In accordance with procedures described in IEEE Standard C37.41, minimum melting time-current characteristic curves for S&C power fuses are based on tests starting at no initial load. When in service, of course, every fuse will be carrying a load that may approach or even exceed the ampere rating. This preloading reduces the heat-dissipating ability of the fuse and reduces its melting time. This effect has been minimized in S&C power fuses by designing them to melt at current levels not less than 200% of rating.

Nonetheless, precise coordination of power fuses—with other power fuses or with circuit breakers or automatic circuit reclosers—requires that the published melting times be adjusted for the most severe anticipated condition of preload. The preloading adjustment factors are shown in Figure 1. These preloading adjustment factors are to be used with S&C power fuses only because the derivation of these factors is dependent upon not only the element construction but also the relationship of the minimum melting current to the ampere rating of the fuse.

The excessive preloading produced by peak loads approaching the values listed in these tables causes a reduction in melting time by as much as 60% of the published values. In transformer-primary fusing applications where the principal objectives are maximum transformer protection and maximum backup protection for secondary-side equipment and circuits, it may be expedient to forego complete coordination with other protective devices for the duration of such peak-load conditions.

Although higher peak-load values than those shown in italics could have been listed, such extreme overloading—while not damaging to the fuses—should be avoided to ensure against unnecessary fuse blowing caused by momentary surges during such overload conditions. A transformer primary fuse is selected to accommodate—not to interrupt—peak loads.

All peak-load capability values are based on 70% preload and 30°C (83°F) ambient temperature. Peak-load capability is increased 0.5% for each degree of ambient temperature below 30°C (83°F) and decreased 0.5% for each degree of ambient temperature above 30°C (83°F).

The emergency peak-load capability values not shown in italics represent the maximum nonrepetitive load the fuse will carry without impairing its ability to perform properly. In no event should the fuse be subjected to this level of load more than twice a year.

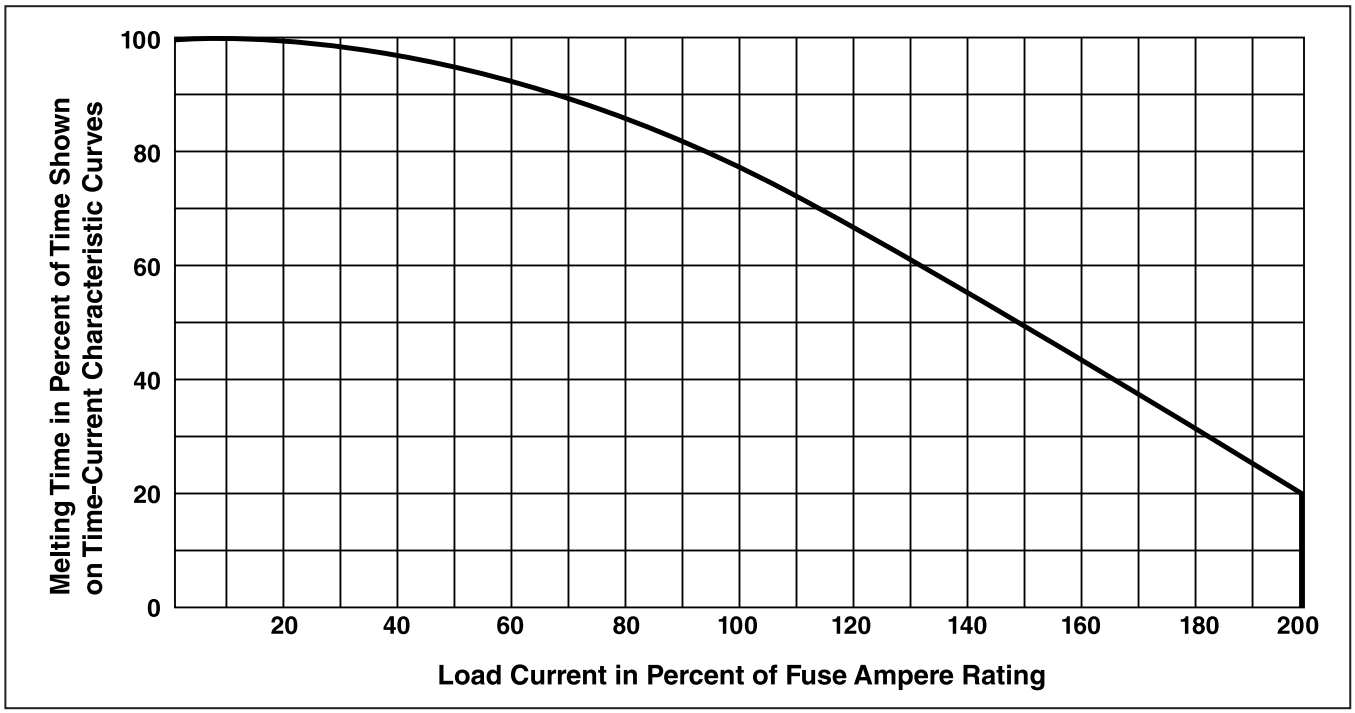


**Figure 1. Preloading adjustment factors.**

Supersedes Data Bulletins 210-190, 210-195, and 210-200, each dated August 6, 1984

