# SPECIFICATION FOR APPROVAL

## INDEX



RoHS

# Surface Mountable PTC Resettable Fuse: SMD Series

## 1. Summary

(a) RoHS Compliant & Halogen Free
(b) Applications: All high-density boards
(c) Product Features: Small surface mountable, Solid state, Faster time to trip than standard SMD devices, Lower resistance than standard SMD devices
(d) Temperature Range : -40℃ to 85℃

## 2. Agency Recognition

UL: File No. E211981
C-UL: File No. E211981
TÜV: File No. R50004084, R50090556

## 3. Electrical Characteristics (23℃)

| Part Number | Hold Current | Trip Current | Rated Voltage | Max Current | Typical Power | Max Time to Trip | | Resistance | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Current | Time | Rmin | R1max |
| | $I_H$, A | $I_T$, A | $V_{max}$, $V_{DC}$ | $I_{max}$, A | Pd, W | Amp | Sec | Ω | Ω |
| 2920SMD030FA | 0.30 | 0.60 | 60 | 10 | 1.5 | 1.5 | 3.0 | 1.000 | 4.800 |
| 2920SMD050FA | 0.50 | 1.00 | 60 | 10 | 1.5 | 2.5 | 4.0 | 0.300 | 1.400 |
| 2920SMD075FA | 0.75 | 1.50 | 33 | 40 | 1.5 | 8.0 | 0.3 | 0.180 | 1.000 |
| 2920SMD075-60FA | 0.75 | 1.50 | 60 | 10 | 1.5 | 8.0 | 0.3 | 0.180 | 1.000 |
| 2920SMD100FA | 1.10 | 2.20 | 33 | 40 | 1.5 | 8.0 | 0.5 | 0.090 | 0.410 |
| 2920SMD125FA | 1.25 | 2.50 | 33 | 40 | 1.5 | 8.0 | 2.0 | 0.050 | 0.250 |
| 2920SMD150FA | 1.50 | 3.00 | 33 | 40 | 1.5 | 8.0 | 2.0 | 0.050 | 0.230 |
| 2920SMD185FA | 1.85 | 3.70 | 33 | 40 | 1.5 | 8.0 | 2.5 | 0.040 | 0.150 |
| 2920SMD200FA | 2.00 | 4.00 | 16 | 40 | 1.5 | 8.0 | 4.5 | 0.035 | 0.120 |
| 2920SMD200-24FA | 2.00 | 4.00 | 24 | 40 | 1.5 | 8.0 | 5.0 | 0.035 | 0.120 |
| 2920SMD250FA | 2.50 | 5.00 | 16 | 40 | 1.5 | 8.0 | 16.0 | 0.025 | 0.085 |
| 2920SMD260FA | 2.60 | 5.20 | 6 | 40 | 1.5 | 8.0 | 20.0 | 0.020 | 0.075 |
| 2920SMD300FA | 3.00 | 5.20 | 6 | 40 | 1.5 | 8.0 | 25.0 | 0.010 | 0.048 |
| 1812SMD010FA | 0.10 | 0.30 | 60 | 10 | 0.8 | 8.0 | 0.020 | 1.600 | 15.00 |
| 1812SMD014FA | 0.14 | 0.30 | 60 | 10 | 0.8 | 8.0 | 0.008 | 1.200 | 6.500 |
| 1812SMD020FA | 0.20 | 0.40 | 30 | 10 | 0.8 | 8.0 | 0.020 | 0.800 | 5.000 |
| 1812SMD020-60FA | 0.20 | 0.40 | 60 | 10 | 0.8 | 8.0 | 0.020 | 0.800 | 5.000 |
| 1812SMD035FA | 0.35 | 0.70 | 16 | 40 | 0.8 | 8.0 | 0.100 | 0.320 | 1.500 |
| 1812SMD050FA | 0.50 | 1.00 | 16 | 40 | 0.8 | 8.0 | 0.150 | 0.150 | 1.000 |
| 1812SMD050-30FA | 0.50 | 1.00 | 30 | 100 | 0.8 | 8.0 | 0.150 | 0.150 | 1.000 |
| 1812SMD075FA | 0.75 | 1.50 | 16 | 40 | 0.8 | 8.0 | 0.200 | 0.110 | 0.450 |
| 1812SMD075-24FA | 0.75 | 1.50 | 24 | 40 | 1.0 | 8.0 | 0.200 | 0.110 | 0.290 |
| 1812SMD075-33FA | 0.75 | 1.50 | 33 | 40 | 1.0 | 8.0 | 0.200 | 0.110 | 0.400 |
| 1812SMD110FA | 1.10 | 2.20 | 8 | 100 | 0.8 | 8.0 | 0.300 | 0.040 | 0.210 |
| 1812SMD110-16FA | 1.10 | 2.20 | 16 | 100 | 0.8 | 8.0 | 0.500 | 0.040 | 0.180 |
| 1812SMD110-24FA | 1.10 | 2.20 | 24 | 100 | 1.0 | 8.0 | 0.500 | 0.060 | 0.200 |
| 1812SMD125FA | 1.25 | 2.50 | 6 | 40 | 0.8 | 8.0 | 0.400 | 0.050 | 0.140 |
| 1812SMD150FA | 1.50 | 3.00 | 8 | 100 | 0.8 | 8.0 | 0.500 | 0.040 | 0.110 |
| 1812SMD150-12FA | 1.50 | 3.00 | 12 | 100 | 1.0 | 8.0 | 0.500 | 0.040 | 0.110 |
| 1812SMD150-24FA | 1.50 | 3.00 | 24 | 100 | 1.0 | 8.0 | 1.500 | 0.040 | 0.120 |
| 1812SMD160FA | 1.60 | 3.20 | 8 | 100 | 0.8 | 8.0 | 0.500 | 0.030 | 0.100 |
| 1812SMD160-12FA | 1.60 | 3.20 | 12 | 100 | 1.0 | 8.0 | 1.000 | 0.030 | 0.100 |
| 1812SMD160-16FA | 1.60 | 3.20 | 16 | 100 | 1.0 | 8.0 | 1.000 | 0.030 | 0.100 |
| 1812SMD200FA | 2.00 | 3.50 | 8 | 100 | 1.0 | 8.0 | 2.000 | 0.020 | 0.070 |
| 1812SMD260FA | 2.60 | 5.00 | 6 | 100 | 1.0 | 8.0 | 2.500 | 0.015 | 0.047 |

