# Terminal SMD and SMDC Series

## Surface Mount




## 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 complaint, lead-free and halogen-free

## Applications

Mobile Electronics and Batteries

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

## Web Resources

Download ECAD models, order samples, and find technical recources at www.littelfuse.com

### Agency Approvals

| Agency | Agency File Number |
|---|---|
| | E74889 |
| | 78165 |
| | 50253253<br>72161793<br>72161779<br>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) |
| **Size 2018** | | | | | | | | | | |
| 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 |
| **Size 2920** | | | | | | | | | | |
| 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.



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Revised: VL 09/26/24

# Terminal SMD and SMDC Series
## Surface Mount

### Electrical Characteristics (Cont'd)

| Part Number | Ordering Part Number | $I_H$ (A) | $I_T$ (A) | $V_{MAX}$ ($V_{DC}$) | $I_{MAX}$ (A) | $P_{D\ MAX}$ (W) | Max Time-to-trip (A) | Max Time-to-trip (s) | $R_{MIN}$ (Ω) | $R_{1MAX}$ (Ω) |
|---|---|---|---|---|---|---|---|---|---|---|
| **Size 2920** | | | | | | | | | | |
| 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 |
| **Size 3425** | | | | | | | | | | |
| 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:**

$I_H$ : 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.

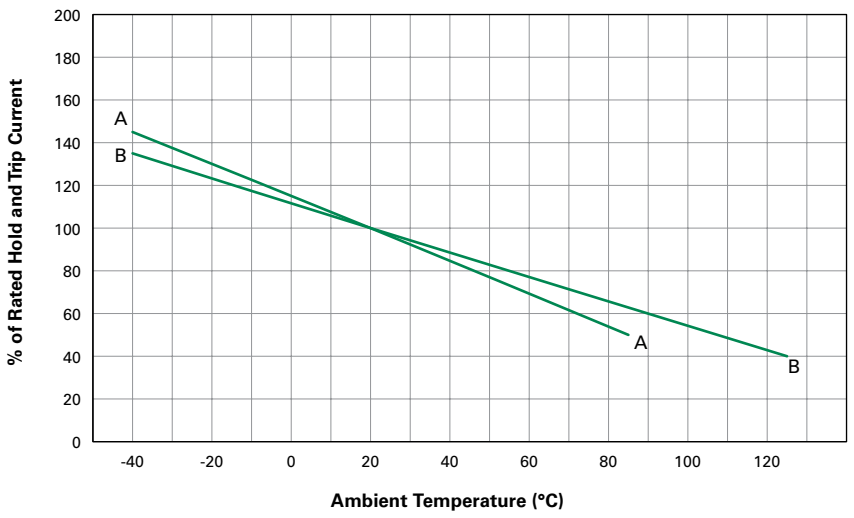
$P_D$ : Power dissipated from device when in the tripped state in 20°C still air.

$R_{MIN}$ : 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.

### Temperature Rerating Curve

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






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# Terminal SMD and SMDC Series
## Surface Mount

### Temperature Rerating

| Maximum Ambient Temperature | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Part Number | -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 | — |



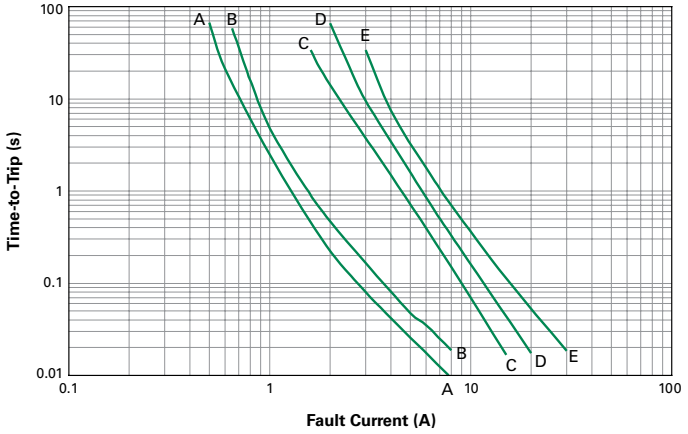
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# Terminal SMD and SMDC Series
## Surface Mount

