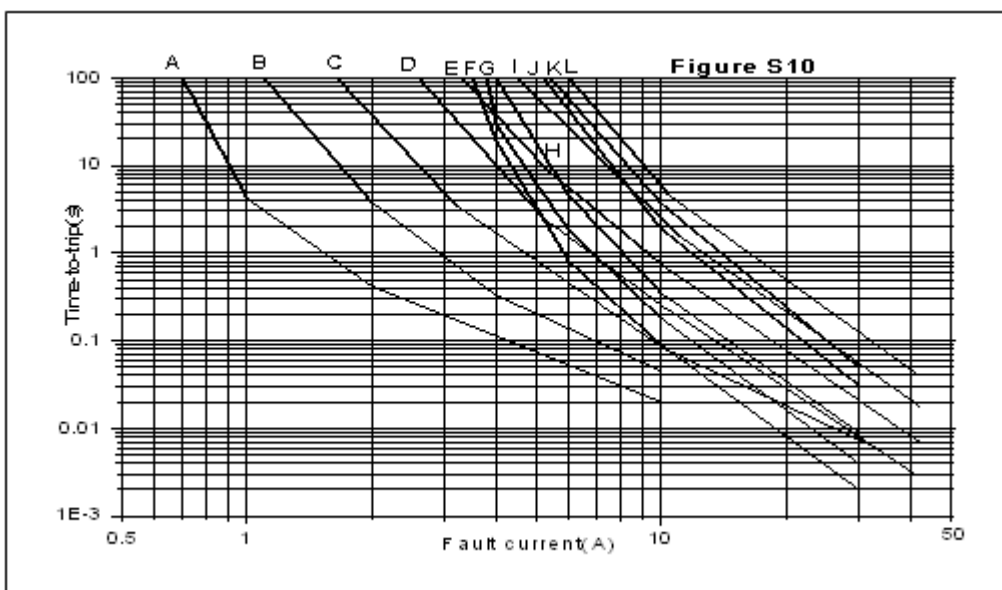
| Part number | Maximum Ambient Temperature | | | | | | | | | |
|-------------|-----------------------------|-------|------|------|------|------|------|------|------|------|
| | -40°C | -20°C | 0°C | 20°C | 25°C | 40°C | 50°C | 60°C | 70°C | 85°C |
| LP-SM130 | 2.05 | 1.84 | 1.59 | 1.32 | 1.30 | 1.12 | 0.94 | 0.87 | 0.73 | 0.49 |
| LP-SM150 | 2.42 | 2.10 | 1.81 | 1.52 | 1.50 | 1.30 | 1.11 | 1.01 | 0.85 | 0.57 |
| LP-SM185 | 2.96 | 2.62 | 2.26 | 1.88 | 1.85 | 1.59 | 1.36 | 1.26 | 1.03 | 0.69 |
| LP-SM200 | 3.19 | 2.84 | 2.45 | 2.06 | 2.00 | 1.75 | 1.46 | 1.36 | 1.12 | 0.76 |
| LP-SM250 | 3.99 | 3.54 | 3.06 | 2.56 | 2.50 | 2.18 | 1.85 | 1.71 | 1.41 | 0.94 |

Typical Time-to-Trip Charts at 25°C



LP-SM Series

- A = LP-SM030
- B = LP-SM050
- C = LP-SM075
- D = LP-SM110
- E = LP-SM125
- J = LP-SM260
- L = LP-SM300
- F = LP-SM130
- G = LP-SM150
- H = LP-SM185
- I = LP-SM200



LP-SM Series

- A = LP-SM030C
- B = LP-SM050C
- C = LP-SM075C
- D = LP-SM110C
- E = LP-SM125C
- J = LP-SM260C
- L = LP-SM300C, LP-SM300C/24
- F = LP-SM130C
- G = LP-SM150C
- H = LP-SM185C
- I = LP-SM200C
- K = LP-SM250C
- K = LP-SM250

