

Terminal SMD and SMDC Series

Surface Mount



Web Resources



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Description

The SMD series provides surface mount overcurrent protection for applications where space is at a premium and resettable protection is desired.

Features & Benefits

- Broadest range of resettable devices available in industry
- Low resistance
- Small footprint - 2018, 2920 and 3425
- Fast time-to-trip
- RoHS compliant, lead-free and halogen-free

Applications

Mobile Electronics and Batteries

- Computer
- Portable electronics
- Multimedia
- Game machines
- Telephone and broadband
- Automotive
- Industrial controls
- Battery

Agency Approvals

| Agency | Agency File Number |
|--------|----------------------------------------------|
| | E74889 |
| | 78165 |
| | 50253253 72161793 72161779 72161795 |

Electrical Characteristics

| Part Number | Ordering Part Number | I_H | I_T | V_{MAX} | I_{MAX} | $P_{D MAX}$ | Max Time-to-trip | | R_{MIN} | R_{1MAX} |
|------------------|----------------------|-------|-------|--------------------|-----------|-------------|------------------|------|-----------|------------|
| | | (A) | (A) | (V _{DC}) | (A) | (W) | (A) | (s) | (Ω) | (Ω) |
| 2018 Size | | | | | | | | | | |
| SMD030F-2018 | RF0323-000 | 0.30 | 0.80 | 60 | 20 | 1.50 | 1.50 | 1.50 | 0.500 | 2.30 |
| decaSMDC050F/60 | RF1342-000 | 0.55 | 1.10 | 60 | 10 | 1.00 | 8.00 | 0.10 | 0.200 | 1.10 |
| SMD100F-2018 | RF0324-000 | 1.10 | 2.20 | 15 | 40 | 1.40 | 8.00 | 0.50 | 0.100 | 0.40 |
| SMD150F-2018 | RF0325-000 | 1.50 | 3.00 | 15 | 40 | 1.80 | 8.00 | 1.00 | 0.070 | 0.18 |
| SMD200F-2018 | RF0326-000 | 2.00 | 4.20 | 6 | 40 | 1.50 | 8.00 | 3.00 | 0.048 | 0.10 |
| 2920 Size | | | | | | | | | | |
| SMD030F | RF0314-000 | 0.30 | 0.60 | 60 | 10 | 1.70 | 1.50 | 3.00 | 1.200 | 4.800 |
| SMDC030F | RF4438-000 | 0.30 | 0.60 | 60 | 10 | 1.50 | 1.50 | 3.00 | 0.300 | 3.400 |
| SMD050F | RF0315-000 | 0.50 | 1.00 | 60 | 10 | 1.70 | 2.50 | 4.00 | 0.350 | 1.400 |
| SMDC050F | RF4439-000 | 0.50 | 1.00 | 60 | 10 | 1.50 | 2.50 | 4.00 | 0.150 | 1.200 |
| SMD075F | RF0316-000 | 0.75 | 1.50 | 30 | 40 | 1.70 | 8.00 | 0.30 | 0.350 | 1.000 |
| SMDC075F | RF4441-000 | 0.75 | 1.50 | 33 | 40 | 1.50 | 8.00 | 0.30 | 0.100 | 0.610 |
| SMD075F/60 | RF0317-000 | 0.75 | 1.50 | 60 | 10 | 1.70 | 8.00 | 0.30 | 0.350 | 1.000 |

Notes:

I_H : Hold current: maximum current device will pass without interruption in 20°C still air.
 I_T : Trip current: minimum current that will switch the device from low resistance to high resistance in 20°C still air.
 V_{MAX} : Maximum continuous voltage device can withstand without damage at rated current.

I_{MAX} : Maximum fault current device can withstand without damage at rated voltage.
 P_D : Power dissipated from device when in the tripped state in 20°C still air.
 R_{MIN} : Minimum resistance of device as supplied at 20°C unless otherwise specified.
 R_{1MAX} : Maximum resistance measured one hour post-trip or post-reflow at 20°C.

Terminal SMD and SMDC Series

Surface Mount

Electrical Characteristics (Cont'd)

| Part Number | Ordering Part Number | I_H | I_T | V_{MAX} | I_{MAX} | $P_{D MAX}$ | Max Time-to-trip | | R_{MIN} | R_{1MAX} |
|------------------|----------------------|-------|-------|--------------------|-----------|-------------|------------------|-------|-----------|------------|
| | | (A) | (A) | (V _{DC}) | (A) | (W) | (A) | (s) | (Ω) | (Ω) |
| 2920 Size | | | | | | | | | | |
| SMD100F | RF0318-000 | 1.10 | 2.20 | 30 | 40 | 1.70 | 8.00 | 0.50 | 0.120 | 0.480 |
| SMD100F/33 | RF0319-000 | 1.10 | 2.20 | 33 | 40 | 1.70 | 8.00 | 0.50 | 0.120 | 0.410 |
| SMDH120 | RF1478-000 | 1.20 | 2.30 | 16 | 50 | 2.00 | 8.00 | 2.00 | 0.150 | 0.340 |
| SMD125F | RF0320-000 | 1.25 | 2.50 | 15 | 40 | 1.70 | 8.00 | 2.00 | 0.070 | 0.250 |
| SMDC125F/33 | RF4298-000 | 1.25 | 2.50 | 33 | 40 | 1.50 | 8.00 | 2.00 | 0.040 | 0.250 |
| SMD150F/33-2920 | RF2285-000 | 1.50 | 3.00 | 33 | 40 | 1.50 | 8.00 | 5.00 | 0.080 | 0.230 |
| SMDC185F/33 | RF3182-000 | 1.85 | 3.70 | 33 | 40 | 1.70 | 8.00 | 2.50 | 0.050 | 0.150 |
| SMD200F/24-2920 | RF2286-000 | 2.00 | 4.00 | 24 | 40 | 1.50 | 8.00 | 5.00 | 0.050 | 0.125 |
| SMD250F/15-2920 | RF2287-000 | 2.50 | 5.00 | 15 | 40 | 1.50 | 8.00 | 10.00 | 0.035 | 0.085 |
| SMD260F | RF0321-000 | 2.60 | 5.20 | 6 | 40 | 1.70 | 8.00 | 20.00 | 0.025 | 0.075 |
| SMD300F | RF0322-000 | 3.00 | 6.00 | 6 | 40 | 1.50 | 8.00 | 35.00 | 0.015 | 0.048 |
| SMD300F/15 | RF1835-000 | 3.00 | 6.00 | 15 | 40 | 1.50 | 8.00 | 35.00 | 0.015 | 0.050 |
| SMDC300F/24 | RF3102-000 | 3.00 | 6.00 | 24 | 40 | 1.70 | 8.00 | 5.00 | 0.015 | 0.072 |
| SMDC310F/18 | RF3763-000 | 3.10 | 6.00 | 18 | 50 | 1.50 | 8.00 | 25.00 | 0.013 | 0.036 |
| 3425 Size | | | | | | | | | | |
| SMD150F | RF0308-000 | 1.50 | 3.00 | 15 | 40 | 1.90 | 8.00 | 5.00 | 0.060 | 0.250 |
| SMD150F/33 | RF0311-000 | 1.50 | 3.00 | 33 | 40 | 1.90 | 8.00 | 5.00 | 0.080 | 0.230 |
| SMDH160 | RF1479-000 | 1.60 | 3.20 | 16 | 70 | 2.20 | 8.00 | 15.00 | 0.050 | 0.150 |
| SMD185F | RF1238-000 | 1.85 | 3.60 | 33 | 40 | 1.50 | 8.00 | 5.00 | 0.065 | 0.165 |
| SMD200F | RF0312-000 | 2.00 | 4.00 | 15 | 40 | 1.90 | 8.00 | 12.00 | 0.050 | 0.125 |
| SMD250F | RF0313-000 | 2.50 | 5.00 | 15 | 40 | 1.90 | 8.00 | 25.00 | 0.035 | 0.085 |