### Typical Time-to-Trip Curves at 20°C

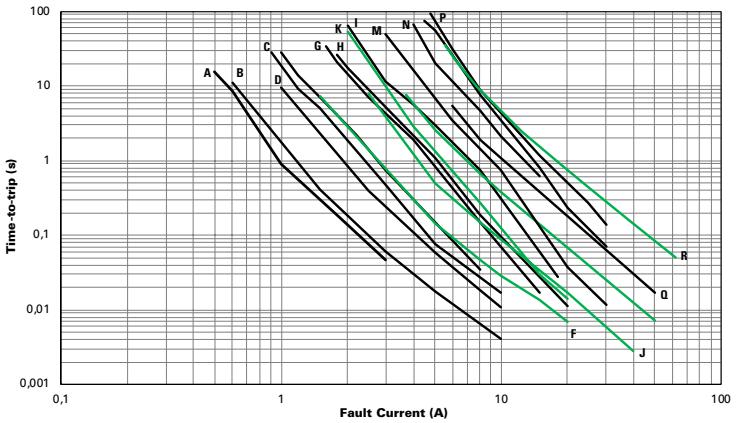
**Size 2018**

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



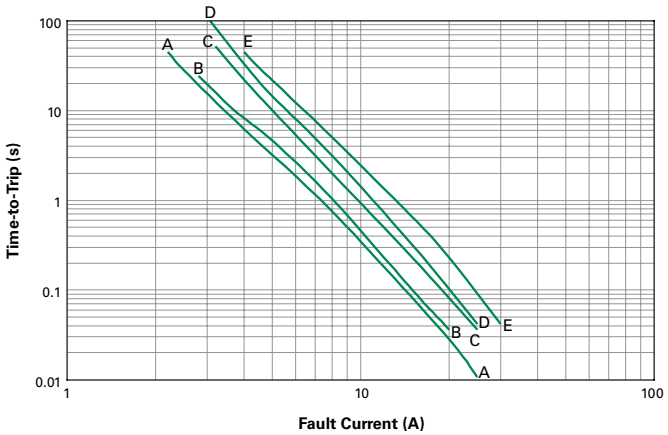

**Size 2920**

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 Rerating curve performance is affected by a number or variables, and these curves provided as guidance only. Customer must verify the performance in their application.


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# 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)<br>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<br>85°C, 1000 hrs | ±3% typ<br>±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)<br>125°C, -40°C (10 Times) | -33% typ<br>-33% typ |
| **Vibration** | MIL-STD-883C | per MIL-STD-883C | No Change |
| **Solvent Resistance** | PS300, Section 5.2.2 | Freon<br>Trichloroethane<br>Hydrocarbons | No Change<br>No Change<br>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.<br>Devices may not meet specified values if these storage conditions are exceeded. |



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# Terminal SMD and SMDC Series
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### Dimension Figures

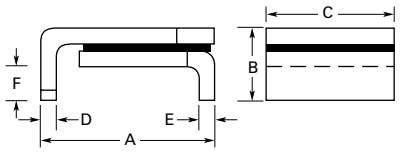



**Figure 1**

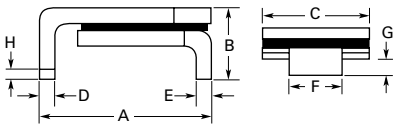



**Figure 2**

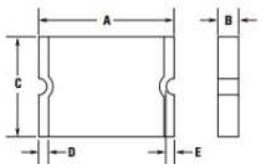



**Figure 3**

### 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 (0193) | 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 (0.101) | 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 (0.101) | 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 |



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# Terminal SMD and SMDC Series
## Surface Mount

### Dimension Figures

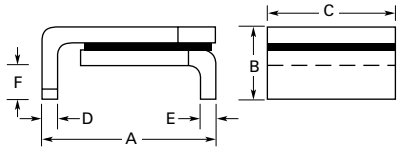



**Figure 1**

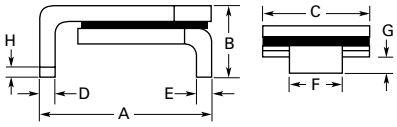



**Figure 2**

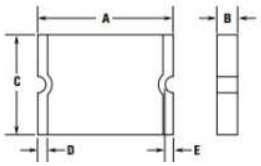



**Figure 3**

### Dimensions (Cont'd)

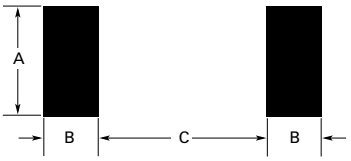
| Part Number | Dimensions in Millimeters (Inches) | | | | | | | | | | | | | | | Figure |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | A | | B | | C | | D | | E | | F | | G | | H | |
| | Min | Max | Min | Max | Min | Max | Min | Max | Min | Max | Min | Max | Min | Max | Min | |
| **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 |



