

»Performance Specification

| Model | Marking | V _{max} | I _{max} | I _{hold} | I _{trip} | P _d | Maximum | | Resistance | |
|-----------------|---------|------------------|------------------|-------------------|-------------------|----------------|--------------|-------|--------------------|-------------------|
| | | | | | | | Time To Trip | | R _{i min} | R _{1max} |
| | | | | | | | Current | Time | (Ω) | (Ω) |
| | | (V dc) | (A) | @25°C (A) | @25°C (A) | Typ. (W) | (A) | (Sec) | (Ω) | (Ω) |
| SMD0603-001/60N | X | 60 | 20 | 0.01 | 0.03 | 0.5 | 0.2 | 1.00 | 15.000 | 100.000 |
| SMD0603-002/60N | Y | 60 | 20 | 0.02 | 0.06 | 0.5 | 0.2 | 1.00 | 12.000 | 70.000 |
| SMD0603-002/09N | Y | 9 | 20 | 0.02 | 0.06 | 0.5 | 0.2 | 1.00 | 12.000 | 70.000 |
| SMD0603-003/30N | Z | 30 | 20 | 0.03 | 0.09 | 0.5 | 0.2 | 1.00 | 6.000 | 50.000 |
| SMD0603-003/09N | Z | 9 | 20 | 0.03 | 0.09 | 0.5 | 0.2 | 1.00 | 6.000 | 50.000 |
| SMD0603-004/15N | - | 15.0 | 20 | 0.04 | 0.12 | 0.5 | 0.20 | 1.00 | 4.000 | 40.000 |
| SMD0603-005/15N | - | 15.0 | 20 | 0.05 | 0.15 | 0.5 | 0.25 | 1.00 | 3.800 | 30.000 |
| SMD0603-005/30N | - | 30.0 | 20 | 0.05 | 0.15 | 0.5 | 0.25 | 1.00 | 3.800 | 30.000 |
| SMD0603-010/15N | 1 | 15.0 | 35 | 0.10 | 0.30 | 0.5 | 0.5 | 1.00 | 0.900 | 6.000 |
| SMD0603-010/09N | 1 | 9.0 | 35 | 0.10 | 0.30 | 0.5 | 0.5 | 1.00 | 0.900 | 6.000 |
| SMD0603-020/09N | 2 | 9.0 | 35 | 0.20 | 0.50 | 0.5 | 1.0 | 0.60 | 0.550 | 3.500 |
| SMD0603-020/16N | 2 | 16.0 | 35 | 0.20 | 0.50 | 0.5 | 1.0 | 0.60 | 0.550 | 3.500 |
| SMD0603-025/09N | 2 | 9.0 | 35 | 0.25 | 0.55 | 0.5 | 8.0 | 0.08 | 0.500 | 3.000 |
| SMD0603-025/16N | 2 | 16.0 | 35 | 0.25 | 0.55 | 0.5 | 8.0 | 0.08 | 0.500 | 3.000 |
| SMD0603-035/06N | 3 | 6.0 | 35 | 0.35 | 0.75 | 0.5 | 8.0 | 0.10 | 0.200 | 1.000 |
| SMD0603-040/06N | 5 | 6.0 | 35 | 0.40 | 0.80 | 0.5 | 8.0 | 0.10 | 0.150 | 0.900 |
| SMD0603-050/06N | 5 | 6.0 | 35 | 0.50 | 1.00 | 0.5 | 8.0 | 0.10 | 0.100 | 0.800 |
| SMD0603-050/12N | 5 | 12.0 | 35 | 0.50 | 1.00 | 0.5 | 8.0 | 0.10 | 0.100 | 0.800 |
| SMD0603-060/06N | 7 | 6.0 | 35 | 0.60 | 1.20 | 0.5 | 8.0 | 0.10 | 0.080 | 0.600 |
| SMD0603-065/06N | 7 | 6.0 | 35 | 0.65 | 1.30 | 0.5 | 8.0 | 0.10 | 0.070 | 0.550 |
| SMD0603-075/06N | 7 | 6.0 | 35 | 0.75 | 1.40 | 0.5 | 8.0 | 0.10 | 0.060 | 0.450 |
| SMD0603-100/06N | 0 | 6.0 | 35 | 1.00 | 2.00 | 0.5 | 8.0 | 0.10 | 0.050 | 0.300 |

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

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

I_{hold} = Hold Current. Maximum current device will not trip in 25°C still air.

I_{trip} = Trip Current. Minimum current at which the device will always trip in 25°C still air.

P_d = Power dissipation when device is in the tripped state in 25°C still air environment at rated voltage.