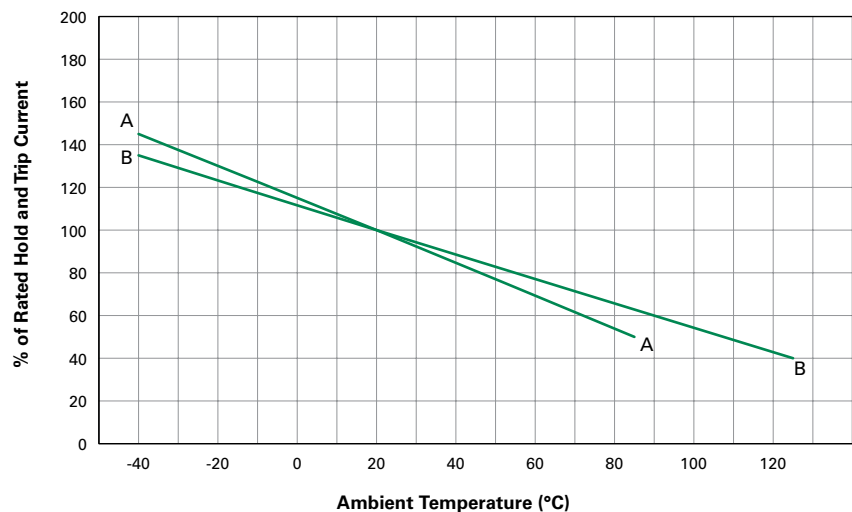
Notes:

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I_{MAX} : Maximum fault current device can withstand without damage at rated voltage.
 P_D : Power dissipated from device when in the tripped state in 20°C still air.
 R_{MIN} : Minimum resistance of device as supplied at 20°C unless otherwise specified.
 R_{1MAX} : Maximum resistance measured one hour post-trip or post-reflow at 20°C.

Temperature Derating Curve

A = decaSMDC / SMDC and SMD
B = SMDH120, SMDH160



Terminal SMD and SMDC Series

Surface Mount

Temperature Rerating

| Part Number | Maximum Ambient Temperature | | | | | | | | | | | |
|-------------------------|-----------------------------|-------|------|------|------|------|------|------|------|------|------|-------|
| | -40°C | -20°C | 0°C | 20°C | 25°C | 40°C | 50°C | 60°C | 70°C | 80°C | 85°C | 125°C |
| Hold Current (A) | | | | | | | | | | | | |
| Size 2018 | | | | | | | | | | | | |
| SMD030F-2018 | 0.48 | 0.42 | 0.35 | 0.30 | 0.28 | 0.24 | 0.21 | 0.17 | 0.15 | 0.12 | 0.10 | — |
| decaSMDC050F/60 | 1.00 | 0.85 | 0.70 | 0.55 | 0.53 | 0.45 | 0.40 | 0.35 | 0.30 | 0.25 | 0.23 | — |
| SMD100F-2018 | 1.59 | 1.43 | 1.20 | 1.10 | 1.03 | 0.94 | 0.85 | 0.72 | 0.69 | 0.61 | 0.57 | — |
| SMD150F-2018 | 2.21 | 1.97 | 1.70 | 1.50 | 1.43 | 1.26 | 1.15 | 1.00 | 0.91 | 0.79 | 0.73 | — |
| SMD200F-2018 | 2.81 | 2.54 | 2.27 | 2.00 | 1.93 | 1.73 | 1.59 | 1.46 | 1.32 | 1.19 | 1.12 | — |
| Size 2920 | | | | | | | | | | | | |
| SMD030F | 0.44 | 0.39 | 0.32 | 0.30 | 0.28 | 0.26 | 0.23 | 0.19 | 0.18 | 0.17 | 0.15 | — |
| SMDC030F | 0.49 | 0.43 | 0.37 | 0.31 | 0.30 | 0.25 | 0.22 | 0.19 | 0.16 | 0.14 | 0.12 | — |
| SMD050F | 0.73 | 0.65 | 0.55 | 0.50 | 0.47 | 0.43 | 0.39 | 0.33 | 0.31 | 0.28 | 0.26 | — |
| SMDC050F | 0.86 | 0.75 | 0.65 | 0.54 | 0.50 | 0.43 | 0.37 | 0.32 | 0.26 | 0.22 | 0.28 | — |
| SMD075F | 1.11 | 0.99 | 0.84 | 0.75 | 0.71 | 0.63 | 0.57 | 0.49 | 0.45 | 0.39 | 0.36 | — |
| SMDC075F | 1.17 | 1.04 | 0.90 | 0.77 | 0.75 | 0.64 | 0.57 | 0.50 | 0.44 | 0.32 | 0.34 | — |
| SMD075F/60 | 1.11 | 0.99 | 0.84 | 0.75 | 0.71 | 0.63 | 0.57 | 0.49 | 0.45 | 0.39 | 0.36 | — |
| SMD100F | 1.59 | 1.43 | 1.20 | 1.10 | 1.03 | 0.94 | 0.85 | 0.72 | 0.69 | 0.61 | 0.57 | — |
| SMD100F/33 | 1.48 | 1.35 | 1.20 | 1.10 | 1.06 | 0.98 | 0.91 | 0.83 | 0.79 | 0.73 | 0.69 | — |
| SMDH120 | 2.34 | 1.96 | 1.58 | 1.20 | 1.15 | 1.02 | 0.92 | 0.83 | 0.74 | 0.65 | 0.60 | 0.26 |
| SMD125F | 1.89 | 1.68 | 1.50 | 1.25 | 1.21 | 1.04 | 0.93 | 0.85 | 0.71 | 0.61 | 0.55 | — |
| SMDC125F/33 | 2.02 | 1.78 | 1.55 | 1.31 | 1.25 | 1.08 | 0.96 | 0.84 | 0.72 | 0.60 | 0.54 | — |
| SMD150F/33-2920 | 2.27 | 2.01 | 1.76 | 1.50 | 1.44 | 1.25 | 1.12 | 0.99 | 0.86 | 0.74 | 0.67 | — |
| SMDC185F/33 | 2.83 | 2.50 | 2.20 | 1.85 | 1.74 | 1.53 | 1.37 | 1.22 | 1.04 | 0.88 | 0.80 | — |
| SMD200F/24-2920 | 2.90 | 2.60 | 2.30 | 2.00 | 1.93 | 1.70 | 1.55 | 1.40 | 1.25 | 1.10 | 1.03 | — |
| SMD250F/15-2920 | 3.65 | 3.25 | 2.80 | 2.50 | 2.33 | 2.02 | 1.82 | 1.60 | 1.41 | 1.20 | 1.11 | — |
| SMD260F | 3.82 | 3.41 | 2.90 | 2.60 | 2.45 | 2.19 | 1.99 | 1.70 | 1.58 | 1.38 | 1.28 | — |
| SMD300F | 4.13 | 3.75 | 3.30 | 3.00 | 2.87 | 2.62 | 2.43 | 2.25 | 2.00 | 1.87 | 1.78 | — |
| SMD300F/15 | 4.20 | 3.80 | 3.30 | 3.00 | 2.90 | 2.62 | 2.43 | 2.25 | 2.00 | 1.87 | 1.78 | — |
| SMDC300F/24 | 4.70 | 4.19 | 3.70 | 3.17 | 3.00 | 2.66 | 2.41 | 2.20 | 1.90 | 1.65 | 1.50 | — |
| SMDC310F/18 | 4.50 | 4.06 | 3.78 | 3.19 | 3.10 | 2.75 | 2.54 | 2.32 | 2.10 | 1.88 | 1.76 | — |
| Size 3425 | | | | | | | | | | | | |
| SMD150F | 2.30 | 2.04 | 1.80 | 1.50 | 1.45 | 1.23 | 1.10 | 0.99 | 0.83 | 0.70 | 0.63 | — |
| SMD150F/33 | 2.30 | 2.04 | 1.80 | 1.50 | 1.45 | 1.23 | 1.10 | 0.99 | 0.83 | 0.70 | 0.63 | — |
| SMDH160 | 2.14 | 1.96 | 1.78 | 1.60 | 1.56 | 1.42 | 1.33 | 1.24 | 1.15 | 1.06 | 1.02 | 0.44 |
| SMD185F | 2.54 | 2.29 | 2.20 | 1.85 | 1.80 | 1.55 | 1.43 | 1.31 | 1.19 | 1.06 | 1.00 | — |
| SMD200F | 3.01 | 2.67 | 2.30 | 2.00 | 1.90 | 1.66 | 1.50 | 1.30 | 1.16 | 0.99 | 0.91 | — |
| SMD250F | 3.72 | 3.31 | 2.80 | 2.50 | 2.35 | 2.09 | 1.89 | 1.60 | 1.48 | 1.28 | 1.18 | — |