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# 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 2920** | | | | | | | |
| 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) | UL |
| 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) | UL |
| 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) | UL |
| 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, TUV |
| 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 |



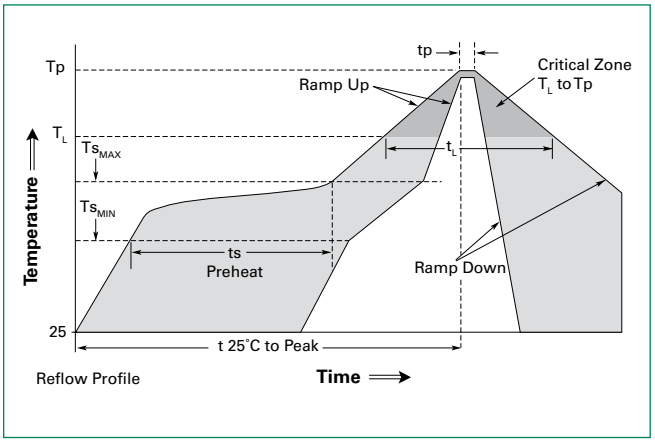
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# Terminal SMD and SMDC Series
## Surface Mount

### Solder Reflow Recommendations

| Profile Feature | Pb-Free Assembly |
|---|---|
| **Average ramp up rate ($Ts_{MAX}$ to Tp)** | 3°C/s max |
| **Preheat** | |
| • Temperature min ($Ts_{MIN}$) | 150°C |
| • Temperature max ($Ts_{MAX}$) | 200°C |
| • Time ($ts_{MIN}$ to $ts_{MAX}$) | 60-120 s |
| **Time maintained above:** | |
| • Temperature ($T_L$) | 217°C |
| • Time ($t_L$) | 60-150 s |
| **Peak/Classification temperature (Tp)** | 260°C |
| **Time within 5°C of actual peak temperature** | |
| Time (tp) | 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

**SMD 150 F /33 -2920 -2**

- **-2** — **Packaging**
  2 = Tape and Reel
- **-2920** — **Footprint**
- **/33** — **Alternative Voltage Rating (If Applicable)**
- **F** — **Lead Free**
- **150** — **Hold Current Indicator**
- **SMD** — **SMD: Terminal Surface Mount PPTC**
  **SMDH: High Temperature Terminal SMD PPTC**
  **SMDC: Surface Mount PPTC**



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# 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<br>SMD100F-2018<br>SMD150F-2018<br>SMD200F-2018 | decaSMDC050F/60 | SMD030F<br>SMD050F<br>SMD075F<br>SMD075F/60<br>SMD100F<br>SMD100F/33<br>SMDH120 | SMD125F<br>SMD150F/33-2920<br>SMD200F/24-2920<br>SMD250F/15-2920<br>SMD260F<br>SMD300F<br>SMD300F/15 | SMDC030F<br>SMDC050F<br>SMDC075F<br>SMDC125F/33 | SMDC185F/33<br>SMDC300F/24 | SMDC310F/18 | SMD150F<br>SMD150F/33<br>SMDH160<br>SMD185F<br>SMD200F<br>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 |
| **$P_0$** | 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 |
| **$P_1$** | 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 |
| **$P_2$** | 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 |
| **$A_0$** | 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 |
| **$B_0$** | 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 |
| **$D_0$** | 1.5 + 0.10/ -.00 | 1.55 ± 0.05 | 1.5 + 0.10/ -.00 | | 1.5 + 0.10/ -.00 | 1.5 + 0.10/ -.00 | 1.5 + 0.10/ -.00 | 1.5 + 0.10/ -.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 |
| **$E_1$** | 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 |
| **$K_0$** | 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 |
| **$W_1$** | 16.4 + 2.0/-.00 | 16.4 + 2.0/-.00 | 16.4 + 2.0/-.00 | | 16.4 + 2.0/-.00 | 16.4 + 2.0/-.00 | 16.4 + 2.0/-.00 | 16.4 + 2.0/-.00 |
| **$W_2$ max** | 22.4 | 22.4 | 22.4 | | 22.4 | 22.4 | 22.4 | 22.4 |