August 28, 2017

**Table 1. SMD-1A Fuse Units–34.5 kV**
**S&C Standard, Slow, and Very Slow Speeds (TCC No. 153-1, 119-1, and 176-1)**

| Rating Amperes | Peak-Load Capability, Amperes | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Continuous | Daily | | | | | Emergency | | | | |
| Time, Hours → | | ½ | 1 | 2 | 4 | 8 | ½ | 1 | 2 | 4 | 8 |
| 5E | *8.0* | *8.5* | *8.4* | 8.3 | *8.2* | *8.2* | *8.5* | *8.4* | *8.3* | *8.2* | *8.2* |
| 7E | *11.2* | *11.9* | *11.7* | *11.6* | *11.5* | *11.5* | *11.9* | *11.7* | *11.6* | *11.5* | *11.5* |
| 10E | *16.0* | *17.0* | *16.8* | *16.6* | *16.5* | *16.5* | *17.0* | *16.8* | *16.6* | *16.5* | *16.5* |
| 13E | *20.8* | *22.1* | *21.8* | *21.6* | *21.4* | *21.4* | *22.1* | *21.8* | *21.6* | *21.4* | *21.4* |
| 15E | *24.0* | *25.5* | *25.2* | *24.9* | *24.7* | *24.7* | *25.5* | *25.2* | *24.9* | *24.7* | *24.7* |
| 20E | *32.0* | *34.0* | *33.6* | *33.2* | *33.0* | *33.0* | *34.0* | *33.6* | *33.2* | *33.0* | *33.0* |
| 25E | *40.0* | *42.5* | *42.0* | *41.5* | *41.2* | *41.2* | *42.5* | *42.0* | *41.5* | *41.2* | *41.2* |
| 30E | *48.0* | *51* | *50.4* | *49.8* | *49.5* | *49.5* | *51* | *50.4* | *49.8* | *49.5* | *49.5* |
| 40E | 64 | 68 | 67 | 66 | 66 | *66* | *68* | 67 | *66* | 66 | 66 |
| 50E | *80* | *85* | *84* | *83* | *83* | *83* | *85* | *84* | *83* | *83* | *83* |
| 65E | 95 | 104 | 100 | 99 | 98 | 98 | 110 | 109 | 107 | 105 | 104 |
| 80E | 112 | 124 | 120 | 117 | 116 | 115 | 132 | 130 | 128 | 125 | 124 |
| 100E | 146 | 160 | 155 | 153 | 152 | 150 | 170 | 165 | 160 | 158 | 157 |
| 125E | 159 | 175 | 168 | 166 | 165 | 162 | 196 | 192 | 187 | 183 | 182 |
| 150E | 183 | 202 | 195 | 192 | 190 | 187 | 226 | 222 | 216 | 211 | 210 |
| 175E | 192 | 210 | 204 | 200 | 197 | 196 | 245 | 238 | 231 | 226 | 224 |
| 200E | 200 | 224 | 216 | 208 | 206 | 204 | 260 | 250 | 244 | 238 | 236 |

**Table 2. SMD-1A Fuse Units–46 kV**
**S&C Standard, Slow, and Very Slow Speeds (TCC No. 153-1, 119-1, and 176-1)**

| Rating Amperes | Peak-Load Capability, Amperes | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Continuous | Daily | | | | | Emergency | | | | |
| Time, Hours → | | ½ | 1 | 2 | 4 | 8 | ½ | 1 | 2 | 4 | 8 |
| 5E | *8.0* | *8.2* | *8.1* | *8.0* | *8.0* | *8.0* | *8.2* | *8.1* | *8.0* | *8.0* | *8.0* |
| 7E | *11.2* | *11.5* | *11.3* | *11.2* | *11.2* | *11.2* | *11.5* | *11.3* | *11.2* | *11.2* | *11.2* |
| 10E | *16.0* | *16.5* | *16.2* | *16.0* | *16.0* | *16.0* | *16.5* | *16.2* | *16.0* | *16.0* | *16.0* |
| 13E | *20.8* | *21.4* | *21.0* | *20.8* | *20.8* | *20.8* | *21.4* | *21.0* | *20.8* | *20.8* | *20.8* |
| 15E | *24.0* | *24.7* | *24.2* | *24.0* | *24.0* | *24.0* | *24.7* | *24.2* | *24.0* | *24.0* | *24.0* |
| 20E | *32.0* | *33.0* | *32.4* | *32.0* | *32.0* | *32.0* | *33.0* | *32.4* | *32.0* | *32.0* | *32.0* |
| 25E | *40.0* | *41.2* | *40.4* | *40.0* | *40.0* | *40.0* | *41.2* | *40.4* | *40.0* | *40.0* | *40.0* |
| 30E | *48.0* | *49.5* | *48.5* | *48.0* | *48.0* | *48.0* | *49.5* | *48.5* | *48.0* | *48.0* | *48.0* |
| 40E | *64* | *66* | *65* | *64* | *64* | *64* | *66* | *65* | *64* | *64* | *64* |
| 50E | *80* | *83* | *81* | *80* | *80* | *80* | *83* | *81* | *80* | *80* | *80* |
| 65E | 91 | 101 | 98 | 96 | 95 | 94 | 107 | 105 | 104 | 102 | 101 |
| 80E | 104 | 116 | 110 | 108 | 106 | 105 | 124 | 118 | 116 | 114 | 113 |
| 100E | 120 | 133 | 128 | 125 | 123 | 122 | 143 | 138 | 135 | 133 | 132 |
| 125E | 144 | 156 | 152 | 150 | 147 | 146 | 169 | 165 | 162 | 160 | 158 |
| 150E | 165 | 180 | 175 | 171 | 169 | 168 | 195 | 187 | 181 | 178 | 174 |
| 175E | 192 | 210 | 204 | 199 | 197 | 196 | 244 | 238 | 230 | 225 | 224 |
| 200E | 200 | 224 | 216 | 208 | 206 | 204 | 260 | 250 | 244 | 238 | 236 |

