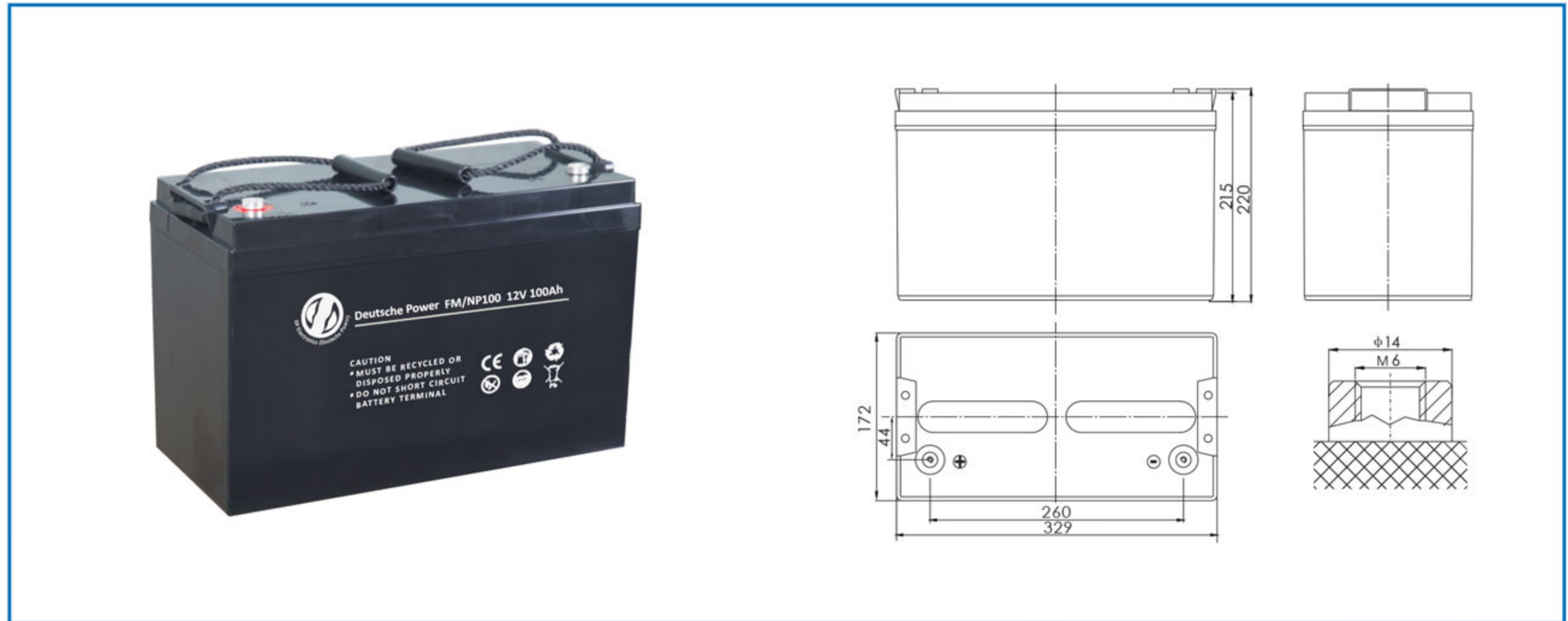


6-FM/NP100

FM/NP Battery Series (General Use Battery)