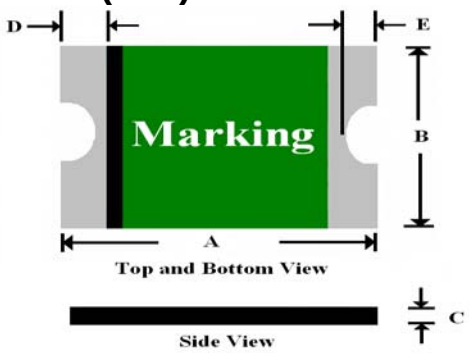
RoHS

| Part Number | Hold Current | Trip Current | Rated Voltage | Max Current | Typical Power | Max Time to Trip | | Resistance | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Current | Time | Rmin | R1max |
| | $I_H$, A | $I_T$, A | $V_{max}$, $V_{DC}$ | $I_{max}$, A | Pd, W | Amp | Sec | Ω | Ω |
| 1812SMD260-13FA | 2.60 | 5.00 | 13.2 | 100 | 1.3 | 8.0 | 5.000 | 0.015 | 0.050 |
| 1812SMD260-16FA | 2.60 | 5.00 | 16 | 100 | 1.3 | 8.0 | 5.000 | 0.015 | 0.050 |
| 1812SMD300FA | 3.00 | 5.00 | 6 | 100 | 1.0 | 8.0 | 4.000 | 0.012 | 0.040 |
| 1210SMD005FA | 0.05 | 0.15 | 60 | 10 | 0.60 | 0.25 | 3.00 | 3.600 | 50.000 |
| 1210SMD010FA | 0.10 | 0.25 | 60 | 10 | 0.60 | 0.50 | 1.50 | 1.600 | 15.000 |
| 1210SMD020FA | 0.20 | 0.40 | 30 | 10 | 0.60 | 8.00 | 0.02 | 0.800 | 5.000 |
| 1210SMD035FA | 0.35 | 0.70 | 16 | 40 | 0.60 | 8.00 | 0.20 | 0.320 | 1.300 |
| 1210SMD050FA | 0.50 | 1.00 | 16 | 40 | 0.60 | 8.00 | 0.10 | 0.250 | 0.900 |
| 1210SMD075FA | 0.75 | 1.50 | 8 | 40 | 0.60 | 8.00 | 0.10 | 0.130 | 0.400 |
| 1210SMD075-24FA | 0.75 | 1.50 | 24 | 40 | 0.60 | 8.00 | 0.10 | 0.130 | 0.400 |
| 1210SMD110FA | 1.10 | 2.20 | 6 | 100 | 0.80 | 8.00 | 0.30 | 0.060 | 0.210 |
| 1210SMD150FA | 1.50 | 3.00 | 6 | 100 | 0.80 | 8.00 | 0.50 | 0.040 | 0.110 |
| 1210SMD175FA | 1.75 | 4.00 | 6 | 100 | 0.80 | 8.00 | 0.60 | 0.020 | 0.080 |
| 1210SMD200FA | 2.00 | 4.00 | 6 | 100 | 0.80 | 8.00 | 1.00 | 0.015 | 0.070 |
| 1206SMD005FA | 0.05 | 0.15 | 60 | 10 | 0.4 | 0.25 | 1.50 | 3.600 | 50.000 |
| 1206SMD010FA | 0.10 | 0.25 | 60 | 10 | 0.4 | 0.50 | 1.00 | 1.600 | 15.000 |
| 1206SMD012FA | 0.12 | 0.39 | 48 | 10 | 0.6 | 1.00 | 0.20 | 1.400 | 6.500 |
| 1206SMD016FA | 0.16 | 0.45 | 48 | 10 | 0.6 | 1.00 | 0.30 | 1.100 | 5.000 |
| 1206SMD020FA | 0.20 | 0.40 | 30 | 10 | 0.4 | 8.00 | 0.10 | 0.600 | 2.500 |
| 1206SMD025FA | 0.25 | 0.50 | 16 | 40 | 0.6 | 8.00 | 0.08 | 0.550 | 2.300 |
| 1206SMD025-24FA | 0.25 | 0.50 | 24 | 40 | 0.6 | 8.0 | 0.08 | 0.550 | 2.300 |
| 1206SMD035FA | 0.35 | 0.75 | 16 | 40 | 0.4 | 8.00 | 0.10 | 0.300 | 1.200 |
| 1206SMD035-30FA | 0.35 | 0.75 | 30 | 40 | 0.6 | 8.00 | 0.10 | 0.300 | 1.200 |
| 1206SMD050FA | 0.50 | 1.00 | 8 | 40 | 0.4 | 8.00 | 0.10 | 0.150 | 0.700 |
| 1206SMD050-24FA | 0.50 | 1.00 | 24 | 100 | 0.6 | 8.00 | 0.10 | 0.150 | 0.750 |
| 1206SMD075FA | 0.75 | 1.50 | 6 | 100 | 0.6 | 8.00 | 0.20 | 0.090 | 0.290 |
| 1206SMD075-16FA | 0.75 | 1.50 | 16 | 100 | 0.6 | 8.00 | 0.20 | 0.090 | 0.290 |
| 1206SMD100FA | 1.00 | 1.80 | 6 | 100 | 0.6 | 8.00 | 0.30 | 0.055 | 0.210 |
| 1206SMD110FA | 1.10 | 2.20 | 6 | 100 | 0.8 | 8.00 | 0.30 | 0.040 | 0.180 |
| 1206SMD150FA | 1.50 | 3.00 | 6 | 100 | 0.8 | 8.00 | 1.00 | 0.040 | 0.120 |
| 1206SMD200FA | 2.00 | 3.50 | 6 | 100 | 0.8 | 8.00 | 1.50 | 0.018 | 0.080 |
| 0805SMD010FA | 0.10 | 0.30 | 15 | 100 | 0.5 | 0.50 | 1.50 | 0.700 | 6.000 |
| 0805SMD020FA | 0.20 | 0.50 | 9 | 100 | 0.5 | 8.00 | 0.02 | 0.400 | 3.500 |
| 0805SMD035FA | 0.35 | 0.75 | 6 | 100 | 0.5 | 8.00 | 0.10 | 0.250 | 1.200 |
| 0805SMD050FA | 0.50 | 1.00 | 6 | 100 | 0.5 | 8.00 | 0.10 | 0.150 | 0.850 |
| 0805SMD075FA | 0.75 | 1.50 | 6 | 40 | 0.6 | 8.00 | 0.20 | 0.090 | 0.350 |
| 0805SMD100FA | 1.00 | 1.95 | 6 | 40 | 0.6 | 8.00 | 0.30 | 0.060 | 0.210 |

$I_H$=Hold current-maximum current at which the device will not trip at 23℃ still air.
$I_T$=Trip current-minimum current at which the device will always trip at 23℃ still air.
$V_{MAX}$=Maximum voltage device can withstand without damage at it rated current.($I_{MAX}$)
$I_{MAX}$= Maximum fault current device can withstand without damage at rated voltage ($V_{MAX}$).
Pd=Typical power dissipated-type amount of power dissipated by the device when in the tripped state in 23℃ still air environment.
$R_{MIN}$=Minimum device resistance at 23℃ prior to tripping.
$R1_{MAX}$=Maximum device resistance at 23℃ measured 1 hour after tripping or reflow soldering of 260℃ for 20 seconds.
Termination pad characteristics
Termination pad materials: Pure Tin

RoHS

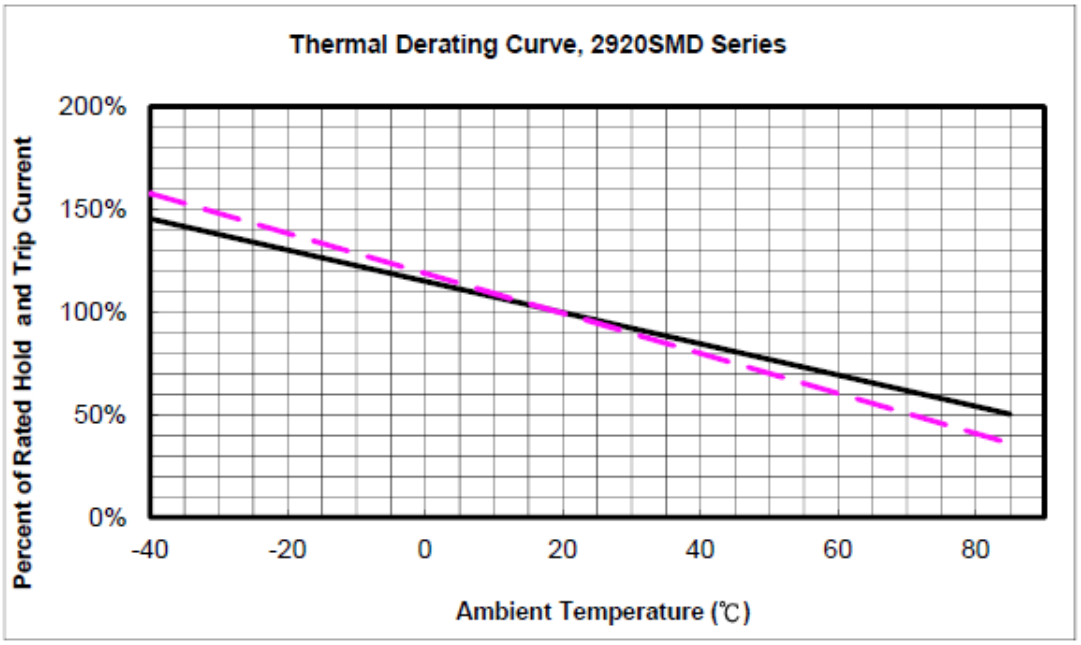
## 4. SMD Product Dimensions (mm)