**Table 3. SMD-1A Fuse Units–69 kV**
**S&C Standard, Slow, and Very Slow Speeds (TCC No. 153-1, 119-1, and 176-1)**

| Rating Amperes | Peak-Load Capability, Amperes | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Continuous | Daily | | | | | Emergency | | | | |
| Time, Hours → | | ½ | 1 | 2 | 4 | 8 | ½ | 1 | 2 | 4 | 8 |
| 5E | 7.5 | 7.7 | 7.6 | 7.5 | 7.5 | 7.5 | 8.0 | 7.8 | 7.7 | 7.7 | 7.7 |
| 7E | 10.5 | 10.8 | 10.6 | 10.5 | 10.5 | 10.5 | 11.2 | 11.0 | 10.8 | 10.8 | 10.8 |
| 10E | 15.0 | 15.5 | 15.2 | 15.0 | 15.0 | 15.0 | 16.0 | 15.7 | 15.5 | 15.5 | 15.5 |
| 13E | 19.5 | 20.1 | 19.7 | 19.5 | 19.5 | 19.5 | 20.8 | 20.4 | 20.1 | 20.1 | 20.1 |
| 15E | 22.5 | 23.2 | 22.8 | 22.5 | 22.5 | 22.5 | 24.0 | 23.5 | 23.2 | 23.2 | 23.2 |
| 20E | 30.0 | 31.0 | 30.4 | 30.0 | 30.0 | 30.0 | 32.0 | 31.4 | 31.0 | 31.0 | 31.0 |
| 25E | 37.5 | 38.8 | 38.0 | 37.5 | 37.5 | 37.5 | 40.0 | 39.2 | 38.8 | 38.8 | 38.8 |
| 30E | 45.0 | 46.5 | 45.6 | 45.0 | 45.0 | 45.0 | 48.0 | 47.0 | 46.5 | 46.5 | 46.5 |
| 40E | 60 | 62 | 61 | 60 | 60 | 60 | 64 | 63 | 62 | 62 | 62 |
| 50E | 75 | 78 | 76 | 75 | 75 | 75 | 80 | 79 | 78 | 78 | 78 |
| 65E | 87 | 98 | 95 | 92 | 91 | 89 | 104 | 101 | 99 | 98 | 95 |
| 80E | 96 | 108 | 104 | 101 | 99 | 98 | 116 | 112 | 109 | 107 | 105 |
| 100E | 115 | 125 | 121 | 119 | 118 | 117 | 135 | 131 | 129 | 128 | 127 |
| 125E | 137 | 150 | 145 | 143 | 141 | 140 | 162 | 157 | 155 | 153 | 152 |
| 150E | 157 | 172 | 166 | 163 | 162 | 160 | 187 | 181 | 178 | 177 | 175 |
| 175E | 192 | 210 | 204 | 199 | 197 | 196 | 245 | 238 | 231 | 226 | 224 |
| 200E | 200 | 224 | 216 | 208 | 206 | 204 | 260 | 250 | 244 | 238 | 236 |

**Table 4. SMD-1A Fuse Units–115/138 kV**
**S&C Standard, Slow, and Very Slow Speeds (TCC No. 153-1, 119-1, and 176-1)**

| Rating Amperes | Peak-Load Capability, Amperes | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Continuous | Daily | | | | | Emergency | | | | |
| Time, Hours → | | ½ | 1 | 2 | 4 | 8 | ½ | 1 | 2 | 4 | 8 |
| 10E | *16.0* | *17.0* | *17.0* | *16.5* | *16.5* | *16.0* | *17.0* | *17.0* | *16.5* | *16.5* | *16.0* |
| 13E | *21.0* | *22.0* | *22.0* | *21.5* | *21.5* | *21.0* | *22.0* | *22.0* | *21.5* | *21.5* | *21.0* |
| 15E | *24.0* | *25.0* | *25.0* | *24.5* | *24.5* | *24.0* | *25.0* | *25.0* | *24.5* | *24.5* | *24.0* |
| 20E | *32.0* | *34.0* | *34.0* | *33.0* | *33.0* | *32.0* | *34.0* | *34.0* | *33.0* | *33.0* | *32.0* |
| 25E | *40.0* | *42.0* | *42.0* | *41.0* | *41.0* | *40.0* | *42.0* | *42.0* | *41.0* | *41.0* | *40.0* |
| 30E | *48.0* | *51* | *50.0* | *50.0* | *49.0* | *49.0* | *51* | *50.0* | *50.0* | *49.0* | *49.0* |
| 40E | *64* | *68* | *67* | *65* | *65* | *65* | *68* | *67* | *65* | *65* | *65* |
| 50E | *80* | *85* | *84* | *83* | *82* | *82* | *85* | *84* | *83* | *82* | *82* |
| 65E | *104* | *110* | *109* | *108* | *107* | *107* | *110* | *109* | *108* | *107* | *107* |
| 80E | 124 | 132 | 128 | 127 | 126 | 125 | 136 | 134 | 133 | 132 | 132 |
| 100E | 150 | 160 | 155 | 154 | 153 | 152 | 165 | 163 | 162 | 161 | 160 |