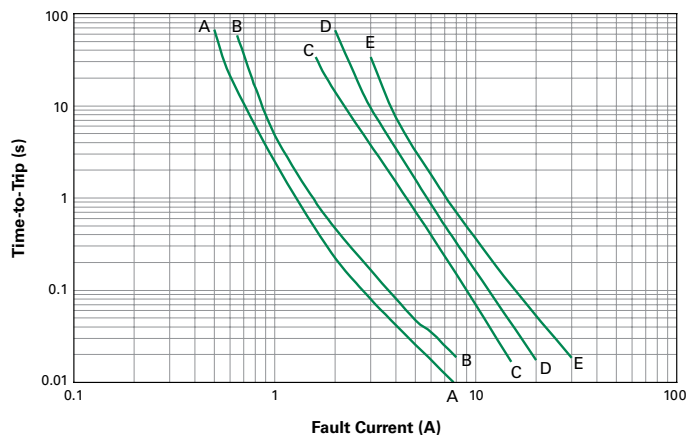
Terminal SMD and SMDC Series

Surface Mount

Typical Time-to-Trip Curves at 20°C

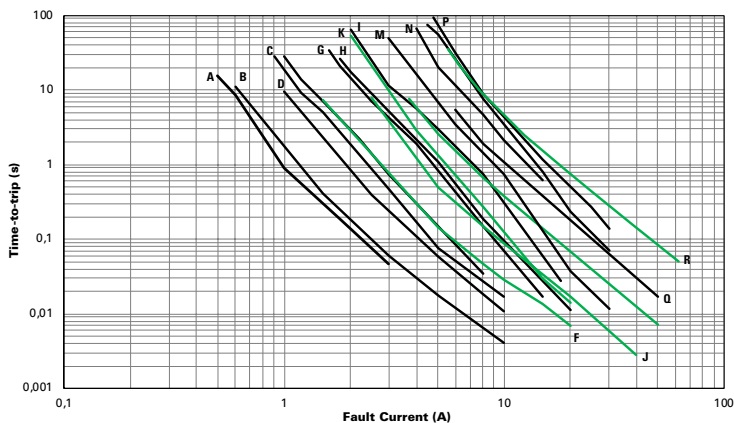
midSMD

- A = SMD030F-2018
- B = decaSMDC050F/60
- C = SMD100F-2018
- D = SMD150F-2018
- E = SMD200F-2018



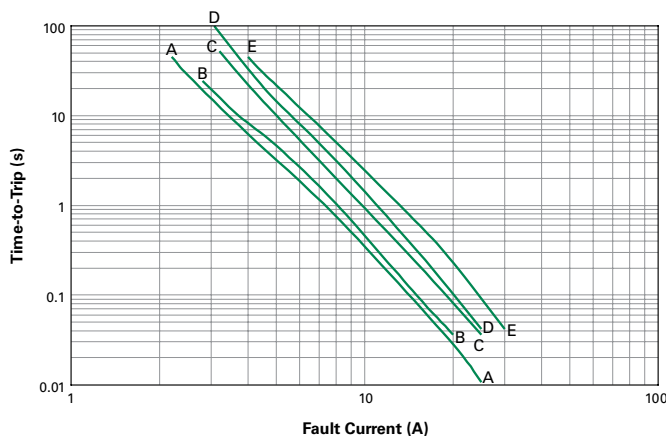
Size 2920

- A = SMD030F
- B = SMDC030F
- C = SMD050F
- D = SMDC050F
- E = SMD075F, SMD075F/60
- F = SMDC075F
- G = SMD100F, SMD100F/33
- H = SMDH120
- I = SMD125F
- J = SMDC125F/33
- K = SMD150F/33-2920
- L = SMDC185F/33
- M = SMD200F/24-2920
- N = SMD250F/15-2920
- O = SMD260F
- P = SMD300F, SMD300F/15
- Q = SMDC300F/24
- R = SMDC310F/18



Size 3425

- A = SMD150F, SMD150F/33
- B = SMDH160
- C = SMD185F
- D = SMD200F
- E = SMD250F



Note: The average time current curves and Temperature Derating curve performance is affected by a number of variables, and these curves provided as guidance only. Customer must verify the performance in their application.