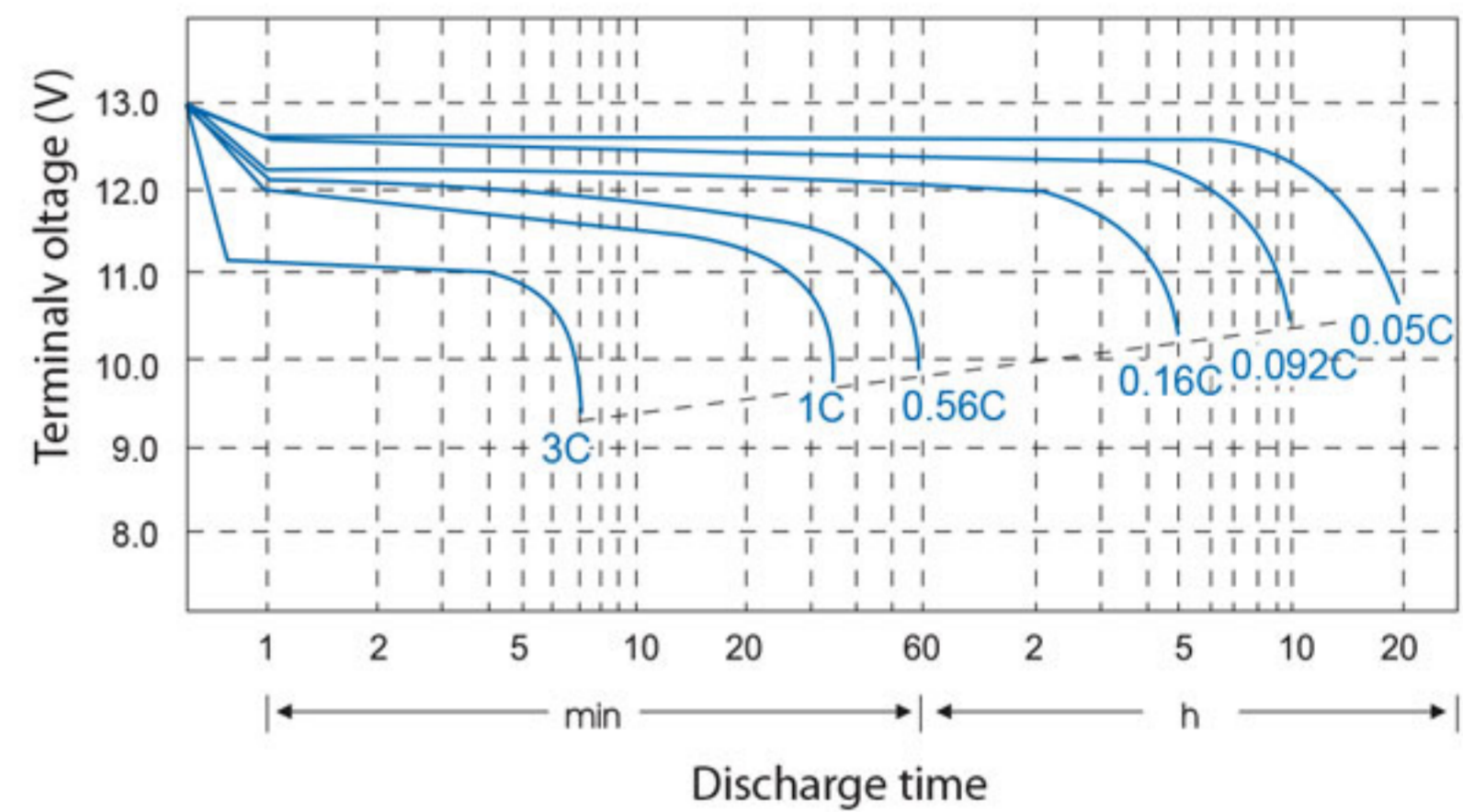
Specifications

| | | |
|-------------------------------|-------------------------------|---------------------|
| Nominal Voltage | 12V | |
| Rated Capacity (20 hour rate) | 100Ah | |
| Dimensions | Total Height (with terminals) | 8.66 inches(220mm) |
| | Height | 8.46 inches(215mm) |
| | length | 12.95 inches(329mm) |
| | width | 6.77 inches(172mm) |
| Weight | Approx.60.94 Pound(27.7kg) | |