**Table 5. SMD-2B Fuse Units–69 kV**
**S&C Standard, Slow, and Very Slow Speeds (TCC No. 153-1, 119-1, and 176-1)**

| Rating Amperes | Peak-Load Capability, Amperes | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Continuous | Daily | | | | | Emergency | | | | |
| Time, Hours → | | ½ | 1 | 2 | 4 | 8 | ½ | 1 | 2 | 4 | 8 |
| 5E | *8.2* | *8.5* | *8.5* | *8.4* | *8.4* | *8.3* | *8.5* | *8.5* | *8.4* | *8.4* | *8.3* |
| 7E | *11.5* | *11.9* | *11.9* | *11.8* | *11.7* | *11.6* | *11.9* | *11.9* | *11.8* | *11.7* | *11.6* |
| 10E | *16.5* | *17.0* | *17.0* | *16.9* | *16.8* | *16.6* | *17.0* | *17.0* | *16.9* | *16.8* | *16.6* |
| 13E | *21.4* | *22.1* | *22.1* | *21.9* | *21.8* | *21.6* | *22.1* | *22.1* | *21.9* | *21.8* | *21.6* |
| 15E | *24.7* | *25.5* | *25.5* | *25.3* | *25.2* | *24.9* | *25.5* | *25.5* | *25.3* | *25.2* | *24.9* |
| 20E | *33.0* | *34.0* | *34.0* | *33.8* | *33.6* | *33.2* | *34.0* | *34.0* | *33.8* | *33.6* | *33.2* |
| 25E | *41.2* | *42.5* | *42.5* | *42.2* | *42.0* | *41.5* | *42.5* | *42.5* | *42.2* | *42.0* | *41.5* |
| 30E | *49.5* | *51* | *51* | *50.7* | *50.4* | *49.8* | *51* | *51* | *50.7* | *50.4* | *49.8* |
| 40E | *66* | *68* | *68* | *68* | *67* | *66* | *68* | *68* | *68* | 67 | *66* |
| 50E | *82* | *85* | *85* | *85* | *84* | *83* | *85* | *85* | *85* | *84* | *83* |
| 65E | *107* | *110* | *110* | *110* | *109* | *108* | *110* | *110* | *110* | *109* | *108* |
| 80E | 128 | 132 | 132 | 131 | 130 | 129 | 136 | 136 | 135 | 134 | 132 |
| 100E | 162 | 168 | 167 | 166 | 165 | 164 | 170 | 170 | 169 | 168 | 166 |
| 125E | 177 | 202 | 196 | 187 | 182 | 180 | 212 | 210 | 207 | 202 | 200 |
| 150E | 204 | 232 | 225 | 216 | 210 | 207 | 244 | 237 | 228 | 222 | 219 |
| 175E | 244 | 280 | 268 | 256 | 252 | 248 | 288 | 280 | 275 | 270 | 266 |
| 200E | 264 | 306 | 292 | 278 | 272 | 268 | 322 | 314 | 304 | 298 | 294 |
| 250E | 280 | 327 | 310 | 295 | 288 | 285 | 365 | 352 | 340 | 332 | 327 |
| 300E | 300 | 362 | 345 | 324 | 318 | 312 | 414 | 396 | 375 | 366 | 360 |

**Table 6. SMD-2B Fuse Units–115 kV**
**S&C Standard, Slow, and Very Slow Speeds (TCC No. 153-1, 119-1, and 176-1)**

| Rating Amperes | Peak-Load Capability, Amperes | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Continuous | Daily | | | | | Emergency | | | | |
| Time, Hours → | | ½ | 1 | 2 | 4 | 8 | ½ | 1 | 2 | 4 | 8 |
| 5E | *8.2* | *8.5* | *8.5* | 8.4 | *8.4* | *8.3* | *8.5* | *8.5* | *8.4* | *8.4* | *8.3* |
| 7E | *11.5* | *11.9* | *11.9* | *11.8* | *11.7* | *11.6* | *11.9* | *11.9* | *11.8* | *11.7* | *11.6* |
| 10E | *16.5* | *17.0* | *17.0* | *16.9* | *16.8* | *16.6* | *17.0* | *17.0* | *16.9* | *16.8* | *16.6* |
| 13E | *21.4* | *22.1* | *22.1* | *21.9* | *21.8* | *21.6* | *22.1* | *22.1* | *21.9* | *21.8* | *21.6* |
| 15E | *24.7* | *25.5* | *25.5* | *25.3* | *25.2* | *24.9* | *25.5* | *25.5* | *25.3* | *25.2* | *24.9* |
| 20E | *33.0* | *34.0* | *34.0* | *33.8* | *33.6* | *33.2* | *34.0* | *34.0* | *33.8* | *33.6* | *33.2* |
| 25E | *41.2* | *42.5* | *42.5* | *42.2* | *42.0* | *41.5* | *42.5* | *42.5* | *42.2* | *42.0* | *41.5* |
| 30E | *49.5* | *51* | *51* | *50.7* | *50.4* | *49.8* | *51* | *51* | *50.7* | *50.4* | *49.8* |
| 40E | *66* | *68* | *68* | *68* | *67* | *66* | *68* | *68* | *68* | *67* | *66* |
| 50E | *82* | *85* | *85* | *85* | *84* | *83* | *85* | *85* | *85* | *84* | *83* |
| 65E | *107* | *110* | *110* | *110* | *109* | *108* | *110* | *110* | *110* | *109* | *108* |
| 80E | *132* | *136* | *136* | *135* | *134* | *133* | *136* | *136* | *135* | *134* | *133* |
| 100E | *165* | *170* | *170* | *169* | *168* | *166* | *170* | *170* | *169* | *168* | *166* |
| 125E | 181 | 207 | 200 | 194 | 186 | 182 | 212 | 210 | 207 | 202 | 200 |
| 150E | 207 | 240 | 230 | 223 | 214 | 210 | 249 | 240 | 232 | 225 | 218 |
| 175E | 238 | 272 | 263 | 252 | 245 | 242 | 286 | 276 | 266 | 260 | 256 |
| 200E | 258 | 298 | 286 | 272 | 266 | 262 | 316 | 308 | 304 | 298 | 294 |
| 250E | 270 | 320 | 302 | 287 | 280 | 275 | 360 | 342 | 326 | 320 | 315 |