Terminal SMD and SMDC Series

Surface Mount

Physical Specifications

| | |
|----------------------------------|-----------------------------------------------------------------------------|
| Terminal Pad Material | 100% Matte Tin with Nickel Underplate |
| Soldering Characteristics | ANSI/J-STD-002 Category 3 (midSMD) ANSI/J-STD-002 Category 1 (SMD, SMD2) |
| Solder Heat Withstand | per IEC-STD 68-2-20, Test Tb, Section 5, Method 1a |
| Flammability Resistance | per IEC 695-2-2 Needle Flame Test for 20 seconds |

Environmental Specifications

| Test | Test Method | Conditions | Resistance Change |
|---------------------------|--------------------------|-------------------------|-------------------|
| Storage Life | PS300, Section 5.3.2 | 60°C, 1000 hrs | ±3% typ |
| | | 85°C, 1000 hrs | ±3% typ |
| Humidity Aging | PS300, Section 5.3.1 | 85°C, 85% R.H., 100 hrs | ±1.2% typ |
| Thermal Shock | MIL-STD-202, Method 107G | 85°C, -40°C (20 Times) | -33% typ |
| | | 125°C, -55°C (10 Times) | -33% typ |
| Vibration | MIL-STD-883C | per MIL-STD-883C | No Change |
| Solvent Resistance | PS300, Section 5.2.2 | Freon | No Change |
| | | Trichloroethane | No Change |
| | | Hydrocarbons | No Change |

| | |
|----------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Moisture Resistance Level | Level 2a, J-STD-020 |
| Storage Conditions | 40°C max, 70% RH max; devices should remain in original sealed bags prior to use. Devices may not meet specified values if these storage conditions are exceeded. |

Terminal SMD and SMDC Series

Surface Mount

Dimension Figures

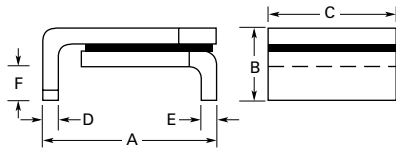


Figure 1

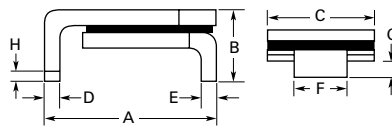


Figure 2

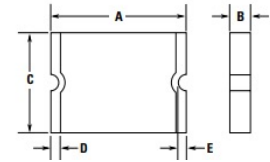


Figure 3

Dimensions

| Part Number | Dimensions in Millimeters (Inches) | | | | | | | | | | | | | | | Figure |
|------------------|------------------------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|--------|
| | A | | B | | C | | D | | E | | F | | G | | H | |
| | Min | Max | Min | Max | Min | Max | Min | Max | Min | Max | Min | Max | Min | Max | Min | |
| Size 2018 | | | | | | | | | | | | | | | | |
| SMD030F-2018 | 4.72 (0.186) | 5.44 (0.214) | — | 1.78 (0.070) | 4.22 (0.166) | 4.93 (0.194) | 0.25 (0.010) | 0.36 (0.014) | 0.25 (0.010) | 0.36 (0.014) | 0.30 (0.012) | 0.46 (0.018) | — | — | — | 1&2 |
| decaSMDC050F/60 | 4.70 (0.185) | 5.31 (0.209) | 0.63 (0.025) | 0.89 (0.035) | 4.19 (0.165) | 4.81 (0.189) | 0.25 (0.010) | 0.95 (0.040) | 0.25 (0.010) | — | — | — | — | — | — | 3 |
| SMD100F-2018 | 4.72 (0.186) | 5.44 (0.214) | — | 1.52 (0.060) | 4.22 (0.166) | 4.93 (0.194) | 0.25 (0.010) | 0.36 (0.014) | 0.25 (0.010) | 0.36 (0.014) | 0.30 (0.012) | 0.46 (0.018) | — | — | — | 1&2 |
| SMD150F-2018 | 4.72 (0.186) | 5.44 (0.214) | — | 1.52 (0.060) | 4.22 (0.166) | 4.93 (0.194) | 0.25 (0.010) | 0.36 (0.014) | 0.25 (0.010) | 0.36 (0.014) | 0.30 (0.012) | 0.46 (0.018) | — | — | — | 1&2 |
| SMD200F-2018 | 4.72 (0.186) | 5.44 (0.214) | — | 1.52 (0.060) | 4.22 (0.166) | 4.93 (0.194) | 0.25 (0.010) | 0.36 (0.014) | 0.25 (0.010) | 0.36 (0.014) | 0.30 (0.012) | 0.46 (0.018) | — | — | — | 1&2 |
| Size 2920 | | | | | | | | | | | | | | | | |
| SMD030F | 6.73 (0.265) | 7.98 (0.314) | — | 3.18 (0.125) | 4.80 (0.19) | 5.44 (0.214) | 0.56 (0.022) | 0.71 (0.028) | 0.56 (0.022) | 0.71 (0.028) | 2.16 (0.085) | 2.41 (0.095) | 0.66 (0.026) | 1.37 (0.054) | 0.43 (0.017) | 1&2 |
| SMDC030F | 7.30 (0.287) | 7.70 (0.303) | 0.63 (0.025) | 0.90 (0.035) | 4.90 (0.193) | 5.30 (0.209) | 0.25 (0.010) | 0.95 (0.040) | 0.20 (0.008) | — | — | — | — | — | — | 3 |
| SMD050F | 6.73 (0.265) | 7.98 (0.314) | — | 3.18 (0.125) | 4.80 (0.19) | 5.44 (0.214) | 0.56 (0.022) | 0.71 (0.028) | 0.56 (0.022) | 0.71 (0.028) | 2.16 (0.085) | 2.41 (0.095) | 0.66 (0.026) | 1.37 (0.054) | 0.43 (0.017) | 1&2 |
| SMDC50F | 7.30 (0.297) | 7.70 (0.303) | 0.63 (0.025) | 0.90 (0.035) | 4.90 (0.193) | 5.30 (0.209) | 0.25 (0.010) | 0.95 (0.040) | 0.20 (0.008) | — | — | — | — | — | — | 3 |
| SMD075F | 6.73 (0.265) | 7.98 (0.314) | — | 3.18 (0.125) | 4.80 (0.19) | 5.44 (0.214) | 0.56 (0.022) | 0.71 (0.028) | 0.56 (0.022) | 0.71 (0.028) | 2.16 (0.085) | 2.41 (0.095) | 0.66 (0.026) | 1.37 (0.054) | 0.43 (0.017) | 1&2 |
| SMDC075F | 7.30 (0.297) | 7.70 (0.303) | 0.63 (0.025) | 0.90 (0.035) | 4.90 (0.193) | 5.30 (0.209) | 0.25 (0.010) | 0.95 (0.040) | 0.20 (0.008) | — | — | — | — | — | — | 3 |
| SMD075F/60 | 6.73 (0.265) | 7.98 (0.314) | — | 3.18 (0.125) | 4.80 (0.19) | 5.44 (0.214) | 0.56 (0.022) | 0.71 (0.028) | 0.56 (0.022) | 0.71 (0.028) | 2.16 (0.085) | 2.41 (0.095) | 0.66 (0.026) | 1.37 (0.054) | 0.43 (0.017) | 1&2 |
| SMD100F | 6.73 (0.265) | 7.98 (0.314) | — | 3.00 (0.118) | 4.80 (0.19) | 5.44 (0.214) | 0.56 (0.022) | 0.71 (0.028) | 0.56 (0.022) | 0.71 (0.028) | 2.16 (0.085) | 2.41 (0.095) | 0.66 (0.026) | 1.37 (0.054) | 0.43 (0.017) | 1&2 |
| SMD100F/33 | 6.73 (0.265) | 7.98 (0.314) | — | 3.00 (0.118) | 4.80 (0.19) | 5.44 (0.214) | 0.56 (0.022) | 0.71 (0.028) | 0.56 (0.022) | 0.71 (0.028) | 2.16 (0.085) | 2.41 (0.095) | 0.66 (0.026) | 1.37 (0.054) | 0.43 (0.017) | 1&2 |
| SMDH120 | 6.73 (0.265) | 7.98 (0.314) | — | 3.00 (0.118) | 4.80 (0.19) | 5.44 (0.214) | 0.56 (0.022) | 0.71 (0.028) | 0.56 (0.022) | 0.71 (0.028) | 2.16 (0.085) | 2.41 (0.095) | 0.66 (0.026) | 1.37 (0.054) | 0.43 (0.017) | 1&2 |
| SMD125F | 6.73 (0.265) | 7.98 (0.314) | — | 3.00 (0.118) | 4.80 (0.19) | 5.44 (0.214) | 0.56 (0.022) | 0.71 (0.028) | 0.56 (0.022) | 0.71 (0.028) | 2.16 (0.085) | 2.41 (0.095) | 0.66 (0.026) | 1.37 (0.054) | 0.43 (0.017) | 1&2 |
| SMDC125F/33 | 7.30 (0.287) | 7.70 (0.303) | 0.45 (0.018) | 0.71 (0.028) | 4.90 (0.193) | 5.30 (0.209) | 0.25 (0.010) | 0.95 (0.040) | 0.20 (0.008) | — | — | — | — | — | — | 3 |