| Part Number | A | | B | | C | | D | | E | |
|---|---|---|---|---|---|---|---|---|---|---|
| | min | max | min | max | min | max | min | max | min | max |
| 2920SMD030FA | 6.73 | 7.98 | 4.80 | 5.44 | 0.60 | 1.15 | 0.50 | 1.20 | 0.50 | 0.90 |
| 2920SMD050FA | 6.73 | 7.98 | 4.80 | 5.44 | 0.60 | 1.15 | 0.50 | 1.20 | 0.50 | 0.90 |
| 2920SMD075FA | 6.73 | 7.98 | 4.80 | 5.44 | 0.40 | 1.15 | 0.50 | 1.20 | 0.50 | 0.90 |
| 2920SMD075-60FA | 6.73 | 7.98 | 4.80 | 5.44 | 0.60 | 1.15 | 0.50 | 1.20 | 0.50 | 0.90 |
| 2920SMD100FA | 6.73 | 7.98 | 4.80 | 5.44 | 0.40 | 1.00 | 0.50 | 1.20 | 0.50 | 0.90 |
| 2920SMD125FA | 6.73 | 7.98 | 4.80 | 5.44 | 0.40 | 0.90 | 0.50 | 1.20 | 0.50 | 0.90 |
| 2920SMD150FA | 6.73 | 7.98 | 4.80 | 5.44 | 0.40 | 0.90 | 0.50 | 1.20 | 0.50 | 0.90 |
| 2920SMD185FA | 6.73 | 7.98 | 4.80 | 5.44 | 0.30 | 0.90 | 0.50 | 1.20 | 0.50 | 0.90 |
| 2920SMD200FA | 6.73 | 7.98 | 4.80 | 5.44 | 0.30 | 0.90 | 0.50 | 1.20 | 0.50 | 0.90 |
| 2920SMD200-24FA | 6.73 | 7.98 | 4.80 | 5.44 | 0.20 | 0.80 | 0.50 | 1.20 | 0.50 | 0.90 |
| 2920SMD250FA | 6.73 | 7.98 | 4.80 | 5.44 | 0.30 | 0.90 | 0.50 | 1.20 | 0.50 | 0.90 |
| 2920SMD260FA | 6.73 | 7.98 | 4.80 | 5.44 | 0.30 | 0.90 | 0.50 | 1.20 | 0.50 | 0.90 |
| 2920SMD300FA | 6.73 | 7.98 | 4.80 | 5.44 | 0.40 | 0.90 | 0.50 | 1.20 | 0.50 | 0.90 |
| 1812SMD010FA | 4.37 | 4.73 | 3.07 | 3.41 | 0.60 | 0.90 | 0.30 | 0.95 | 0.25 | 0.65 |
| 1812SMD014FA | 4.37 | 4.73 | 3.07 | 3.41 | 0.60 | 0.90 | 0.30 | 0.95 | 0.25 | 0.65 |
| 1812SMD020FA | 4.37 | 4.73 | 3.07 | 3.41 | 0.60 | 0.90 | 0.30 | 0.95 | 0.25 | 0.65 |
| 1812SMD020-60FA | 4.37 | 4.73 | 3.07 | 3.41 | 0.60 | 0.90 | 0.30 | 0.95 | 0.25 | 0.65 |
| 1812SMD035FA | 4.37 | 4.73 | 3.07 | 3.41 | 0.40 | 0.70 | 0.30 | 0.95 | 0.25 | 0.65 |
| 1812SMD050FA | 4.37 | 4.73 | 3.07 | 3.41 | 0.35 | 0.65 | 0.30 | 0.95 | 0.25 | 0.65 |
| 1812SMD050-30FA | 4.37 | 4.73 | 3.07 | 3.41 | 0.45 | 0.75 | 0.30 | 0.95 | 0.25 | 0.65 |
| 1812SMD075FA | 4.37 | 4.73 | 3.07 | 3.41 | 0.35 | 0.65 | 0.30 | 0.95 | 0.25 | 0.65 |
| 1812SMD075-24FA | 4.37 | 4.73 | 3.07 | 3.41 | 0.80 | 1.55 | 0.25 | 0.95 | 0.25 | 0.65 |
| 1812SMD075-33FA | 4.37 | 4.73 | 3.07 | 3.41 | 0.80 | 1.55 | 0.25 | 0.95 | 0.25 | 0.65 |
| 1812SMD110FA | 4.37 | 4.73 | 3.07 | 3.41 | 0.25 | 0.55 | 0.30 | 0.95 | 0.25 | 0.65 |
| 1812SMD110-16FA | 4.37 | 4.73 | 3.07 | 3.41 | 0.25 | 0.90 | 0.30 | 0.95 | 0.25 | 0.65 |
| 1812SMD110-24FA | 4.37 | 4.73 | 3.07 | 3.41 | 0.80 | 1.30 | 0.25 | 0.95 | 0.25 | 0.65 |
| 1812SMD125FA | 4.37 | 4.73 | 3.07 | 3.41 | 0.25 | 0.55 | 0.30 | 0.95 | 0.25 | 0.65 |
| 1812SMD150FA | 4.37 | 4.73 | 3.07 | 3.41 | 0.25 | 0.55 | 0.30 | 0.95 | 0.25 | 0.65 |
| 1812SMD150-12FA | 4.37 | 4.73 | 3.07 | 3.41 | 0.60 | 1.10 | 0.25 | 0.95 | 0.25 | 0.65 |
| 1812SMD150-24FA | 4.37 | 4.73 | 3.07 | 3.41 | 0.60 | 1.55 | 0.25 | 0.95 | 0.25 | 0.65 |
| 1812SMD160FA | 4.37 | 4.73 | 3.07 | 3.41 | 0.25 | 0.90 | 0.30 | 0.95 | 0.25 | 0.65 |
| 1812SMD160-12FA | 4.37 | 4.73 | 3.07 | 3.41 | 0.60 | 1.35 | 0.25 | 0.95 | 0.25 | 0.65 |
| 1812SMD160-16FA | 4.37 | 4.73 | 3.07 | 3.41 | 0.60 | 1.35 | 0.25 | 0.95 | 0.25 | 0.65 |
| 1812SMD200FA | 4.37 | 4.73 | 3.07 | 3.41 | 0.55 | 1.20 | 0.25 | 0.95 | 0.25 | 0.65 |
| 1812SMD260FA | 4.37 | 4.73 | 3.07 | 3.41 | 0.55 | 1.20 | 0.25 | 0.95 | 0.25 | 0.65 |
| 1812SMD260-13FA | 4.37 | 4.73 | 3.07 | 3.41 | 0.80 | 1.55 | 0.25 | 0.95 | 0.25 | 0.65 |
| 1812SMD260-16FA | 4.37 | 4.73 | 3.07 | 3.41 | 0.80 | 1.55 | 0.25 | 0.95 | 0.25 | 0.65 |
| 1812SMD300FA | 4.37 | 4.73 | 3.07 | 3.41 | 0.80 | 1.55 | 0.25 | 0.95 | 0.25 | 0.65 |