**Table 7. SMD-2B Fuse Units – 138 kV**
**S&C Standard, Slow, and Very Slow Speeds (TCC No. 153-1, 119-1, and 176-1)**

| Rating Amperes | Peak-Load Capability, Amperes | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Continuous | Daily | | | | | Emergency | | | | |
| Time, Hours → | | ½ | 1 | 2 | 4 | 8 | ½ | 1 | 2 | 4 | 8 |
| 5E | *8.2* | *8.5* | *8.5* | 8.4 | *8.4* | *8.3* | *8.5* | *8.5* | *8.4* | *8.4* | *8.3* |
| 7E | *11.5* | *11.9* | *11.9* | *11.8* | *11.7* | *11.6* | *11.9* | *11.9* | *11.8* | *11.7* | *11.6* |
| 10E | *16.5* | *17.0* | *17.0* | *16.9* | *16.8* | *16.6* | *17.0* | *17.0* | *16.9* | *16.8* | *16.6* |
| 13E | *21.4* | *22.1* | *22.1* | *21.9* | *21.8* | *21.6* | *22.1* | *22.1* | *21.9* | *21.8* | *21.6* |
| 15E | *24.7* | *25.5* | *25.5* | *25.3* | *25.2* | *24.9* | *25.5* | *25.5* | *25.3* | *25.2* | *24.9* |
| 20E | *33.0* | *34.0* | *34.0* | *33.8* | *33.6* | *33.2* | *34.0* | *34.0* | *33.8* | *33.6* | *33.2* |
| 25E | *41.2* | *42.5* | *42.5* | *42.2* | *42.0* | *41.5* | *42.5* | *42.5* | *42.2* | *42.0* | *41.5* |
| 30E | *49.5* | *51* | *51* | *50.7* | *50.4* | *49.8* | *51* | *51* | *50.7* | *50.4* | *49.8* |
| 40E | *66* | *68* | *68* | *68* | *67* | *66* | *68* | *68* | *68* | *67* | 66 |
| 50E | *82* | *85* | *85* | *85* | *84* | *83* | *85* | *85* | *85* | *84* | *83* |
| 65E | *107* | *110* | *110* | *110* | *109* | *108* | *110* | *110* | *110* | *109* | *108* |
| 80E | *132* | *136* | *136* | *135* | *134* | *133* | *136* | *136* | *135* | *134* | *133* |
| 100E | 162 | 168 | 167 | 166 | 165 | 164 | 170 | 170 | 169 | 168 | 166 |
| 125E | 177 | 202 | 196 | 187 | 182 | 180 | 212 | 210 | 207 | 202 | 200 |
| 150E | 204 | 232 | 225 | 216 | 210 | 207 | 244 | 236 | 228 | 222 | 219 |
| 175E | 227 | 262 | 250 | 240 | 234 | 230 | 280 | 272 | 262 | 255 | 252 |
| 200E | 248 | 286 | 276 | 262 | 256 | 252 | 308 | 302 | 292 | 288 | 284 |
| 250E | 262 | 302 | 290 | 277 | 270 | 267 | 344 | 327 | 314 | 308 | 305 |