Electrical Characteristics at 25°C

Size 7555mm/2920 mils

| Part number | I _H | I _T | V _{max} | I _{max} | Max. Time-to-trip | | Pd _{typ} | R _{min} | R _{1max} | Figures for Dimension |
|--------------|----------------|----------------|------------------|------------------|----------------------|-------|-------------------|------------------|-------------------|---------------------------------|
| | | | | | (A) | (S) | | | | |
| LP-SM030 | 0.30 | 0.60 | 60 | 10 | 1.5 | 3.00 | 1.9 | 0.700 | 4.800 | S3 |
| LP-SM050 | 0.50 | 1.00 | 60 | 10 | 2.5 | 4.00 | 1.9 | 0.350 | 1.400 | S3 |
| LP-SM075 | 0.75 | 1.50 | 60 | 40 | 8.0 | 0.30 | 1.9 | 0.290 | 1.000 | S3 |
| LP-SM110 | 1.10 | 2.20 | 33 | 40 | 8.0 | 0.50 | 1.9 | 0.100 | 0.480 | S3 |
| LP-SM125 | 1.25 | 2.50 | 24 | 40 | 8.0 | 2.00 | 1.6 | 0.070 | 0.250 | S3 |
| LP-SM260 | 2.60 | 5.20 | 6 | 40 | 8.0 | 20.00 | 1.9 | 0.025 | 0.075 | S3 |
| LP-SM300 | 3.00 | 6.00 | 6 | 40 | 8.0 | 35.00 | 1.9 | 0.015 | 0.048 | S3 |
| LP-SM030C | 0.30 | 0.60 | 60 | 10 | 1.5 | 3.00 | 1.9 | 0.700 | 4.800 | S2 |
| LP-SM050C | 0.50 | 1.00 | 60 | 10 | 2.5 | 4.00 | 1.9 | 0.350 | 1.400 | S2 |
| LP-SM075C | 0.75 | 1.50 | 60 | 40 | 8.0 | 0.30 | 1.9 | 0.290 | 1.000 | S2 |
| LP-SM110C | 1.10 | 2.20 | 33 | 40 | 8.0 | 0.50 | 1.9 | 0.100 | 0.480 | S2 |
| LP-SM125C | 1.25 | 2.50 | 24 | 40 | 8.0 | 2.00 | 1.6 | 0.070 | 0.250 | S2 |
| LP-SM130C | 1.30 | 2.60 | 33 | 40 | 8.0 | 4.00 | 2.1 | 0.080 | 0.280 | S2 |
| LP-SM150C | 1.50 | 3.00 | 33 | 40 | 8.0 | 5.00 | 2.1 | 0.060 | 0.250 | S2 |
| LP-SM185C | 1.85 | 3.70 | 33 | 40 | 8.0 | 5.00 | 2.1 | 0.045 | 0.165 | S2 |
| LP-SM200C | 2.00 | 4.00 | 15 | 40 | 8.0 | 12.00 | 2.1 | 0.045 | 0.125 | S2 |
| LP-SM250C | 2.50 | 5.00 | 15 | 40 | 8.0 | 25.00 | 1.9 | 0.025 | 0.085 | S2 |
| LP-SM260C | 2.60 | 5.20 | 6 | 40 | 8.0 | 20.00 | 1.9 | 0.025 | 0.075 | S2 |
| LP-SM300C | 3.00 | 6.00 | 6 | 40 | 8.0 | 35.00 | 1.9 | 0.015 | 0.048 | S2 |
| LP-SM300C/24 | 3.00 | 6.00 | 24 | 40 | 8.0 | 35.00 | 1.9 | 0.015 | 0.048 | S2 |
| LP-SM400C | 4.00 | 8.00 | 16 | 40 | 8.0 | 40.00 | 1.9 | 0.013 | 0.040 | S2 |

Size 8763mm/3425 mils

| Part number | I _H | I _T | V _{max} | I _{max} | Max. Time-to-trip | | Pd _{typ} | R _{min} | R _{1max} | Figures for Dimension |
|-------------|----------------|----------------|------------------|------------------|----------------------|-------|-------------------|------------------|-------------------|---------------------------------|
| | | | | | (A) | (S) | | | | |
| LP-SM130 | 1.30 | 2.60 | 33 | 40 | 8.0 | 4.00 | 2.1 | 0.080 | 0.280 | S3 |
| LP-SM150 | 1.50 | 3.00 | 33 | 40 | 8.0 | 5.00 | 2.1 | 0.060 | 0.250 | S3 |
| LP-SM185 | 1.85 | 3.70 | 33 | 40 | 8.0 | 5.00 | 2.1 | 0.045 | 0.165 | S3 |
| LP-SM200 | 2.00 | 4.00 | 15 | 40 | 8.0 | 12.00 | 2.1 | 0.045 | 0.125 | S3 |
| LP-SM250 | 2.50 | 5.00 | 15 | 40 | 8.0 | 25.00 | 1.9 | 0.025 | 0.085 | S3 |

I_H=Hold current: maximum current at which the device will not trip at 25°C still air.