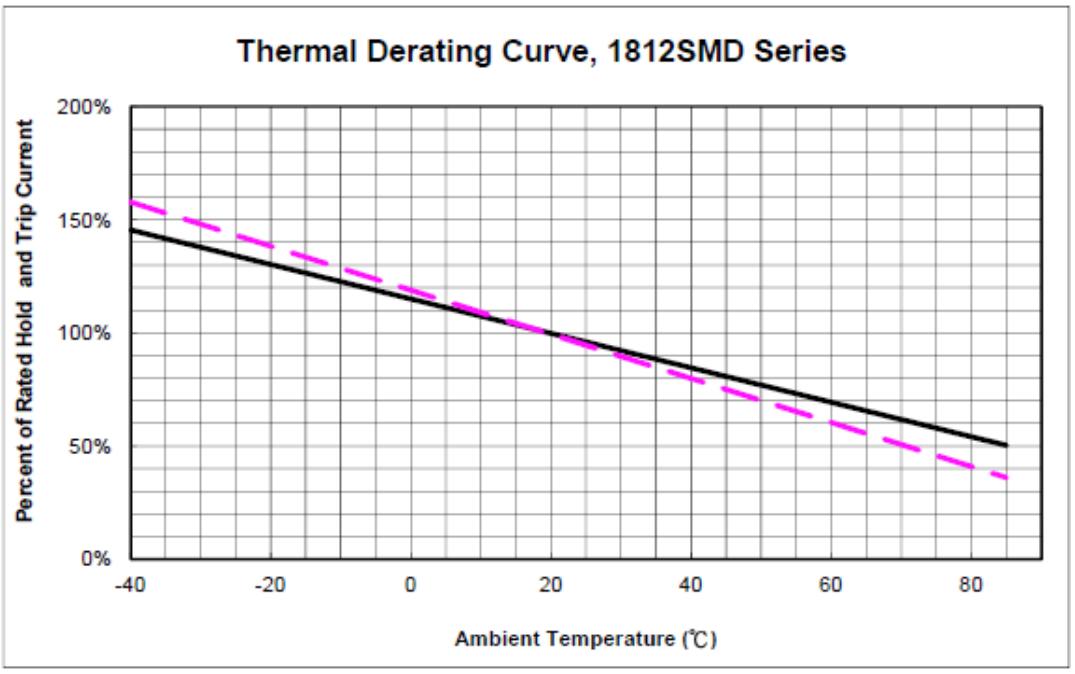
| Part Number | A | | B | | C | | D | | E | |
|---|---|---|---|---|---|---|---|---|---|---|
| | min | max | min | max | min | max | min | max | min | max |
| 1210SMD005FA | 3.00 | 3.43 | 2.35 | 2.80 | 0.60 | 1.15 | 0.25 | 0.75 | 0.10 | 0.45 |
| 1210SMD010FA | 3.00 | 3.43 | 2.35 | 2.80 | 0.60 | 1.15 | 0.25 | 0.75 | 0.10 | 0.45 |
| 1210SMD020FA | 3.00 | 3.43 | 2.35 | 2.80 | 0.40 | 0.85 | 0.25 | 0.75 | 0.10 | 0.45 |
| 1210SMD035FA | 3.00 | 3.43 | 2.35 | 2.80 | 0.40 | 0.80 | 0.25 | 0.75 | 0.10 | 0.45 |
| 1210SMD050FA | 3.00 | 3.43 | 2.35 | 2.80 | 0.30 | 0.75 | 0.25 | 0.75 | 0.10 | 0.45 |
| 1210SMD075FA | 3.00 | 3.43 | 2.35 | 2.80 | 0.30 | 0.70 | 0.25 | 0.75 | 0.10 | 0.45 |
| 1210SMD075-24FA | 3.00 | 3.43 | 2.35 | 2.80 | 0.90 | 1.30 | 0.25 | 0.75 | 0.10 | 0.45 |
| 1210SMD110FA | 3.00 | 3.43 | 2.35 | 2.80 | 0.60 | 1.00 | 0.25 | 0.75 | 0.10 | 0.45 |
| 1210SMD150FA | 3.00 | 3.43 | 2.35 | 2.80 | 0.50 | 0.90 | 0.25 | 0.75 | 0.10 | 0.45 |
| 1210SMD175FA | 3.00 | 3.43 | 2.35 | 2.80 | 0.80 | 1.40 | 0.25 | 0.75 | 0.10 | 0.45 |
| 1210SMD200FA | 3.00 | 3.43 | 2.35 | 2.80 | 0.80 | 1.40 | 0.25 | 0.75 | 0.10 | 0.45 |
| 1206SMD005FA | 3.00 | 3.50 | 1.50 | 1.80 | 0.45 | 0.85 | 0.10 | 0.75 | 0.10 | 0.45 |
| 1206SMD010FA | 3.00 | 3.50 | 1.50 | 1.80 | 0.45 | 0.85 | 0.10 | 0.75 | 0.10 | 0.45 |
| 1206SMD012FA | 3.00 | 3.50 | 1.50 | 1.80 | 0.45 | 0.85 | 0.10 | 0.75 | 0.10 | 0.45 |
| 1206SMD016FA | 3.00 | 3.50 | 1.50 | 1.80 | 0.45 | 0.75 | 0.10 | 0.75 | 0.10 | 0.45 |
| 1206SMD020FA | 3.00 | 3.50 | 1.50 | 1.80 | 0.45 | 0.75 | 0.10 | 0.75 | 0.10 | 0.45 |
| 1206SMD025FA | 3.00 | 3.50 | 1.50 | 1.80 | 0.45 | 0.75 | 0.10 | 0.75 | 0.10 | 0.45 |
| 1206SMD025-24FA | 3.00 | 3.50 | 1.50 | 1.80 | 0.45 | 0.75 | 0.10 | 0.75 | 0.10 | 0.45 |
| 1206SMD035FA | 3.00 | 3.50 | 1.50 | 1.80 | 0.45 | 0.75 | 0.10 | 0.75 | 0.10 | 0.45 |
| 1206SMD035-30FA | 3.00 | 3.50 | 1.50 | 1.80 | 0.90 | 1.30 | 0.25 | 0.75 | 0.10 | 0.45 |
| 1206SMD050FA | 3.00 | 3.50 | 1.50 | 1.80 | 0.25 | 0.55 | 0.10 | 0.75 | 0.10 | 0.45 |
| 1206SMD050-24FA | 3.00 | 3.50 | 1.50 | 1.80 | 0.90 | 1.30 | 0.25 | 0.75 | 0.10 | 0.45 |
| 1206SMD075FA | 3.00 | 3.50 | 1.50 | 1.80 | 0.45 | 1.25 | 0.25 | 0.75 | 0.10 | 0.45 |
| 1206SMD075-16FA | 3.00 | 3.50 | 1.50 | 1.80 | 0.45 | 1.25 | 0.25 | 0.75 | 0.10 | 0.45 |
| 1206SMD100FA | 3.00 | 3.50 | 1.50 | 1.80 | 0.45 | 1.00 | 0.25 | 0.75 | 0.10 | 0.45 |
| 1206SMD110FA | 3.00 | 3.50 | 1.50 | 1.80 | 0.45 | 1.00 | 0.25 | 0.75 | 0.10 | 0.45 |
| 1206SMD150FA | 3.00 | 3.50 | 1.50 | 1.80 | 0.80 | 1.40 | 0.25 | 0.75 | 0.10 | 0.45 |
| 1206SMD200FA | 3.00 | 3.50 | 1.50 | 1.80 | 0.85 | 1.60 | 0.25 | 0.75 | 0.10 | 0.45 |
| 0805SMD010FA | 2.00 | 2.30 | 1.20 | 1.50 | 0.55 | 1.00 | 0.20 | 0.60 | 0.10 | 0.45 |
| 0805SMD020FA | 2.00 | 2.30 | 1.20 | 1.50 | 0.55 | 1.00 | 0.20 | 0.60 | 0.10 | 0.45 |
| 0805SMD035FA | 2.00 | 2.30 | 1.20 | 1.50 | 0.45 | 0.75 | 0.20 | 0.60 | 0.10 | 0.45 |
| 0805SMD050FA | 2.00 | 2.30 | 1.20 | 1.50 | 0.55 | 1.25 | 0.20 | 0.60 | 0.10 | 0.45 |
| 0805SMD075FA | 2.00 | 2.30 | 1.20 | 1.50 | 0.55 | 1.25 | 0.20 | 0.60 | 0.10 | 0.45 |
| 0805SMD100FA | 2.00 | 2.30 | 1.20 | 1.50 | 0.75 | 1.80 | 0.20 | 0.60 | 0.10 | 0.45 |