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

R_{1max} = Maximum device resistance is measured one hour post reflow.

CAUTION : Operation beyond the specified ratings may result in damage and possible arcing and flame.

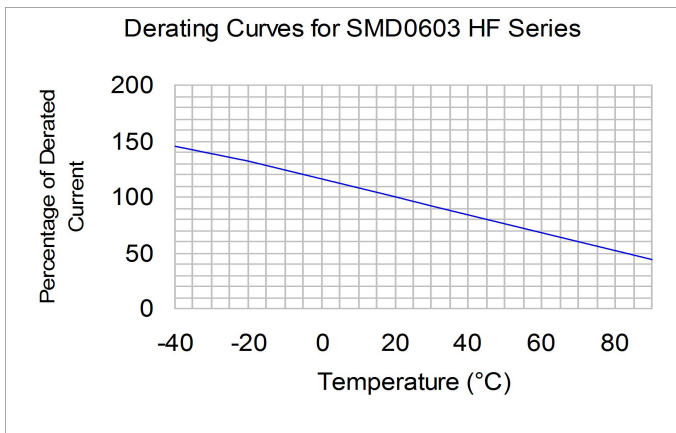
»Environmental Specifications

| Test | Conditions | Resistance change |
|--|-----------------------------|-------------------|
| Passive aging | +85°C, 1000 hrs. | ±5% typical |
| Humidity aging | +85°C, 85% R.H. , 168 hours | ±5% typical |
| Thermal shock | +85°C to -40°C, 20 times | ±33% typical |
| Resistance to solvent | MIL-STD-202, Method 215 | No change |
| Vibration | MIL-STD-202, Method 201 | No change |
| Ambient operating conditions : - 40 °C to +85 °C | | |
| Maximum surface temperature of the device in the tripped state is 125 °C | | |

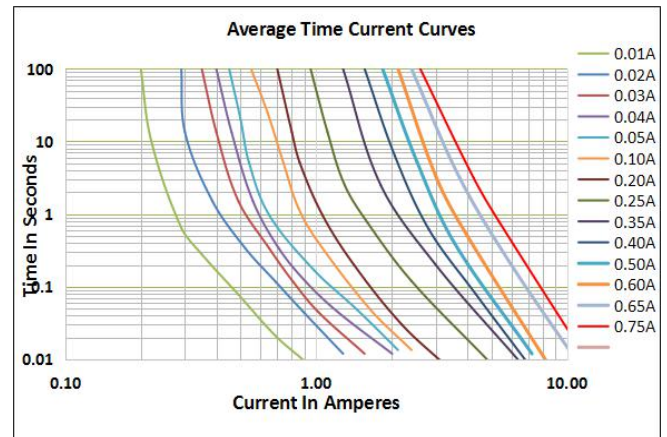
»Thermal Derating Chart Recommended Hold Current(A) at Ambient Temperature(°C)

| Model | Ambient Operation Temperature | | | | | | | | |
|---------------|-------------------------------|-------|-------|-------|-------|-------|-------|-------|--------|
| | -40°C | -20°C | 0°C | 25°C | 40°C | 50°C | 60°C | 70°C | 85°C |
| SMD0603-001N | 0.016 | 0.014 | 0.012 | 0.010 | 0.008 | 0.007 | 0.006 | 0.005 | 0.0035 |
| SMD0603-002N | 0.031 | 0.027 | 0.024 | 0.020 | 0.016 | 0.014 | 0.012 | 0.011 | 0.007 |
| SMD0603-003N | 0.047 | 0.041 | 0.036 | 0.030 | 0.024 | 0.021 | 0.018 | 0.016 | 0.0108 |
| SMD0603-004N | 0.052 | 0.048 | 0.044 | 0.040 | 0.032 | 0.028 | 0.024 | 0.020 | 0.012 |
| SMD0603-005N | 0.065 | 0.060 | 0.055 | 0.050 | 0.040 | 0.035 | 0.031 | 0.025 | 0.015 |
| SMD0603-010N | 0.13 | 0.12 | 0.11 | 0.10 | 0.08 | 0.07 | 0.06 | 0.05 | 0.03 |
| SMD0603--020N | 0.27 | 0.25 | 0.23 | 0.20 | 0.17 | 0.14 | 0.12 | 0.10 | 0.07 |
| SMD0603-025N | 0.32 | 0.29 | 0.27 | 0.25 | 0.21 | 0.18 | 0.16 | 0.14 | 0.10 |
| SMD0603-035N | 0.47 | 0.41 | 0.38 | 0.35 | 0.29 | 0.26 | 0.24 | 0.20 | 0.14 |
| SMD0603-040N | 0.54 | 0.47 | 0.43 | 0.40 | 0.33 | 0.29 | 0.27 | 0.22 | 0.16 |
| SMD0603-050N | 0.67 | 0.59 | 0.54 | 0.50 | 0.41 | 0.37 | 0.34 | 0.29 | 0.20 |
| SMD0603-060N | 0.81 | 0.70 | 0.651 | 0.60 | 0.49 | 0.44 | 0.41 | 0.34 | 0.24 |
| SMD0603-065N | 0.87 | 0.76 | 0.71 | 0.65 | 0.54 | 0.48 | 0.44 | 0.37 | 0.26 |
| SMD0603-075N | 0.98 | 0.85 | 0.81 | 0.75 | 0.60 | 0.54 | 0.44 | 0.40 | 0.31 |
| SMD0603-100N | 1.19 | 1.13 | 1.08 | 1.00 | 0.80 | 0.72 | 0.59 | 0.54 | 0.43 |