I_T=Trip current: minimum current at which the device will always trip at 25°C still air.

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

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

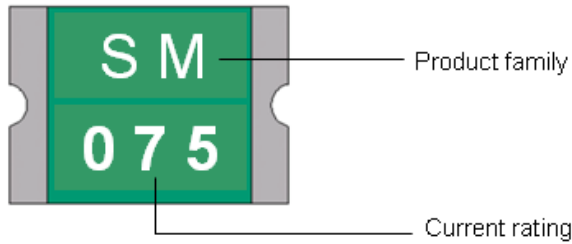
T_{trip}=Maximum time to trip at assigned current.

Pd_{typ}=Typical power dissipation: typical amount of power dissipated by the device when in state air environment.

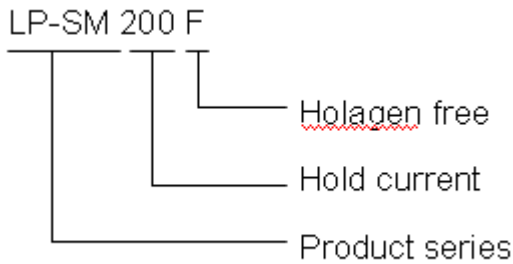
R_{min}=Minimum device resistance at 25°C prior to tripping.

R_{1max}=Maximum device resistance measured in the nontripped state 1 hour post reflow.

Marking System



Part Numbering System



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 | $T \leq$ maximum Time to Trip |
| Hold Current | 30min, at I_H | No trip |
| Trip Cycle Life | V_{max} , I_{max} , 100cycles | No arcing or burning |
| Trip Endurance | V_{max} , 24hours | No arcing or burning |

Packaging and Marking Information

Size 7555mm/2920 mils

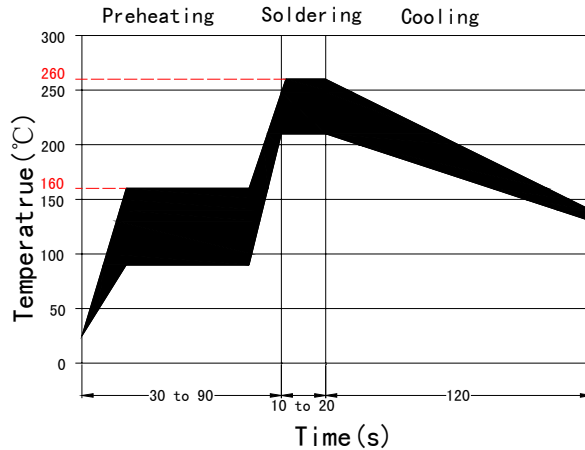
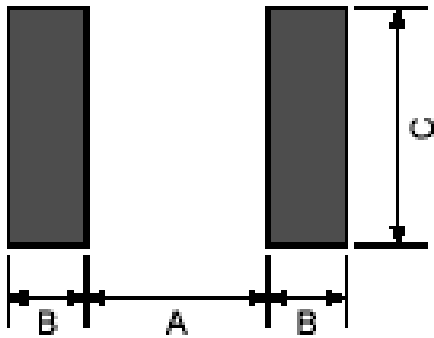
| Part number | Tape & Reel Quantity | Tape spc code | Part Marking | Recommended Pad Layout Figures[mm(In.)] | | | | | | Agency Recognition |
|-------------|----------------------|---------------|--------------|---|---------|-------------------|---------|-------------------|---------|--------------------|
| | | | | Dimension A(Nom.) | | Dimension B(Nom.) | | Dimension C(Nom.) | | |
| LP-SM030 | 2000 | 2920A | ⊗ 030 | 5.10 | (0.121) | 2.30 | (0.091) | 3.10 | (0.381) | UL,CSA,TUV |
| LP-SM050 | 2000 | 2920A | ⊗ 050 | 5.10 | (0.121) | 2.30 | (0.091) | 3.10 | (0.381) | UL,CSA,TUV |
| LP-SM075 | 2000 | 2920A | ⊗ 075 | 5.10 | (0.121) | 2.30 | (0.091) | 3.10 | (0.381) | UL,CSA,TUV |
| LP-SM110 | 2000 | 2920A | ⊗ 110 | 5.10 | (0.121) | 2.30 | (0.091) | 3.10 | (0.381) | UL,CSA,TUV |
| LP-SM125 | 2000 | 2920A | ⊗ 125 | 5.10 | (0.121) | 2.30 | (0.091) | 3.10 | (0.381) | UL,CSA,TUV |
| LP-SM260 | 2000 | 2920A | ⊗ 260 | 5.10 | (0.121) | 2.30 | (0.091) | 3.10 | (0.381) | UL,CSA,TUV |
| LP-SM300 | 2000 | 2920A | ⊗ 300 | 5.10 | (0.121) | 2.30 | (0.091) | 3.10 | (0.381) | TUV |
| LP-SM030C | 2000 | 2920B | SM030 | 4.60 | (0.211) | 2.00 | (0.081) | 5.30 | (0.341) | UL,CSA,TUV |
| LP-SM050C | 2000 | 2920B | SM050 | 4.60 | (0.211) | 2.00 | (0.081) | 5.30 | (0.341) | UL,CSA,TUV |