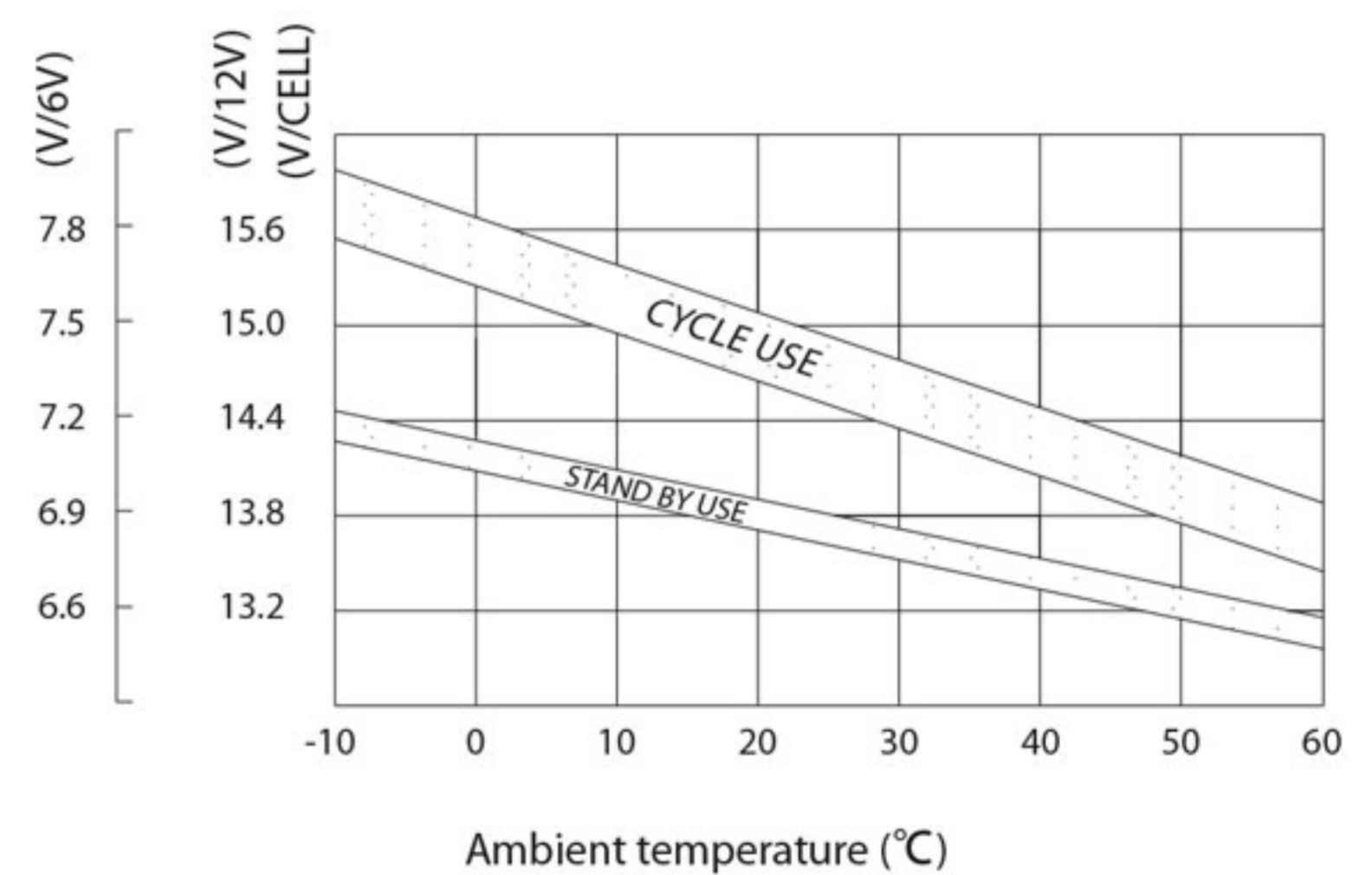
Characteristics

| | | |
|---|-------------------------------------|---|
| Capacity 77°F (25°C) | 20 hour rate (5.0A) | 100 Ah |
| | 10 hour rate (9.2A) | 92 Ah |
| | 5 hour rate (16.0A) | 80 Ah |
| | 1hour rate (60.0A) | 60 Ah |
| | 15Minute Rate (164A) | 41 Ah |
| Internal Resistance | Full charged Battery 77°F (25°C) | 5 MΩ |
| | 104°F (40°C) | 102% |
| Capacity affected by Temperature (20hour rate) | 77°F (25°C) | 100% |
| | °F (0°C) | 85% |
| | 5°F (-15°C) | 65% |
| Self-Discharge 77°F (25°C) | Capacity after 3 month storage | 91% |
| | Capacity after 6 month storage | 81% |
| | Capacity after 12 month storage | 60% |
| Max. Discharge Current 77°F (25°C) | 800A(5S) | |
| Terminal | M2 | |
| Charge (Constant Voltage) | Cycle | Initial Charging Current less than 30A Voltage 14.4~14.7 V / 77°F (25°C) |
| | Float | Voltage 13.5~13.8 V / 77°F (25°C) |

Discharge Curves 77°F (25°C)



Relationship between charge voltage and temperature



Constant Current Discharge (AMPERES @25°C)

| F.V/Time | 5Min | 10Min | 15Min | 30Min | 60Min | 2H | 3H | 4H | 5H | 10H | 20H |
|----------|------|-------|-------|-------|-------|------|------|------|------|------|------|
| 1.65 | 311 | 217 | 168 | 102 | 80.1 | 54.2 | 37.8 | 26.1 | 17.5 | 9.80 | 4.33 |
| 1.70 | 285 | 205 | 157 | 86.8 | 75.7 | 51.9 | 36.9 | 25.0 | 16.9 | 9.59 | 4.25 |
| 1.80 | 227 | 173 | 137 | 78.4 | 71.5 | 49.4 | 35.3 | 23.6 | 16.0 | 9.20 | 4.18 |

Constant Power Discharge (WATTS PER CELL@25°C)