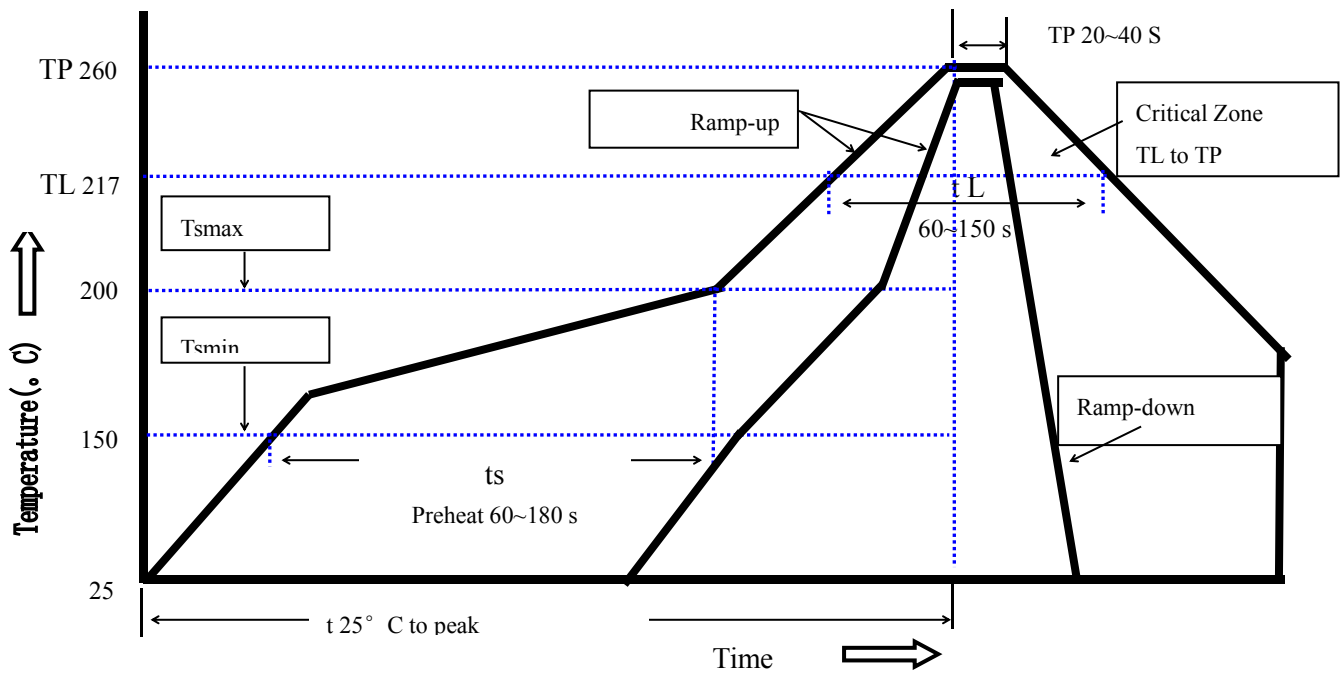
»Thermal Derating Curve



»Average Time-Current Curve



»Soldering Parameters



| Profile Feature | Pb-Free Assembly |
|-------------------------------------|--------------------|
| Average Ramp-Up Rate(Ts max to T p) | 3°C/second max. |
| Preheat | |
| -Temperature Min(Ts min) | 150°C |
| -Temperature Max(Ts max) | 200°C |
| -Time(Ts min to Ts max) | 60~180 seconds |
| Time maintained above: | |
| -Temperature(TL) | 217°C |
| -Time(tL) | 60~150 seconds |
| Peak Temperature(Tp) | 260°C |
| Ramp-Down Rate | 6°C/second max. |
| Time 25°C to Peak Temperature | 8 minutes max |
| Storage Condition | 0°C~35°C,30%-60%RH |