## 5. Thermal Derating Curve




**A=** 2920SMD125FA~ 2920SMD300FA

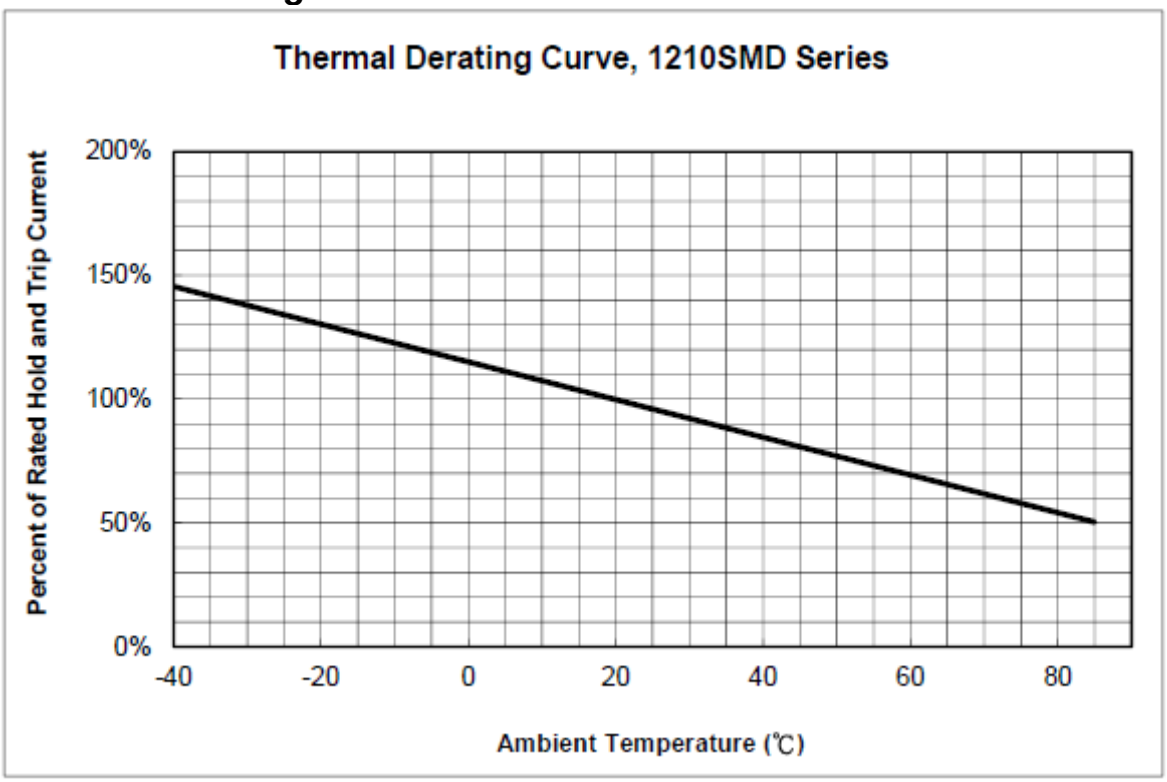
**B=** 2920SMD030FA~ 2920SMD100FA

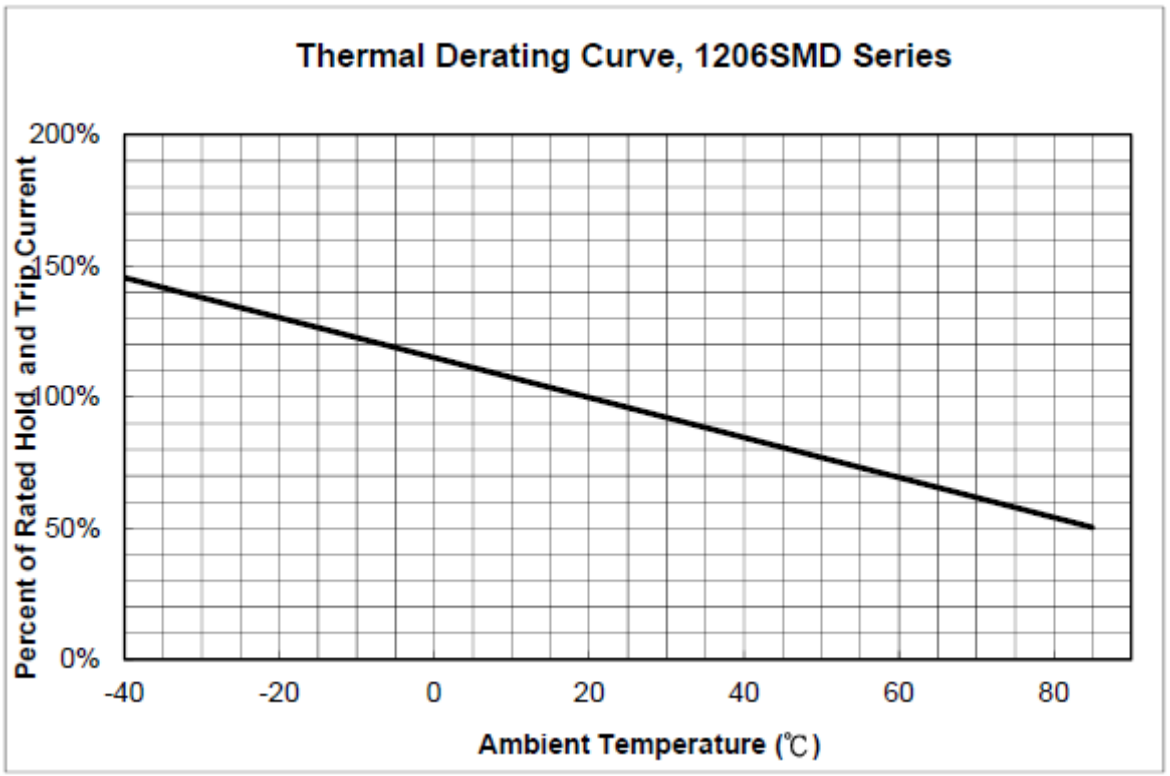



**A=** 1812SMD075FA, 075-24FA, 075-33FA, 110FA, 110-16FA, 110-24FA, 125FA, 150FA, 150-12FA, 150-24FA, 160FA, 160-12FA, 160-16FA, 200FA, 260FA, 260-13FA, 260-16FA,300FA