| | | | | | | | | | | |
|--------------|------|-------|-------|------|---------|------|---------|------|---------|------------|
| LP-SM075C | 2000 | 2920B | SM075 | 4.60 | (0.211) | 2.00 | (0.081) | 5.30 | (0.341) | UL,CSA,TUV |
| LP-SM110C | 2000 | 2920B | SM110 | 4.60 | (0.211) | 2.00 | (0.081) | 5.30 | (0.341) | UL,CSA,TUV |
| LP-SM125C | 2000 | 2920B | SM125 | 4.60 | (0.211) | 2.00 | (0.081) | 5.30 | (0.341) | UL,CSA,TUV |
| LP-SM130C | 2000 | 2920B | SM130 | 4.60 | (0.211) | 2.00 | (0.081) | 5.30 | (0.341) | UL,CSA,TUV |
| LP-SM150C | 2000 | 2920B | SM150 | 4.60 | (0.211) | 2.00 | (0.081) | 5.30 | (0.341) | UL,CSA,TUV |
| LP-SM185C | 2000 | 2920B | SM185 | 4.60 | (0.211) | 2.00 | (0.081) | 5.30 | (0.341) | UL,CSA,TUV |
| LP-SM200C | 2000 | 2920B | SM200 | 4.60 | (0.211) | 2.00 | (0.081) | 5.30 | (0.341) | UL,CSA,TUV |
| LP-SM250C | 2000 | 2920B | SM250 | 4.60 | (0.211) | 2.00 | (0.081) | 5.30 | (0.341) | UL,CSA,TUV |
| LP-SM260C | 2000 | 2920B | SM260 | 4.60 | (0.211) | 2.00 | (0.081) | 5.30 | (0.341) | UL,CSA,TUV |
| LP-SM300C | 2000 | 2920B | SM300 | 4.60 | (0.211) | 2.00 | (0.081) | 5.30 | (0.341) | TUV |
| LP-SM300C/24 | 2000 | 2920B | SM300 | 4.60 | (0.211) | 2.00 | (0.081) | 5.30 | (0.341) | Pending |
| LP-SM400C | 2000 | 2920B | SM400 | 4.60 | (0.211) | 2.00 | (0.081) | 5.30 | (0.341) | Pending |

Size 8763mm/3425 mils

| Part number | Tape & Reel Quantity | Tape spc code | Part Marking | Recommended Pad Layout Figures[mm(In.)] | | | | | | Agency Recognition |
|-------------|----------------------|---------------|--------------|---|---------|-------------------|---------|-------------------|---------|--------------------|
| | | | | Dimension A(Nom.) | | Dimension B(Nom.) | | Dimension C(Nom.) | | |
| LP-SM130 | 1500 | 3425A | ⊗130 | 6.10 | (0.181) | 2.30 | (0.091) | 4.60 | (0.421) | UL,CSA,TUV |
| LP-SM150 | 1500 | 3425A | ⊗150 | 6.10 | (0.181) | 2.30 | (0.091) | 4.60 | (0.421) | UL,CSA,TUV |
| LP-SM185 | 1500 | 3425A | ⊗185 | 6.10 | (0.181) | 2.30 | (0.091) | 4.60 | (0.421) | UL,CSA,TUV |
| LP-SM200 | 1500 | 3425A | ⊗200 | 6.10 | (0.181) | 2.30 | (0.091) | 4.60 | (0.421) | UL,CSA,TUV |
| LP-SM250 | 1500 | 3425A | ⊗250 | 6.10 | (0.181) | 2.30 | (0.091) | 4.60 | (0.421) | UL,CSA,TUV |

Solder Pad Layouts



* Recommended reflow methods: IR, Vapor phase oven, hot air oven, wave solder.