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# Terminal SMD and SMDC Series
## Surface Mount

### Tape and Reel Diagrams

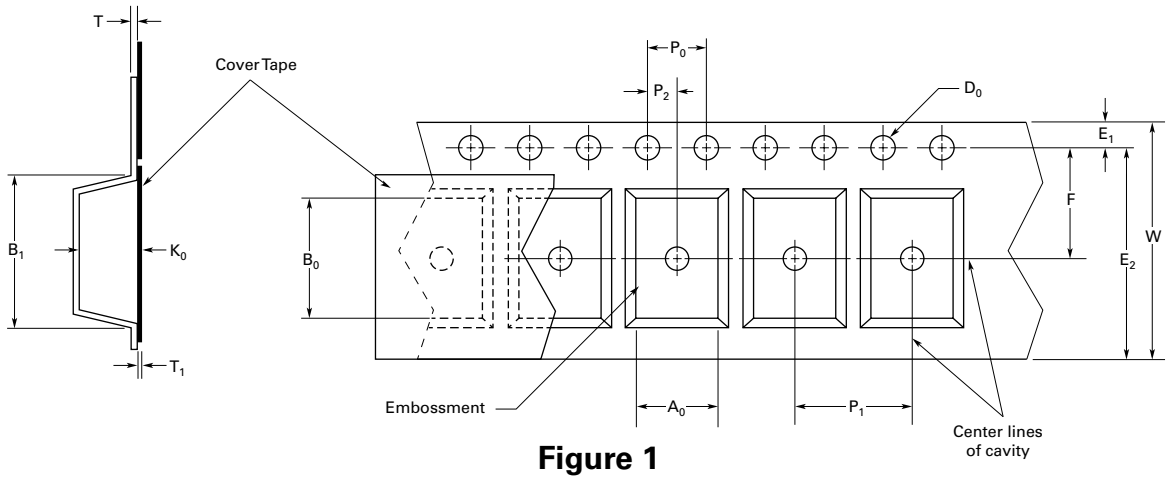



**Figure 1**

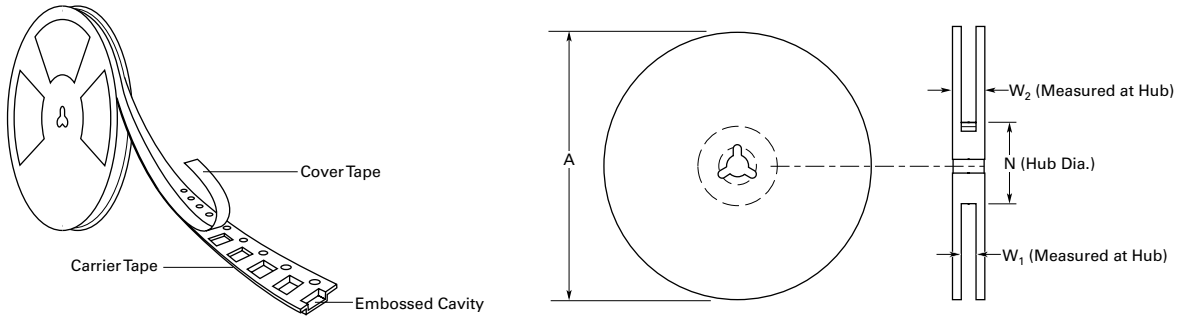



**Figure 2**

**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.

**Disclaimer Notice -** Information furnished is believed to be accurate and reliable. However, users should independently evaluate the suitability of and test each product selected for their own applications. Littelfuse products are not designed for, and may not be used in, all applications. Read complete Disclaimer Notice at www.littelfuse.com/disclaimer-electronics.



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Revised: VL 09/26/24