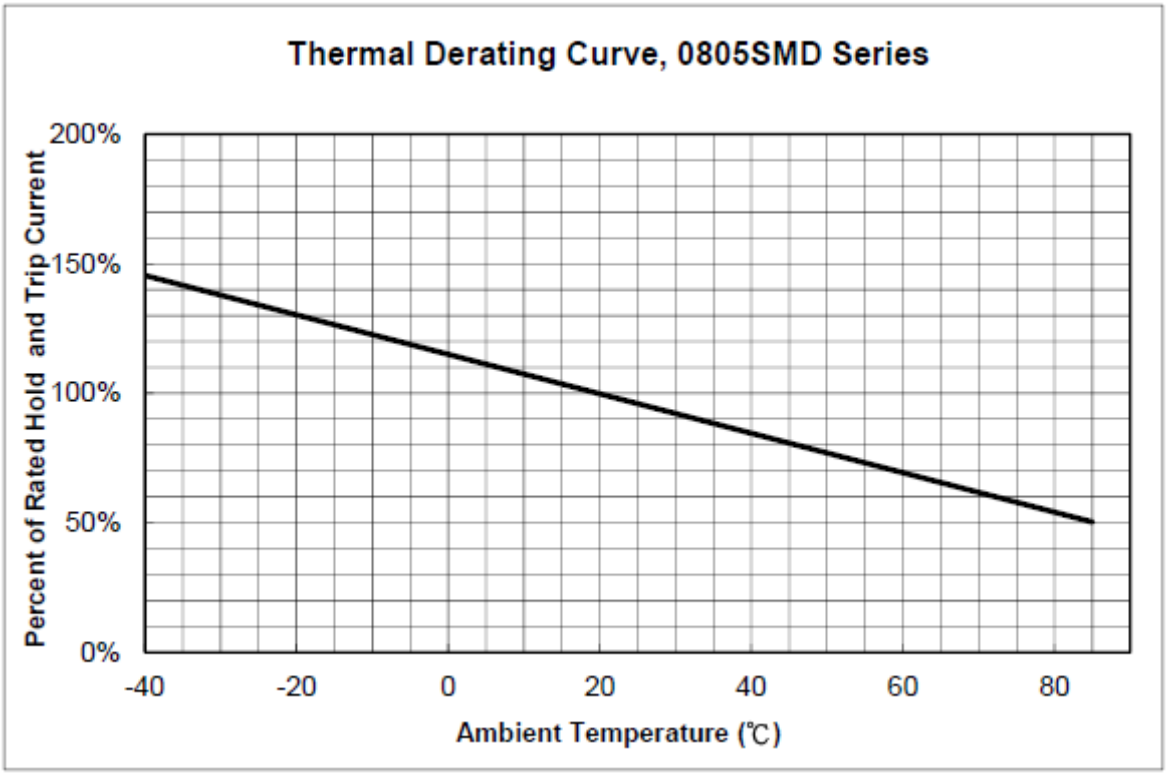
**B=** 1812SMD010FA, 014FA, 020FA, 020-60FA, 035FA, 050FA, 050-30FA