**Table 8. SMD-2C Fuse Units—34.5 and 46 kV**
**S&C Standard Speed (TCC No. 153-1)**

| Rating Amperes | Peak-Load Capability, Amperes | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Continuous | Daily | | | | | Emergency | | | | |
| Time, Hours → | | ½ | 1 | 2 | 4 | 8 | ½ | 1 | 2 | 4 | 8 |
| 5E | *8.2* | *8.5* | *8.5* | 8.4 | *8.4* | *8.3* | *8.5* | *8.5* | *8.4* | *8.4* | *8.3* |
| 7E | *11.5* | *11.9* | *11.9* | *11.8* | *11.7* | *11.6* | *11.9* | *11.9* | *11.8* | *11.7* | *11.6* |
| 10E | *16.5* | *17.0* | *17.0* | *16.9* | *16.8* | *16.6* | *17.0* | *17.0* | *16.9* | *16.8* | *16.6* |
| 13E | *21.4* | *22.1* | *22.1* | *21.9* | *21.8* | *21.6* | *22.1* | *22.1* | *21.9* | *21.8* | *21.6* |
| 15E | *24.7* | *25.5* | *25.5* | *25.3* | *25.2* | *24.9* | *25.5* | *25.5* | *25.3* | *25.2* | *24.9* |
| 20E | *33.0* | *34.0* | *34.0* | *33.8* | *33.6* | *33.2* | *34.0* | *34.0* | *33.8* | *33.6* | *33.2* |
| 25E | *41.2* | *42.5* | *42.5* | *42.2* | *42.0* | *41.5* | *42.5* | *42.5* | *42.2* | *42.0* | *41.5* |
| 30E | *49.5* | *51* | *51* | *50.7* | *50.4* | *49.8* | *51* | *51* | *50.7* | *50.4* | *49.8* |
| 40E | *66* | *68* | *68* | *68* | *67* | *66* | *68* | *68* | *68* | *67* | *66* |
| 50E | *82* | *85* | *85* | *85* | *84* | *83* | *85* | *85* | *85* | *84* | *83* |
| 65E | *107* | *110* | *110* | *110* | *109* | *108* | *110* | *110* | *110* | *109* | *108* |
| 80E | *132* | *136* | *136* | *135* | *134* | *133* | *136* | *136* | *135* | *134* | *133* |
| 100E | *165* | *170* | *170* | *169* | *168* | *166* | *170* | *170* | *169* | *168* | *166* |
| 125E | 181 | 207 | 200 | 194 | 186 | 182 | 212 | 210 | 207 | 202 | 200 |
| 150E | 207 | 240 | 231 | 223 | 214 | 210 | 249 | 240 | 232 | 225 | 220 |
| 175E | 213 | 254 | 243 | 234 | 224 | 219 | 264 | 254 | 245 | 234 | 230 |
| 200E | 262 | 302 | 290 | 276 | 270 | 266 | 320 | 312 | 302 | 298 | 294 |
| 250E | 275 | 325 | 310 | 292 | 285 | 280 | 362 | 348 | 335 | 327 | 322 |
| 300E | 300 | 360 | 342 | 321 | 315 | 309 | 408 | 390 | 369 | 360 | 354 |

**Table 9. SMD-2C Fuse Units—34.5 and 46 kV**
**S&C Slow Speed (TCC No. 119-1)**

| Rating Amperes | Peak-Load Capability, Amperes | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Continuous | Daily | | | | | Emergency | | | | |
| Time, Hours → | | ½ | 1 | 2 | 4 | 8 | ½ | 1 | 2 | 4 | 8 |
| 15E | *24.7* | *25.5* | *25.5* | 25.3 | *25.2* | *24.9* | *25.5* | *25.5* | *25.3* | *25.2* | *24.9* |
| 20E | *33.0* | *34.0* | *34.0* | *33.8* | *33.6* | *33.2* | *34.0* | *34.0* | *33.8* | *33.6* | *33.2* |
| 25E | *41.2* | *42.5* | *42.5* | *42.2* | *42.0* | *41.5* | *42.5* | *42.5* | *42.2* | *42.0* | *41.5* |
| 30E | *49.5* | *51* | *51* | *50.7* | *50.4* | *49.8* | *51* | *51* | *50.7* | *50.4* | *49.8* |
| 40E | *66* | *68* | *68* | *68* | *67* | *66* | *68* | *68* | *68* | *67* | *66* |
| 50E | *82* | *85* | *85* | *85* | *84* | *83* | *85* | *85* | *85* | *84* | *83* |
| 65E | *107* | *110* | *110* | *110* | *109* | *108* | *110* | *110* | *110* | *109* | *108* |
| 80E | *132* | *136* | *136* | *135* | *134* | *133* | *136* | *136* | *135* | *134* | *133* |
| 100E | *165* | *170* | *170* | *169* | *168* | *166* | *170* | *170* | *169* | *168* | *166* |
| 125E | 181 | 207 | 200 | 194 | 186 | 182 | 212 | 210 | 207 | 202 | 200 |
| 150E | 213 | 242 | 235 | 225 | 219 | 216 | 255 | 252 | 249 | 243 | 240 |
| 175E | 241 | 274 | 266 | 255 | 248 | 245 | 288 | 280 | 269 | 262 | 259 |
| 200E | 262 | 302 | 290 | 276 | 270 | 266 | 320 | 312 | 302 | 298 | 294 |
| 250E | 275 | 325 | 308 | 292 | 285 | 280 | 362 | 348 | 335 | 328 | 322 |
| 300E | 300 | 360 | 342 | 324 | 315 | 308 | 405 | 390 | 369 | 360 | 354 |