Terminal SMD and SMDC Series

Surface Mount

Dimension Figures

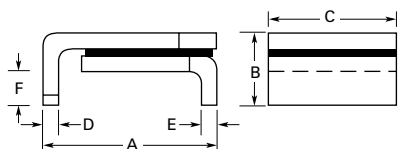


Figure 1

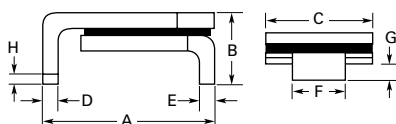


Figure 2

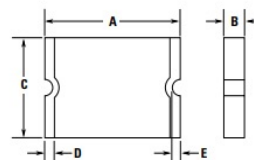


Figure 3

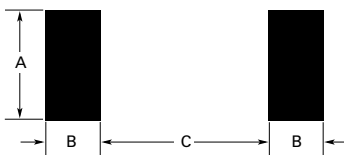
Dimensions (Cont'd)

| Part Number | Dimensions in Millimeters (Inches) | | | | | | | | | | | | | | | Figure |
|------------------|------------------------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|--------|
| | A | | B | | C | | D | | E | | F | | G | | H | |
| | Min | Max | Min | Max | Min | Max | Min | Max | Min | Max | Min | Max | Min | Max | Min | |
| Size 2920 | | | | | | | | | | | | | | | | |
| SMD150F/33-2920 | 6.73 (0.265) | 7.98 (0.314) | — | 3.00 (0.118) | 4.80 (0.19) | 5.44 (0.214) | 0.56 (0.022) | 0.71 (0.028) | 0.56 (0.022) | 0.71 (0.028) | 2.16 (0.085) | 2.41 (0.095) | 0.66 (0.026) | 1.37 (0.054) | 0.43 (0.017) | 1&2 |
| SMDC185F/33 | 7.30 (0.287) | 7.70 (0.303) | 0.90 (0.035) | 1.20 (0.047) | 4.90 (0.193) | 5.30 (0.209) | 0.25 (0.010) | 0.95 (0.040) | 0.20 (0.008) | — | — | — | — | — | — | 3 |
| SMD200F/24-2920 | 6.73 (0.265) | 7.98 (0.314) | — | 3.00 (0.118) | 4.80 (0.19) | 5.44 (0.214) | 0.56 (0.022) | 0.71 (0.028) | 0.56 (0.022) | 0.71 (0.028) | 2.16 (0.085) | 2.41 (0.095) | 0.66 (0.026) | 1.37 (0.054) | 0.43 (0.017) | 1&2 |
| SMD250F/15-2920 | 6.73 (0.265) | 7.98 (0.314) | — | 3.00 (0.118) | 4.80 (0.19) | 5.44 (0.214) | 0.56 (0.022) | 0.71 (0.028) | 0.56 (0.022) | 0.71 (0.028) | 2.16 (0.085) | 2.41 (0.095) | 0.66 (0.026) | 1.37 (0.054) | 0.43 (0.017) | 1&2 |
| SMD260F | 6.73 (0.265) | 7.98 (0.314) | — | 3.00 (0.118) | 4.80 (0.19) | 5.44 (0.214) | 0.56 (0.022) | 0.71 (0.028) | 0.56 (0.022) | 0.71 (0.028) | 2.16 (0.085) | 2.41 (0.095) | 0.66 (0.026) | 1.37 (0.054) | 0.43 (0.017) | 1&2 |
| SMD300F | 6.73 (0.265) | 7.98 (0.314) | — | 3.00 (0.118) | 4.80 (0.19) | 5.44 (0.214) | 0.56 (0.022) | 0.71 (0.028) | 0.56 (0.022) | 0.71 (0.028) | 2.16 (0.085) | 2.41 (0.095) | 0.66 (0.026) | 1.37 (0.054) | 0.43 (0.017) | 1&2 |
| SMD300F/15 | 6.73 (0.265) | 7.98 (0.314) | — | 3.00 (0.118) | 4.80 (0.19) | 5.44 (0.214) | 0.56 (0.022) | 0.71 (0.028) | 0.56 (0.022) | 0.71 (0.028) | 2.16 (0.085) | 2.41 (0.095) | 0.66 (0.026) | 1.37 (0.054) | 0.43 (0.017) | 1&2 |
| SMDC300F/24 | 7.30 (0.287) | 7.70 (0.303) | 0.80 (0.031) | 1.10 (0.043) | 4.90 (0.193) | 5.30 (0.209) | 0.25 (0.010) | 0.95 (0.040) | 0.20 (0.008) | — | — | — | — | — | — | 3 |
| SMD310F/18 | 7.30 (0.287) | 7.70 (0.303) | 1.10 (0.043) | 1.70 (0.067) | 4.90 (0.193) | 5.30 (0.209) | 0.95 (0.040) | 1.45 (0.057) | 0.35 (0.014) | — | — | — | — | — | — | 3 |
| Size 3425 | | | | | | | | | | | | | | | | |
| SMD150F | 8.00 (0.315) | 9.40 (0.370) | — | 3.00 (0.118) | 6.00 (0.236) | 6.71 (0.264) | 0.56 (0.022) | 0.71 (0.028) | 0.56 (0.022) | 0.71 (0.028) | 3.68 (0.145) | 3.94 (0.155) | 0.66 (0.026) | 1.37 (0.054) | 0.43 (0.017) | 1&2 |
| SMD150F/33 | 8.00 (0.315) | 9.40 (0.370) | — | 3.00 (0.118) | 6.00 (0.236) | 6.71 (0.264) | 0.56 (0.022) | 0.71 (0.028) | 0.56 (0.022) | 0.71 (0.028) | 3.68 (0.145) | 3.94 (0.155) | 0.66 (0.026) | 1.37 (0.054) | 0.43 (0.017) | 1&2 |
| SMDH160 | 8.00 (0.315) | 9.40 (0.370) | — | 3.00 (0.118) | 6.00 (0.236) | 6.71 (0.264) | 0.56 (0.022) | 0.71 (0.028) | 0.56 (0.022) | 0.71 (0.028) | 3.68 (0.145) | 3.94 (0.155) | 0.66 (0.026) | 1.37 (0.054) | 0.43 (0.017) | 1&2 |
| SMD185F | 8.00 (0.315) | 9.40 (0.370) | — | 3.00 (0.118) | 6.00 (0.236) | 6.71 (0.264) | 0.56 (0.022) | 0.71 (0.028) | 0.56 (0.022) | 0.71 (0.028) | 3.68 (0.145) | 3.94 (0.155) | 0.66 (0.026) | 1.37 (0.054) | 0.43 (0.017) | 1&2 |
| SMD200F | 8.00 (0.315) | 9.40 (0.370) | — | 3.00 (0.118) | 6.00 (0.236) | 6.71 (0.264) | 0.56 (0.022) | 0.71 (0.028) | 0.56 (0.022) | 0.71 (0.028) | 3.68 (0.145) | 3.94 (0.155) | 0.66 (0.026) | 1.37 (0.054) | 0.43 (0.017) | 1&2 |
| SMD250F | 8.00 (0.315) | 9.40 (0.370) | — | 3.00 (0.118) | 6.00 (0.236) | 6.71 (0.264) | 0.56 (0.022) | 0.71 (0.028) | 0.56 (0.022) | 0.71 (0.028) | 3.68 (0.145) | 3.94 (0.155) | 0.66 (0.026) | 1.37 (0.054) | 0.43 (0.017) | 1&2 |