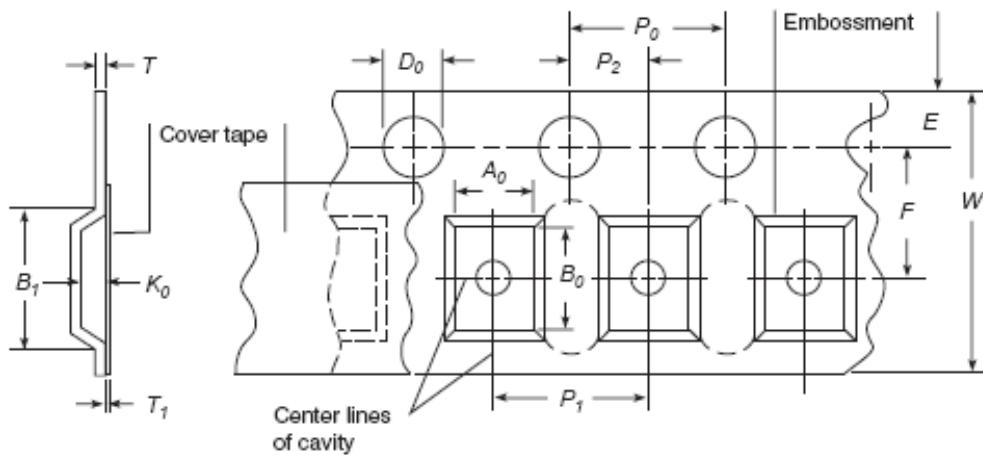
* Devices can be cleaned using standard industry methods and solvents.

Notes:

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

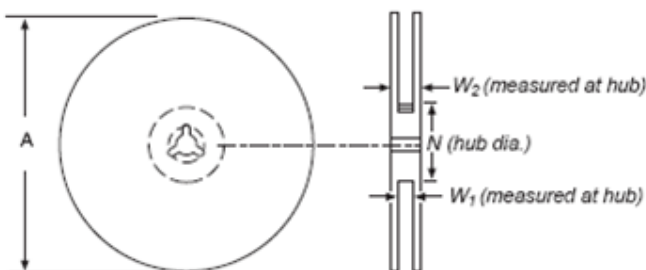
Tape Specification And Reel Dimensions

| Tape spc code | W | P0 | P1 | P2 | A | B | D | F | E | T | K |
|---------------|------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| 2920(A) | 16.0±0.10 | 4.00±0.10 | 8.00±0.10 | 2.00±0.10 | 5.60±0.10 | 8.10±0.10 | 1.55±0.05 | 7.50±0.10 | 1.75±0.10 | 0.30±0.05 | 3.40±0.10 |
| 2920(B) | 16.0±0.10 | 4.00±0.10 | 8.00±0.10 | 2.00±0.10 | 5.60±0.10 | 8.10±0.10 | 1.55±0.05 | 7.50±0.10 | 1.75±0.10 | 0.30±0.05 | 1.50±0.10 |
| 3425(A) | 16.15±0.15 | 4.00±0.10 | 12.0±0.10 | 2.00±0.10 | 6.90±0.10 | 9.40±0.10 | 1.55±0.05 | 7.50±0.10 | 1.75±0.10 | 0.30±0.05 | 3.40±0.10 |



Reel Dimensions

| Tape spc code | A | N | W1 | W2 |
|---------------|------------|----------|-----------|-----------|
| 2920(A) | 330+0/-1.5 | 100+1/-0 | 16.4+1/-0 | 24.2+1/-0 |
| 2920(B) | 330+0/-1.5 | 100+1/-0 | 16.4+1/-0 | 24.2+1/-0 |
| 3425(A) | 330+0/-1.5 | 100+1/-0 | 16.4+1/-0 | 24.2+1/-0 |



Storage

The maximum ambient temperature shall not exceed 40°C. Storage temperatures higher than 40°C could result in the deformation of packaging materials. The maximum relative humidity recommended for storage is 70%. 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:

PPTC devices are intended for protection against occasional over-current or over-temperature fault conditions, and should not be used when repeated fault conditions are anticipated. Operation beyond maximum ratings or improper use may result in device damage and possible electrical arcing and flame.

Notes:

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