**Table 10. SMD-2C Fuse Units–34.5 and 46 kV**
**S&C Very Slow Speed (TCC No. 176-1)**

| Rating Amperes | Peak-Load Capability, Amperes | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Continuous | Daily | | | | | Emergency | | | | |
| Time, Hours → | | ½ | 1 | 2 | 4 | 8 | ½ | 1 | 2 | 4 | 8 |
| 50E | *82* | *85* | *85* | *85* | *84* | *83* | *85* | *85* | *85* | *84* | *83* |
| 65E | *107* | *110* | *110* | *110* | *109* | *108* | *110* | *110* | *110* | *109* | *108* |
| 80E | *132* | *136* | *136* | *135* | *134* | *133* | *136* | *136* | *135* | *134* | *133* |
| 100E | *165* | *170* | *170* | *169* | *168* | *166* | *170* | *170* | *169* | *168* | *166* |
| 125E | 202 | 210 | 208 | 207 | 206 | 204 | 212 | 212 | 211 | 210 | 207 |
| 150E | 213 | 242 | 235 | 225 | 219 | 216 | 255 | 252 | 249 | 243 | 240 |
| 175E | 241 | 274 | 266 | 255 | 248 | 245 | 288 | 280 | 269 | 262 | 259 |
| 200E | 262 | 302 | 290 | 276 | 270 | 266 | 320 | 312 | 302 | 298 | 294 |
| 250E | 275 | 325 | 308 | 292 | 285 | 280 | 362 | 348 | 335 | 328 | 322 |

**Table 11. SMD-3 Fuse Units–69 kV**
**S&C Standard, Slow, and Very Slow Speeds (TCC No. 153-1, 119-1, and 176-1)**

| Rating Amperes | Peak-Load Capability, Amperes | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Continuous | Daily | | | | | Emergency | | | | |
| Time, Hours → | | ½ | 1 | 2 | 4 | 8 | ½ | 1 | 2 | 4 | 8 |
| 5E | *8.2* | *8.5* | *8.5* | 8.4 | *8.4* | *8.3* | *8.5* | *8.5* | *8.4* | *8.4* | *8.3* |
| 7E | *11.5* | *11.9* | *11.9* | *11.8* | *11.7* | *11.6* | *11.9* | *11.9* | *11.8* | *11.7* | *11.6* |
| 10E | *16.5* | *17.0* | *17.0* | *16.9* | *16.8* | *16.6* | *17.0* | *17.0* | *16.9* | *16.8* | *16.6* |
| 13E | *21.4* | *22.1* | *22.1* | *21.9* | *21.8* | *21.6* | *22.1* | *22.1* | *21.9* | *21.8* | *21.6* |
| 15E | *24.7* | *25.5* | *25.5* | *25.3* | *25.2* | *24.9* | *25.5* | *25.5* | *25.3* | *25.2* | *24.9* |
| 20E | *33.0* | *34.0* | *34.0* | *33.8* | *33.6* | *33.2* | *34.0* | *34.0* | *33.8* | *33.6* | *33.2* |
| 25E | *41.2* | *42.5* | *42.5* | *42.2* | *42.0* | *41.5* | *42.5* | *42.5* | *42.2* | *42.0* | *41.5* |
| 30E | *49.5* | *51* | *51* | *50.7* | *50.4* | *49.8* | *51* | *51* | *50.7* | *50.4* | *49.8* |
| 40E | *66* | *68* | *68* | *68* | *67* | *66* | *68* | *68* | *68* | *67* | *66* |
| 50E | *82* | *85* | *85* | *85* | *84* | *83* | *85* | *85* | *85* | *84* | *83* |
| 65E | *107* | *110* | *110* | *110* | *109* | *108* | *110* | *110* | *110* | *109* | *108* |
| 80E | *132* | *136* | *136* | *135* | *134* | *133* | *136* | *136* | *135* | *134* | *133* |
| 100E | *165* | *170* | *170* | *169* | *168* | *166* | *170* | *170* | *169* | *168* | *166* |
| 125E | 181 | 207 | 200 | 194 | 186 | 182 | 212 | 210 | 207 | 202 | 200 |
| 150E | 213 | 242 | 235 | 225 | 219 | 216 | 255 | 252 | 249 | 243 | 240 |
| 175E | 241 | 274 | 266 | 255 | 248 | 245 | 288 | 280 | 269 | 262 | 259 |
| 200E | 262 | 302 | 290 | 276 | 270 | 266 | 320 | 312 | 302 | 298 | 294 |
| 250E | 275 | 325 | 308 | 292 | 285 | 280 | 362 | 348 | 335 | 328 | 322 |
| 300E | 300 | 360 | 342 | 320 | 315 | 309 | 408 | 390 | 369 | 360 | 354 |