Terminal SMD and SMDC Series

Surface Mount

Recommended Pad Layout



Packaging and Marking Information

| Part Number | Tape and Reel Quantity | Standard Package | Part Marking | Recommended Pad Layout Figures [mm (in)] | | | Agency Recognition |
|------------------|------------------------|------------------|--------------|------------------------------------------|-------------------|-------------------|--------------------|
| | | | | Dimension A (Nom) | Dimension B (Nom) | Dimension C (Nom) | |
| Size 2018 | | | | | | | |
| SMD030F-2018 | 4,000 | 20,000 | A03F | 4.60 (0.18) | 1.50 (0.059) | 3.40 (0.134) | UL, CSA, TÜV |
| decaSMDC050F/60 | 1,000 | 5,000 | 050F 60V | 4.32 (0.17) | 1.40 (0.55) | 3.61 (0.142) | UL, CSA, TÜV |
| SMD100F-2018 | 4,000 | 20,000 | A10F | 4.60 (0.18) | 1.50 (0.059) | 3.40 (0.134) | UL, CSA, TÜV |
| SMD150F-2018 | 4,000 | 20,000 | A15F | 4.60 (0.18) | 1.50 (0.059) | 3.40 (0.134) | UL, CSA, TÜV |
| SMD200F-2018 | 4,000 | 20,000 | A20F | 4.60 (0.18) | 1.50 (0.059) | 3.40 (0.134) | UL, CSA, TÜV |
| Size 2820 | | | | | | | |
| SMD030F | 2,000 | 10,000 | 030F | 3.10 (0.12) | 2.30 (0.09) | 5.10 (0.201) | UL, CSA, TÜV |
| SMDC030F | 4,000 | 20,000 | 030F | 5.30 (0.209) | 2.00 (0.079) | 4.60 (0.18) | - |
| SMD050F | 2,000 | 10,000 | 050F | 3.10 (0.12) | 2.30 (0.09) | 5.10 (0.201) | UL, CSA, TÜV |
| SMDC050F | 4,000 | 20,000 | 050F | 5.30 (0.209) | 2.00 (0.079) | 4.60 (0.18) | - |
| SMD075F | 2,000 | 10,000 | 075F | 3.10 (0.12) | 2.30 (0.09) | 5.10 (0.201) | UL, CSA, TÜV |
| SMDC075F | 4,000 | 20,000 | 075F | 5.30 (0.209) | 2.00 (0.079) | 4.60 (0.18) | - |
| SMD075F/60 | 2,000 | 10,000 | 756F | 3.10 (0.12) | 2.30 (0.09) | 5.10 (0.201) | UL, CSA, TÜV |
| SMD100F | 2,000 | 10,000 | 100F | 3.10 (0.12) | 2.30 (0.09) | 5.10 (0.201) | UL, CSA, TÜV |
| SMD100F/33 | 2,000 | 10,000 | 103F | 3.10 (0.12) | 2.30 (0.09) | 5.10 (0.201) | UL, CSA, TÜV |
| SMDH120 | 2,000 | 10,000 | H12 | 3.10 (0.12) | 2.30 (0.09) | 5.10 (0.201) | UL, CSA, TÜV |
| SMD125F | 2,000 | 10,000 | 125F | 3.10 (0.12) | 2.30 (0.09) | 5.10 (0.201) | UL, CSA, TÜV |
| SMDC125F/33 | 4,000 | 20,000 | 125F | 5.30 (0.209) | 2.00 (0.079) | 4.60 (0.18) | UL |
| SMD150F/33-2920 | 2,000 | 10,000 | S15F | 3.10 (0.12) | 2.30 (0.09) | 5.10 (0.201) | UL, CSA, TÜV |
| SMDC185F/33 | 4,000 | 20,000 | 185F 33V | 5.30 (0.209) | 2.00 (0.079) | 4.60 (0.18) | UL, CSA, TÜV |
| SMD200F/24-2920 | 2,000 | 10,000 | S20F | 3.10 (0.12) | 2.30 (0.09) | 5.10 (0.201) | UL, CSA, TÜV |
| SMD250F/15-2920 | 2,000 | 10,000 | S25F | 3.10 (0.12) | 2.30 (0.09) | 5.10 (0.201) | UL, CSA, TÜV |
| SMD260F | 2,000 | 10,000 | 260F | 3.10 (0.12) | 2.30 (0.09) | 5.10 (0.201) | UL, CSA, TÜV |
| SMD300F | 2,000 | 10,000 | 300F | 3.10 (0.12) | 2.30 (0.09) | 5.10 (0.201) | UL, CSA, TÜV |
| SMD300F/15 | 2,000 | 10,000 | 315F | 3.10 (0.12) | 2.30 (0.09) | 5.10 (0.201) | UL, CSA, TÜV |
| SMDC300F/24 | 4,000 | 20,000 | 300F 24V | 5.30 (0.209) | 2.00 (0.079) | 4.60 (0.18) | UL, CSA, TÜV |
| SMD310F/18 | 3,000 | 15,000 | 310F18V | 5.30 (0.209) | 2.00 (0.079) | 4.60 (0.18) | UL, CSA, TÜV |
| Size 3425 | | | | | | | |
| SMD150F | 1,500 | 7,500 | 150F | 4.60 (0.18) | 2.30 (0.09) | 6.10 (0.240) | UL, CSA, TÜV |
| SMD150F/33 | 1,500 | 7,500 | 153F | 4.60 (0.18) | 2.30 (0.09) | 6.10 (0.240) | UL, CSA, TÜV |
| SMDH160 | 1,500 | 7,500 | 160F | 4.60 (0.18) | 2.30 (0.09) | 6.10 (0.240) | UL, CSA, TÜV |
| SMD185F | 1,500 | 7,500 | 185F | 4.60 (0.18) | 2.30 (0.09) | 6.10 (0.240) | UL, CSA, TÜV |
| SMD200F | 1,500 | 7,500 | 200F | 4.60 (0.18) | 2.30 (0.09) | 6.10 (0.240) | UL, CSA, TÜV |
| SMD250F | 1,500 | 7,500 | 250F | 4.60 (0.18) | 2.30 (0.09) | 6.10 (0.240) | UL, CSA, TÜV |