## Thermal Derating Curve-2



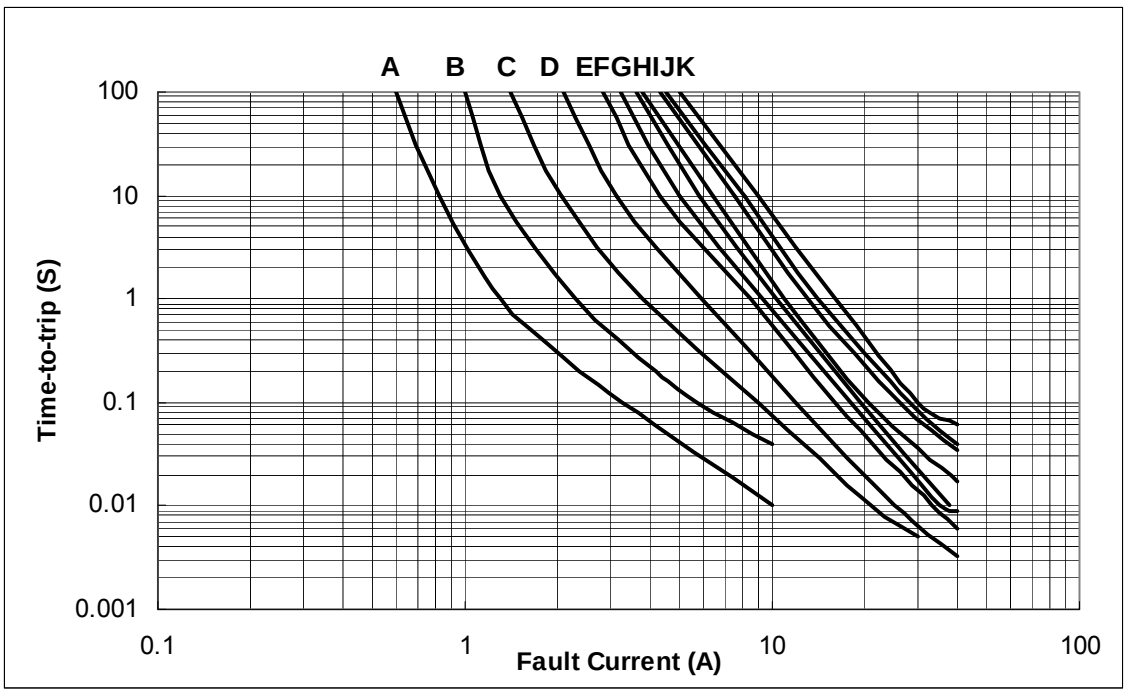



## Thermal Derating Curve-3

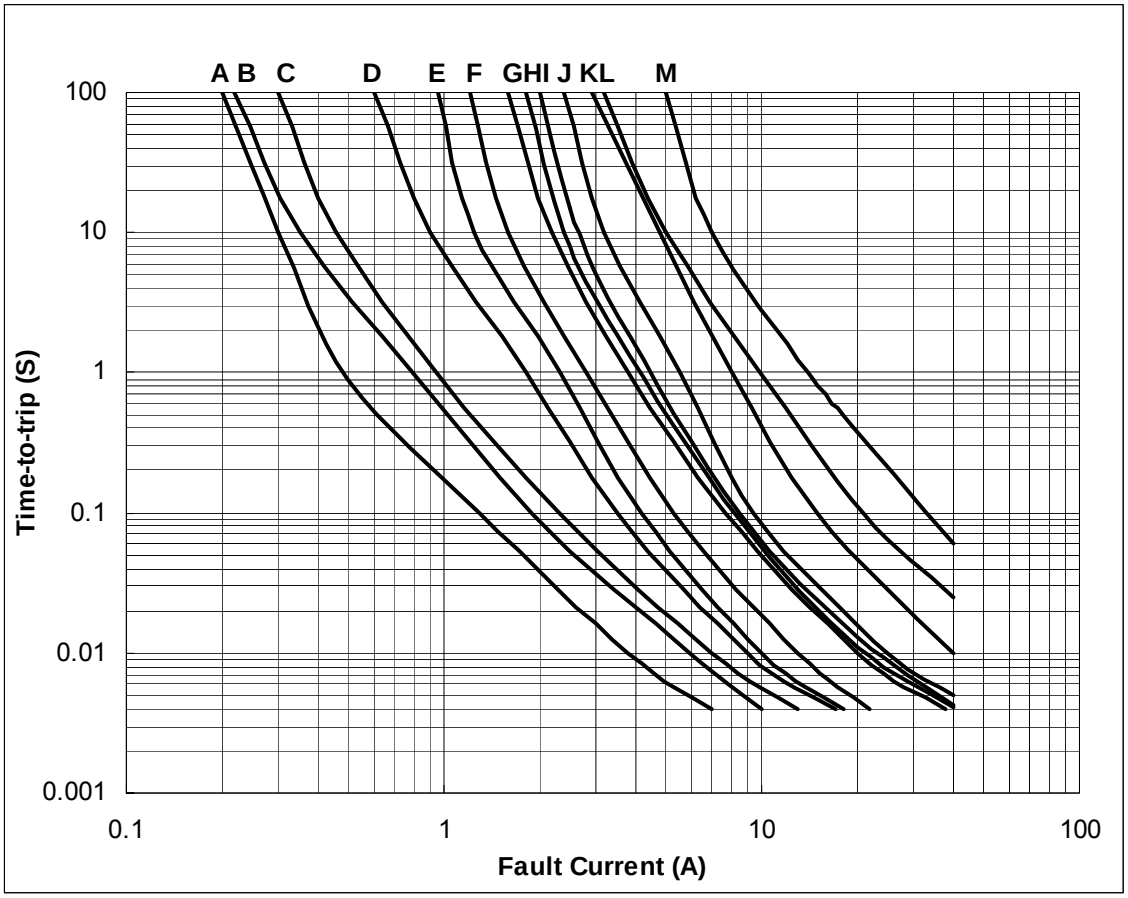



## 6. Typical Time-To-Trip at 23℃

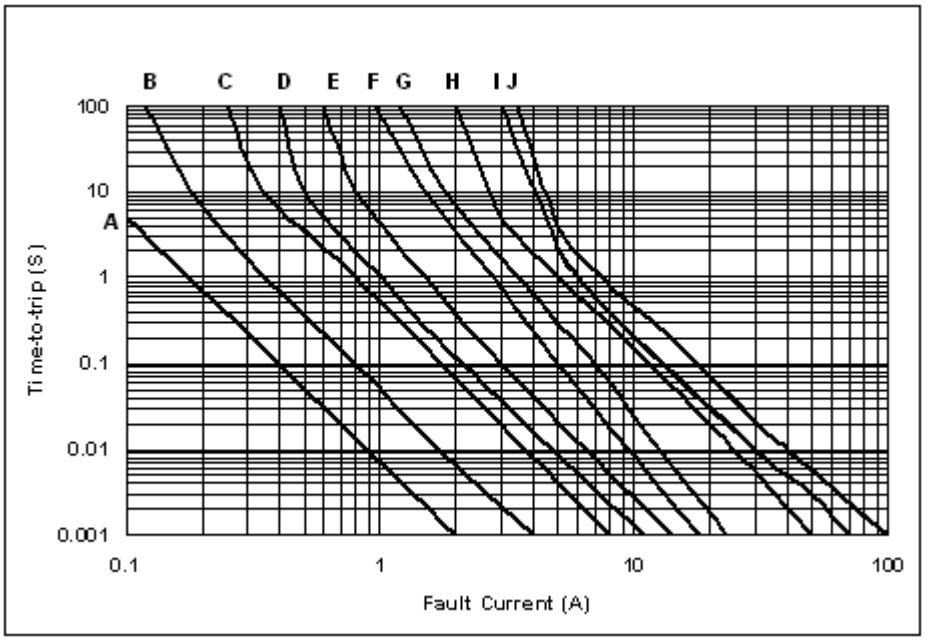
A =2920SMD030FA
B =2920SMD050FA
C =2920SMD075FA/ 075-60FA
D =2920SMD100FA
E =2920SMD125FA
F =2920SMD150FA
G =2920SMD185FA
H =2920SMD200FA/ 200-24FA
I =2920SMD250FA
J =2920SMD260FA
K=2920SMD300FA

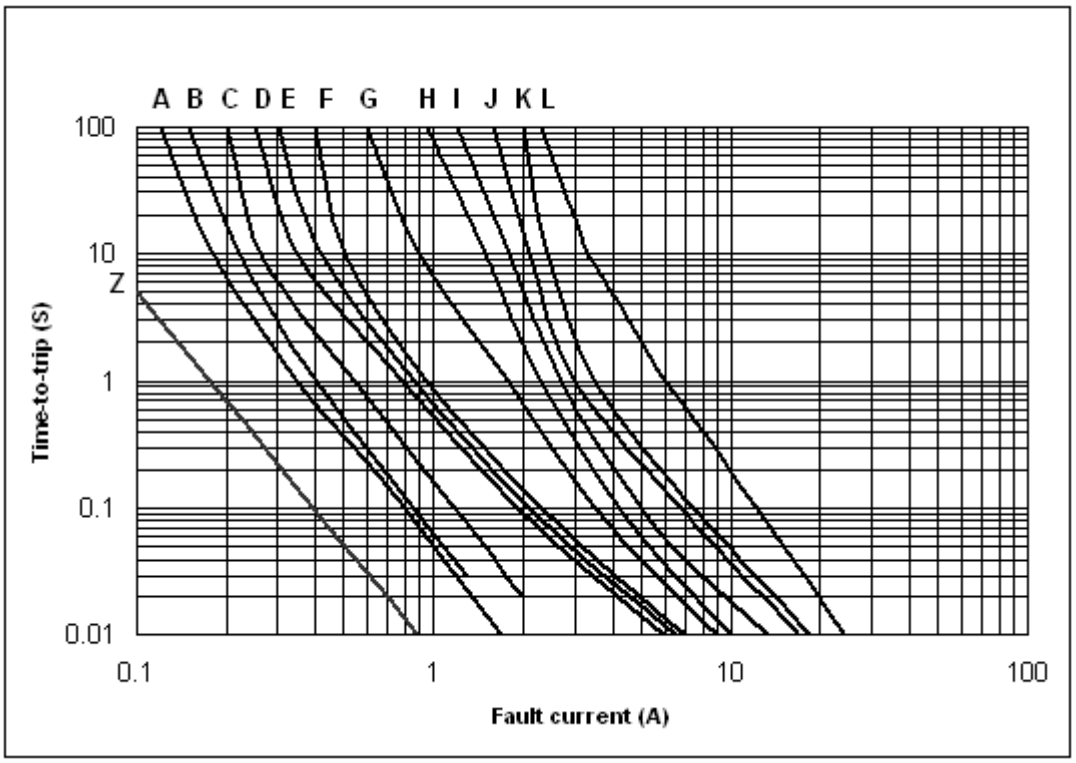


A = 1812SMD010FA
B = 1812SMD014FA
C = 1812SMD020FA/
1812SMD020-60FA
D = 1812SMD035FA
E = 1812SMD050FA
1812SMD050-30FA
F = 1812SMD075FA/
075-24FA/075-33FA
G = 1812SMD110FA/
110-16FA/110-24FA
H = 1812SMD125FA
I = 1812SMD150FA/
150-12FA/150-24FA
J = 1812SMD160FA/
160-12FA/160-16FA
K = 1812SMD200FA
L = 1812SMD260FA/
260-13FA/260-16FA
M = 1812SMD300FA