**Table 12. SMD-50 Fuse Units–34.5, 46, and 69 kV**
**S&C Standard and Slow Speeds (TCC No. 153-1 and 119-1)**

| Rating Amperes | Peak-Load Capability, Amperes | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Continuous | Daily | | | | | Emergency | | | | |
| Time, Hours → | | ½ | 1 | 2 | 4 | 8 | ½ | 1 | 2 | 4 | 8 |
| 5E | 7.3 | 8.0 | 7.9 | 7.8 | 7.6 | 7.5 | 8.5 | 8.5 | 8.4 | 8.3 | 8.0 |
| 7E | 10.2 | 11.2 | 11.0 | 10.8 | 10.6 | 10.5 | 11.9 | 11.9 | 11.8 | 11.5 | 11.2 |
| 10E | 14.6 | 16.0 | 15.7 | 15.5 | 15.2 | 15.0 | 17.0 | 17.0 | 16.8 | 16.5 | 16.0 |
| 13E | 19.0 | 20.8 | 20.5 | 20.1 | 19.7 | 19.5 | 22.1 | 22.1 | 20.9 | 21.5 | 20.8 |
| 15E | 21.9 | 24.0 | 23.6 | 23.2 | 22.8 | 22.5 | 25.5 | 25.5 | 25.3 | 24.7 | 24.0 |
| 20E | 29.2 | 32.0 | 31.4 | 31.0 | 30.4 | 30.0 | 34.0 | 34.0 | 33.7 | 33.0 | 32.0 |
| 25E | 36.5 | 40.0 | 39.4 | 38.7 | 38.0 | 37.5 | 42.5 | 42.5 | 42.2 | 41.3 | 40.0 |
| 30E | 43.7 | 48.0 | 47.2 | 46.5 | 45.7 | 45.0 | 51 | 51 | 50.6 | 49.5 | 48.0 |
| 40E | 58 | 64 | 63 | 62 | 61 | 60 | 68 | 68 | 67 | 66 | 64 |
| 50E | 73 | 80 | 79 | 78 | 76 | 75 | 85 | 85 | 85 | 83 | 80 |
| 65E | 83 | 91 | 89 | 87 | 86 | 85 | 104 | 99 | 96 | 94 | 91 |
| 80E | 102 | 112 | 109 | 107 | 106 | 104 | 128 | 122 | 118 | 115 | 112 |
| 100E | 128 | 140 | 136 | 133 | 132 | 130 | 160 | 152 | 148 | 144 | 140 |

In accordance with procedures described in IEEE Standard C37.41, minimum melting time-current characteristic curves for S&C power fuses are based on tests starting with the fuse at an ambient temperature of 25°C (77°F) and no initial load. When in service, of course, fuses may operate in an ambient temperature other than 25°C (77°F). This difference in ambient temperature will affect the melting time of the fuse slightly. For typical coordination requirements, this shift in melting time caused by high or low ambient temperatures may be ignored. Nonetheless, where temperature ranges are extreme, it may be desirable to consider the actual shift in the fuses' melting time. The ambient temperature adjustment factors are shown in Figure 2.

These ambient temperature adjustment factors are to be used with S&C power fuses only because the derivation of these factors is dependent upon the construction of the fusible elements.

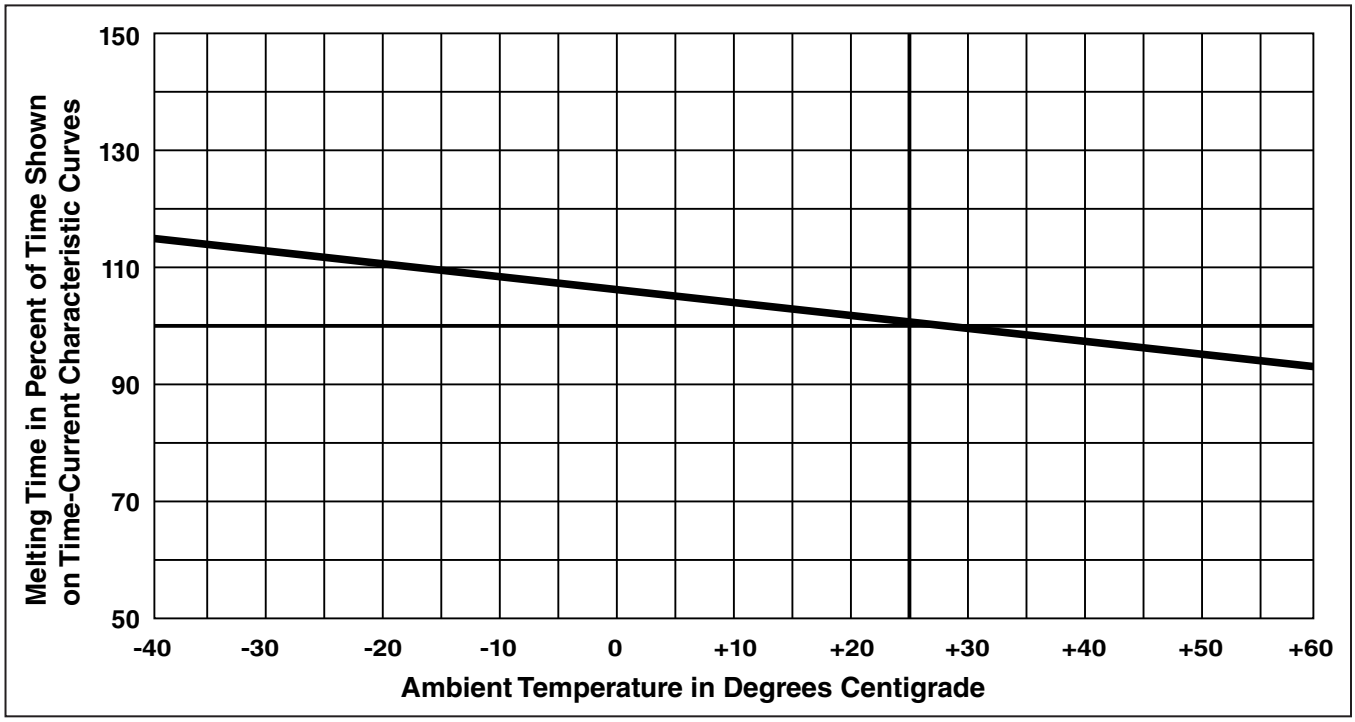


**Figure 2. Ambient temperature adjustment factors.**