Recommended reflow methods: IR, vapor phase oven, hot air oven, N2 environment for lead-free

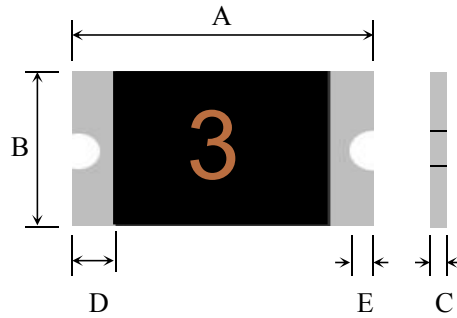
Recommended maximum paste thickness is 0.25mm

Devices can be cleaned using standard industry methods and solvents.

Note 1:All temperature refer to topside of the package, measured on the package body surface.

Note 2: If reflow temperatures exceed the recommended profile, devices may not meet the performance requirements

»Physical Dimensions(mm.)



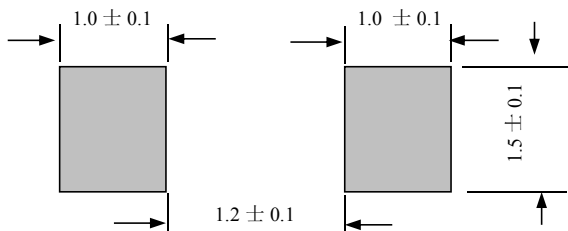
| 型號 | A | | B | | C | | D | E |
|-----------------|------|------|------|------|------|------|------|------|
| | Min. | Max. | Min. | Max. | Min. | Max. | Min. | Min. |
| SMD0603-001N | 1.45 | 1.85 | 0.65 | 1.05 | 0.40 | 1.00 | 0.15 | 0.10 |
| SMD0603-002N | 1.45 | 1.85 | 0.65 | 1.05 | 0.35 | 0.75 | 0.15 | 0.10 |
| SMD0603-003N | 1.45 | 1.85 | 0.65 | 1.05 | 0.35 | 0.75 | 0.15 | 0.10 |
| SMD0603-004N | 1.45 | 1.85 | 0.65 | 1.05 | 0.40 | 1.00 | 0.15 | 0.10 |
| SMD0603-005N | 1.45 | 1.85 | 0.65 | 1.05 | 0.35 | 0.75 | 0.15 | 0.10 |
| SMD0603-010N | 1.45 | 1.85 | 0.65 | 1.05 | 0.35 | 0.75 | 0.15 | 0.10 |
| SMD0603-020N | 1.45 | 1.85 | 0.65 | 1.05 | 0.30 | 0.70 | 0.15 | 0.10 |
| SMD0603-020/16N | 1.45 | 1.85 | 0.65 | 1.05 | 0.40 | 1.00 | 0.15 | 0.10 |
| SMD0603-025N | 1.45 | 1.85 | 0.65 | 1.05 | 0.30 | 0.70 | 0.15 | 0.10 |
| SMD0603-025/16N | 1.45 | 1.85 | 0.65 | 1.05 | 0.40 | 1.00 | 0.15 | 0.10 |
| SMD0603-035N | 1.45 | 1.85 | 0.65 | 1.05 | 0.35 | 0.90 | 0.15 | 0.10 |
| SMD0603-040N | 1.45 | 1.85 | 0.65 | 1.05 | 0.40 | 0.90 | 0.15 | 0.10 |
| SMD0603-050N | 1.45 | 1.85 | 0.65 | 1.05 | 0.55 | 1.15 | 0.15 | 0.10 |
| SMD0603-050/15N | 1.45 | 1.85 | 0.65 | 1.05 | 0.55 | 1.15 | 0.15 | 0.10 |
| SMD0603-060N | 1.45 | 1.85 | 0.65 | 1.05 | 0.55 | 1.15 | 0.15 | 0.10 |
| SMD0603-065N | 1.45 | 1.85 | 0.65 | 1.05 | 0.55 | 1.15 | 0.15 | 0.10 |
| SMD0603-075N | 1.45 | 1.85 | 0.65 | 1.05 | 0.55 | 1.15 | 0.15 | 0.10 |
| SMD0603-100N | 1.45 | 1.85 | 0.65 | 1.05 | 0.55 | 1.15 | 0.15 | 0.10 |

Termination Pad Characteristics

Terminal pad materials: Tin-plated Nickel-Copper

Terminal pad solder ability: Meets EIA specification RS186-9E and ANSI/J-STD-002 Category 3.