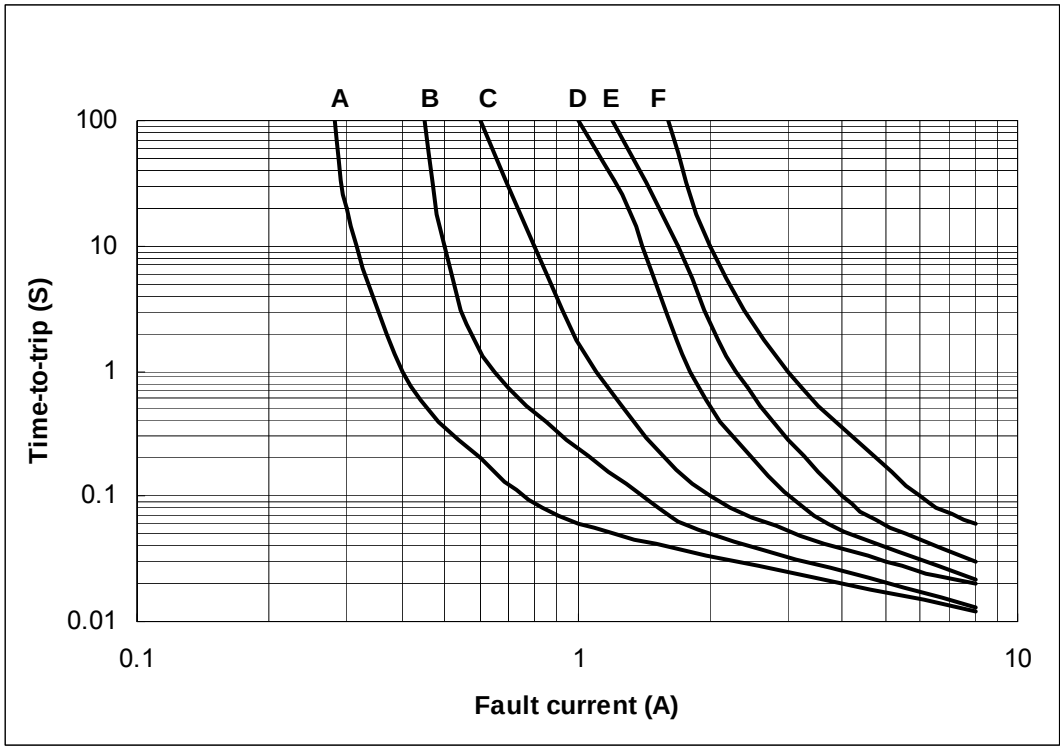

A =1210SMD005FA
B =1210SMD010FA
C =1210SMD020FA
D =1210SMD035FA
E =1210SMD050FA
F =1210SMD075FA/
075-24FA
G =1210SMD110FA
H =1210SMD150FA
I =1210SMD175FA
J =1210SMD200FA






Z= 1206SMD005FA
A= 1206SMD010FA
B= 1206SMD012FA
C= 1206SMD016FA
D= 1206SMD020FA
E= 1206SMD025FA/ 025-24FA
F= 1206SMD035FA/ 035-60FA
G= 1206SMD050FA/ 050-24FA
H= 1206SMD075FA/ 075-16FA
I= 1206SMD100FA
J= 1206SMD110FA
K= 1206SMD150FA
L= 1206SMD200FA

A =0805SMD010FA
B =0805SMD020FA
C =0805SMD035FA
D =0805SMD050FA
E =0805SMD075FA
F =0805SMD100FA



## 7. Material Specification

Terminal pad material: Pure Tin

Soldering characteristics: Meets EIA specification RS 186-9E, ANSI/J-std-002 Category 3

## 8. Part Numbering and Marking System

### Part Numbering System

2920 S M D □ □ □ – □ □ FA

Voltage Rating

Current Rating

1812 S M D □ □ □ - FA

Current Rating

1812 S M D □ □ □ - □ □ FA

Voltage Rating

Current Rating

1210 S M D □ □ □ – □ □ FA

Voltage Rating

Current Rating

1206 S M D □ □ □ – □ □ FA

Voltage Rating

Current Rating

### Part Marking System

F200L
Example

F □ □ □ L

Part Identification

Fuse Logo

F 075 60
Example

F □ □ □ □ □

Part Identification

Fuse Logo

F110
Example

F □ □ □

Part Identification

Fuse Logo

F 110 16
Example

F □ □ □ □ □

Part Identification

Fuse Logo

F75
Example

F □ □

Part Identification

Fuse Logo

F75 F

F □ □ □

Part Identification

Fuse Logo

FA

F □

Part Identification

Fuse Logo

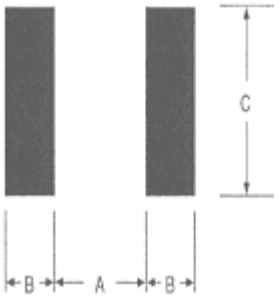
FZ =1206SMD005FA
FN =1206SMD050-24FA
FE =1206SMD075FA
FO =1206SMD075-16FA
FF =1206SMD100FA
FG =1206SMD110FA
FH =1206SMD150FA
FI =1206SMD200FA
F1 =0805SMD010FA
F2 =0805SMD020FA
F3 =0805SMD035FA
F5 =0805SMD050FA
F7 =0805SMD075FA
F0 =0805SMD100FA
FA =1206SMD010FA
FJ =1206SMD012FA
FK =1206SMD016FA
FB =1206SMD020FA
FL =1206SMD025FA
FP =1206SMD025-24FA
FC =1206SMD035FA
FM =1206SMD035-30FA
FD =1206SMD050FA

**Warning:**

-Operation beyond the specified maximum ratings or improper use may result in damage and possible electrical arcing and/or flame.
-PPTC device are intended for occasional over current protection. Application for repeated over current condition and/or prolonged trip are not anticipated.
-Avoid contact of PPTC device with chemical solvent. Prolonged contact will damage the device performance.

## 9. Pad Layouts、Solder Reflow and Rework Recommendations

The dimension in the table below provide the recommended pad layout for each SMD device




| Pad dimensions (millimeters) | | | |
|---|---|---|---|
| Device | A Nominal | B Nominal | C Nominal |
| All 2920 Series | 5.10 | 2.30 | 5.60 |
| All 1812 Series | 3.45 | 1.78 | 3.50 |
| All 1210 Series | 2.00 | 1.00 | 2.80 |
| All 1206 Series | 2.00 | 1.00 | 1.90 |
| All 0805 Series | 1.20 | 1.00 | 1.50 |

RoHS

| Profile Feature | Pb-Free Assembly |
|---|---|
| **Average Ramp-Up Rate (Tsmax to Tp)** | 3 ℃/second max. |
| **Preheat :**<br>Temperature Min (Tsmin)<br>Temperature Max (Tsmax)<br>Time (tsmin to tsmax) | <br>150 ℃<br>200 ℃<br>60-180 seconds |
| **Time maintained above:**<br>Temperature($T_L$)<br>Time ($t_L$) | <br>217 ℃<br>60-150 seconds |
| **Peak/Classification Temperature(Tp) :** | 260 ℃ |
| **Time within 5℃ of actual Peak :**<br>Temperature (tp) | <br>20-40 seconds |
| **Ramp-Down Rate :** | 6 ℃/second max. |
| **Time 25 ℃ to Peak Temperature :** | 8 minutes max. |

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

**Solder reflow**

※ Due to “Lead Free” nature, Temperature and Dwelling time for the soldering zone is higher than those for Regular. This may cause damage to other components.

1. Recommended max past thickness > 0.25mm.
2. Devices can be cleaned using standard methods and aqueous solvent.
3. Rework use standard industry practices.
4. Storage Environment : < 30℃ / 60%RH

**Caution:**

1. If reflow temperatures exceed the recommended profile, devices may not meet the performance requirements.
2. Devices are not designed to be wave soldered to the bottom side of the board.

## Reflow Profile