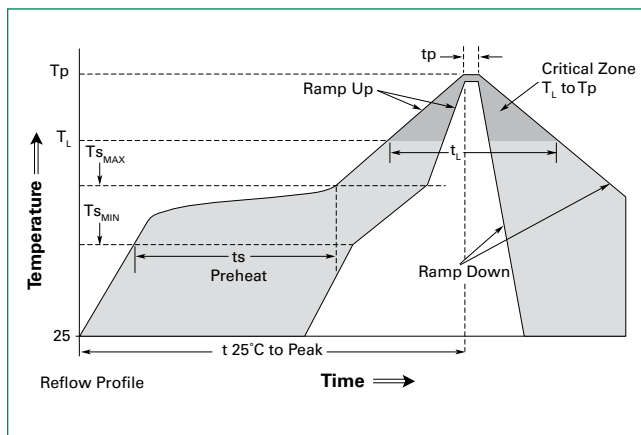
Terminal SMD and SMDC Series

Surface Mount

Solder Reflow Recommendations

| | |
|---------------------------------------------------------------------------|------------------|
| Profile Feature | Pb-Free Assembly |
| Average ramp up rate (T_{S_MAX} to T_p) | 3°C/s 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 s |
| Time maintained above: | |
| • Temperature (T_L) | 217°C |
| • Time (t_L) | 60-150 s |
| Peak/Classification temperature (T_p) | 260°C |
| Time within 5°C of actual peak temperature | |
| Time (t_p) | 30 s max |
| Ramp down rate | 3°C/s max |
| Time 25°C to peak temperature | 8 min max |

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



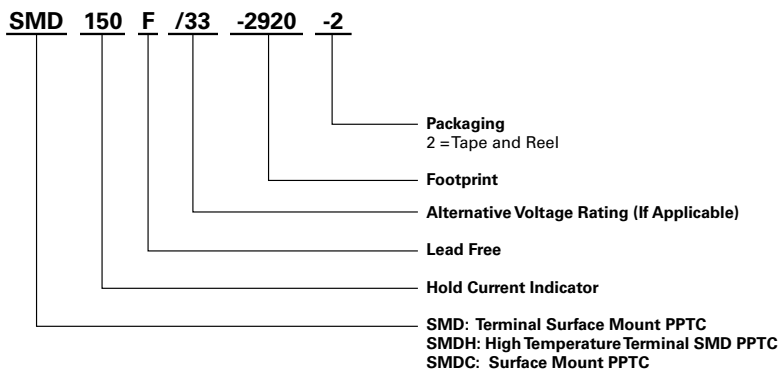
Solder Reflow

- Recommended reflow method: IR, hot air, nitrogen.
- Recommended maximum paste thickness: 0.25mm (0.010in)
- Devices can be cleaned using standard methods and aqueous solvents.
- Experience has shown the optimum conditions for forming acceptable solder fillets occur when a reasonable amount of solder paste is placed underneath each device's termination. As such, we request that customers comply with our recommended solder pad layouts.
- Customer should validate that the solder paste amount and reflow recommendations meet its application.
- We request that customer board layouts refrain from placing raised features (e.g. vias, nomenclature, traces, etc.) underneath PolySwitch devices. It is possible that raised features could negatively impact solderability performance of our devices.

Rework

- Standard industry practices. (Please also avoid direct contact to the device.)