»Recommended Pad Layout (mm.)



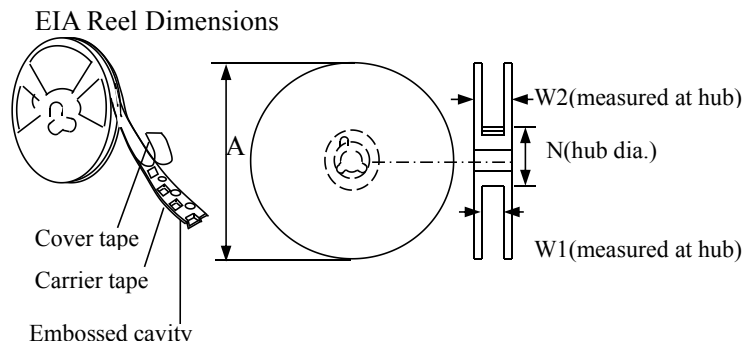
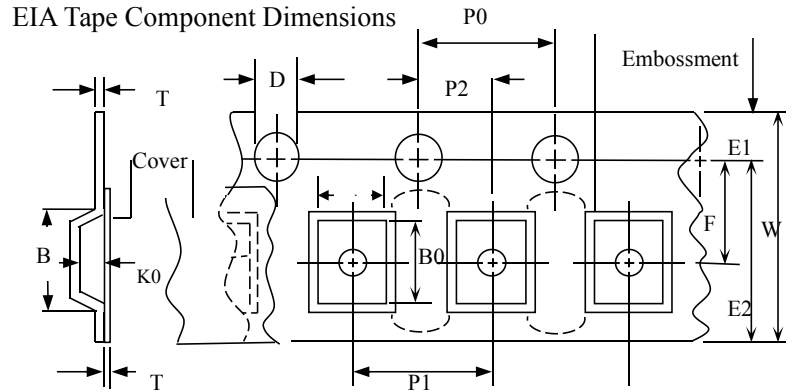
»Packaging Quantity

| Part Number | Quantity |
|----------------|----------------|
| SMD0603 Series | 4,000 pcs/reel |

Tape & reel packaging per EIA481-1

»Tape And Reel Specifications (mm)

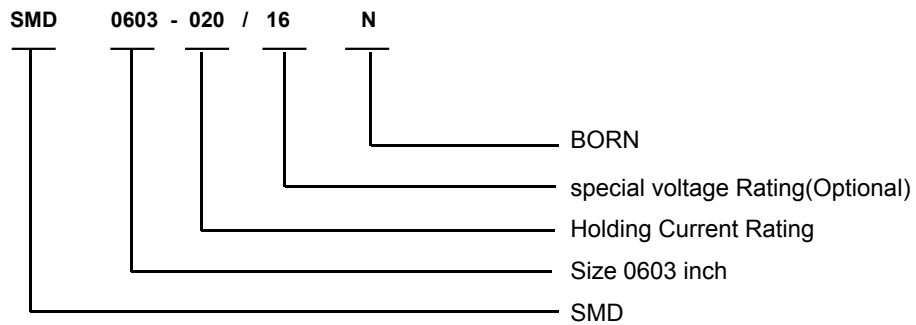
| Governing Specifications | | EIA 481-1 |
|--------------------------|--|-----------------|
| W | | 8.0 ± 0.2 |
| P ₀ | | 4.0 ± 0.10 |
| P ₁ | | 4.0 ± 0.10 |
| P ₂ | | 2.0 ± 0.05 |
| A ₀ | | 1.05 ± 0.10 |
| B ₀ | | 1.85 ± 0.10 |
| D ₀ | | 1.55 + 0.05 |
| F | | 3.5 ± 0.05 |
| E ₁ | | 1.75 ± 0.10 |
| E ₂ min. | | 6.25 |
| T | | 0.20 |
| T ₁ max. | | 0.1 |
| K ₀ | | 0.75/0.95 ± 0.1 |
| Leader min. | | 390 |
| Trailer min. | | 160 |
| Reel Dimensions | | |
| A max. | | 178 |
| N min. | | 60 |
| W ₁ | | 9.0 ± 0.5 |
| W ₂ | | 12.0 ± 0.05 |
| W | | 8.0 ± 0.2 |



Storage And Handling

- Storage conditions: 35°C max,30%-60%R.H.
- Devices may not meet specified performance
- if storage conditions are exceeded.

»Part Number System



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