Part Ordering Number System



Terminal SMD and SMDC Series

Surface Mount

Tape and Reel Specifications

| Description | 2018 Size EIA 481-2(mm) | | 2920 Size EIA 481-2(mm) | | | | 3425 Size EIA 481-2(mm) | |
|--------------------------|--------------------------------------------------------------|------------------|---------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------|-------------------------------------------------|----------------------------|----------------------------|-------------------------------------------------------------------|
| | SMD030F-2018 SMD100F-2018 SMD150F-2018 SMD200F-2018 | decaSMDC050F/60 | SMD030F SMD050F SMD075F SMD075F/60 SMD100F SMD100F/33 SMDH120 | SMD125F SMD150F/33-2920 SMD200F/24-2920 SMD250F/15-2920 SMD260F SMD300F SMD300F/15 | SMDC030F SMDC050F SMDC075F SMDC125F/33 | SMDC185F/33 SMDC300F/24 | SMDC310F/18 | SMD150F SMD150F/33 SMDH160 SMD185F SMD200F SMD250F |
| W | 16.0 ± 0.30 | 12.0 ± 0.30 | 16.0 ± 0.30 | 16.0 ± 0.30 | 16.0 ± 0.30 | 16.0 ± 0.30 | 16.0 ± 0.30 | 16.0 ± 0.30 |
| P₀ | 4.0 ± 0.10 | 4.0 ± 0.10 | 4.0 ± 0.10 | 4.0 ± 0.10 | 4.0 ± 0.10 | 4.0 ± 0.10 | 4.0 ± 0.10 | 4.0 ± 0.10 |
| P₁ | 8.0 ± 0.10 | 8.0 ± 0.10 | 8.0 ± 0.10 | 8.0 ± 0.10 | 8.0 ± 0.10 | 8.0 ± 0.10 | 8.0 ± 0.10 | 12.0 ± 0.10 |
| P₂ | 2.0 ± 0.10 | 2.0 ± 0.05 | 2.0 ± 0.10 | 2.0 ± 0.10 | 2.0 ± 0.10 | 2.0 ± 0.10 | 2.0 ± 0.10 | 2.0 ± 0.10 |
| A₀ | 5.11 ± 0.15 | 5.0 ± 0.1 | 5.6 ± 0.23 | 5.5 ± 0.1 | 5.35 ± 0.1 | 5.5 ± 0.1 | 6.9 ± 0.23 | |
| B₀ | 5.6 ± 0.23 | 5.4 ± 0.1 | 8.1 ± 0.15 | 7.9 ± 0.1 | 7.85 ± 0.1 | 8.0 ± 0.1 | 9.6 ± 0.15 | |
| B_{1 max} | 6.4 | 6,2 | 12.1 | 12,1 | 12,1 | 12,1 | 12.1 | |
| D₀ | 1.5 + 0.10/-0.00 | 1.55 ± 0.05 | 1.5 + 0.10/-0.00 | 1.5 + 0.10/-0.00 | 1.5 + 0.10/-0.00 | 1.5 + 0.10/-0.00 | 1.5 + 0.10/-0.00 | |
| F | 7.50 ± 0.10 | 5.50 ± 0.10 | 7.50 ± 0.10 | 7.50 ± 0.10 | 7.50 ± 0.10 | 7.50 ± 0.10 | 7.50 ± 0.10 | |
| E₁ | 1.75 ± 0.10 | 1.75 ± 0.10 | 1.75 ± 0.10 | 1.75 ± 0.10 | 1.75 ± 0.10 | 1.75 ± 0.10 | 1.75 ± 0.10 | |
| E_{2 min} | 14.25 | 10,25 | 14.25 | 14,25 | 14,25 | 14,25 | 14.25 | |
| T max | 0.4 | 0,4 | 0.4 | 0,35 | 0,35 | 0,35 | 0.4 | |
| T_{1 max} | 0.1 | 0,1 | 0.1 | 0,1 | 0,1 | 0,1 | 0.1 | |
| K₀ | 1.8 ± 0.15 | 1.7 ± 0.1 | 3.2 ± 0.15 | 0.9 ± 0.1 | 1.45 ± 0.1 | 2.0 ± 0.1 | 3.4 ± 0.15 | |
| A max | 330 | 330 | 330 | 330 | 330 | 330 | 330 | |
| N min | 50 | 50 | 50 | 50 | 50 | 50 | 50 | |
| W₁ | 16.4 + 2.0/-0.00 | 16.4 + 2.0/-0.00 | 16.4 + 2.0/-0.00 | 16.4 + 2.0/-0.00 | 16.4 + 2.0/-0.00 | 16.4 + 2.0/-0.00 | 16.4 + 2.0/-0.00 | |
| W_{2 max} | 22.4 | 22.4 | 22.4 | 22.4 | 22.4 | 22.4 | 22.4 | |

Terminal SMD and SMDC Series

Surface Mount

Tape and Reel Diagrams

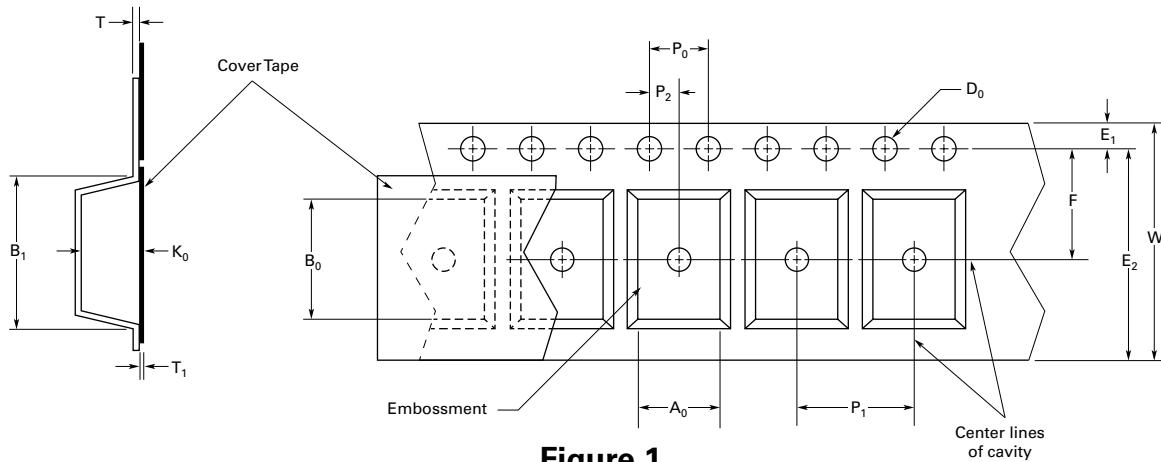


Figure 1

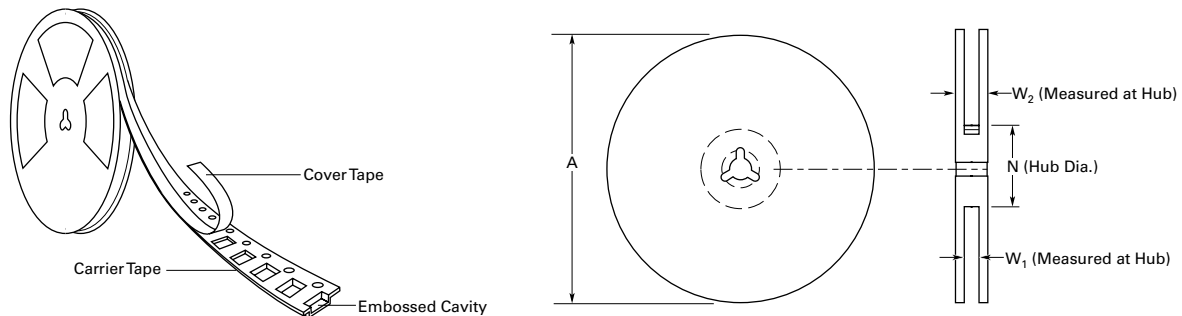


Figure 2

Warning

- Users should independently evaluate the suitability of and test each product selected for their own application.
- Operation beyond the maximum ratings or improper use may result in device damage and possible electrical arcing and flame.
- These devices are intended for protection against damage caused by occasional overcurrent or overtemperature fault conditions and should not be used when repeated fault conditions or prolonged trip events are anticipated.
- Contamination of the PPTC material with certain silicone-based oils or some aggressive solvents can adversely impact the performance of the devices.
- Device performance can be impacted negatively if devices are handled in a manner inconsistent with recommended electronic, thermal, and mechanical procedures for electronic components.
- PPTC devices are not recommended for installation in applications where the device is constrained such that its PTC properties are inhibited, for example in rigid potting materials or in rigid housings, which lack adequate clearance to accommodate device expansion.
- Operation in circuits with a large inductance can generate a circuit voltage (Ldi/dt) above the rated voltage of the device.

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