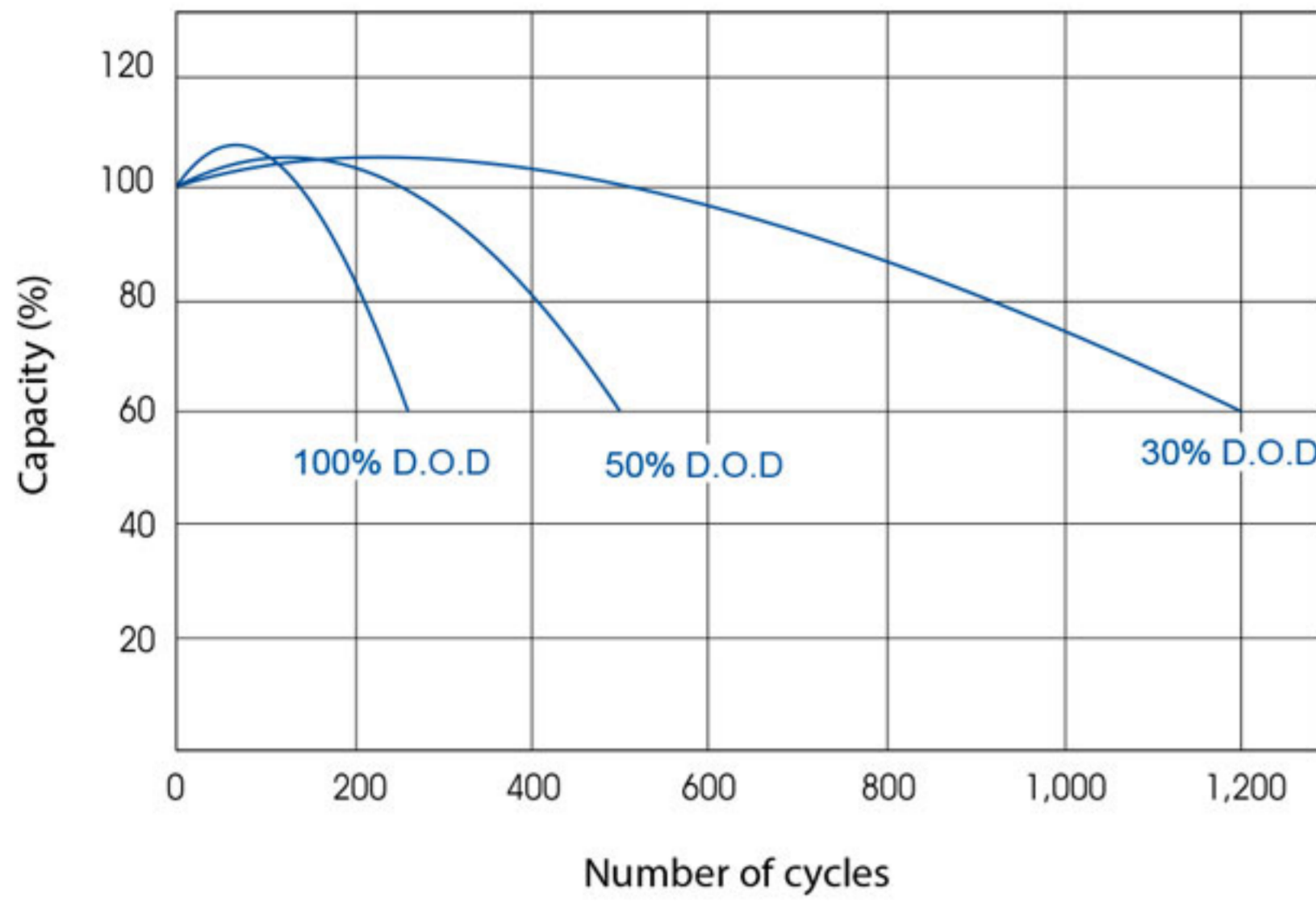
| Cut off voltage V/cell | 5min | 10min | 15min | 30min | 45min | 1h | 2h | 3h | 5h | 10h | 24h |
|------------------------|------|-------|-------|-------|-------|-----|------|------|------|------|------|
| 1.60 | 571 | 394 | 307 | 191 | 148 | 119 | 70.0 | 49.1 | 32.4 | 18.3 | 8.11 |
| 1.65 | 542 | 389 | 304 | 185 | 146 | 115 | 69.1 | 49.0 | 32.2 | 18.2 | 8.10 |
| 1.67 | 540 | 386 | 302 | 173 | 144 | 114 | 68.8 | 48.6 | 31.9 | 18.2 | 8.09 |
| 1.70 | 506 | 379 | 291 | 162 | 142 | 111 | 68.4 | 47.7 | 31.6 | 18.1 | 8.07 |
| 1.75 | 461 | 346 | 274 | 156 | 141 | 108 | 67.9 | 46.4 | 31.0 | 18.0 | 8.06 |
| 1.80 | 423 | 330 | 264 | 151 | 138 | 107 | 66.6 | 46.1 | 30.5 | 17.7 | 8.04 |
| 1.85 | 339 | 273 | 231 | 141 | 127 | 104 | 64.2 | 45.0 | 29.5 | 16.9 | 7.62 |

6-FM/NP100

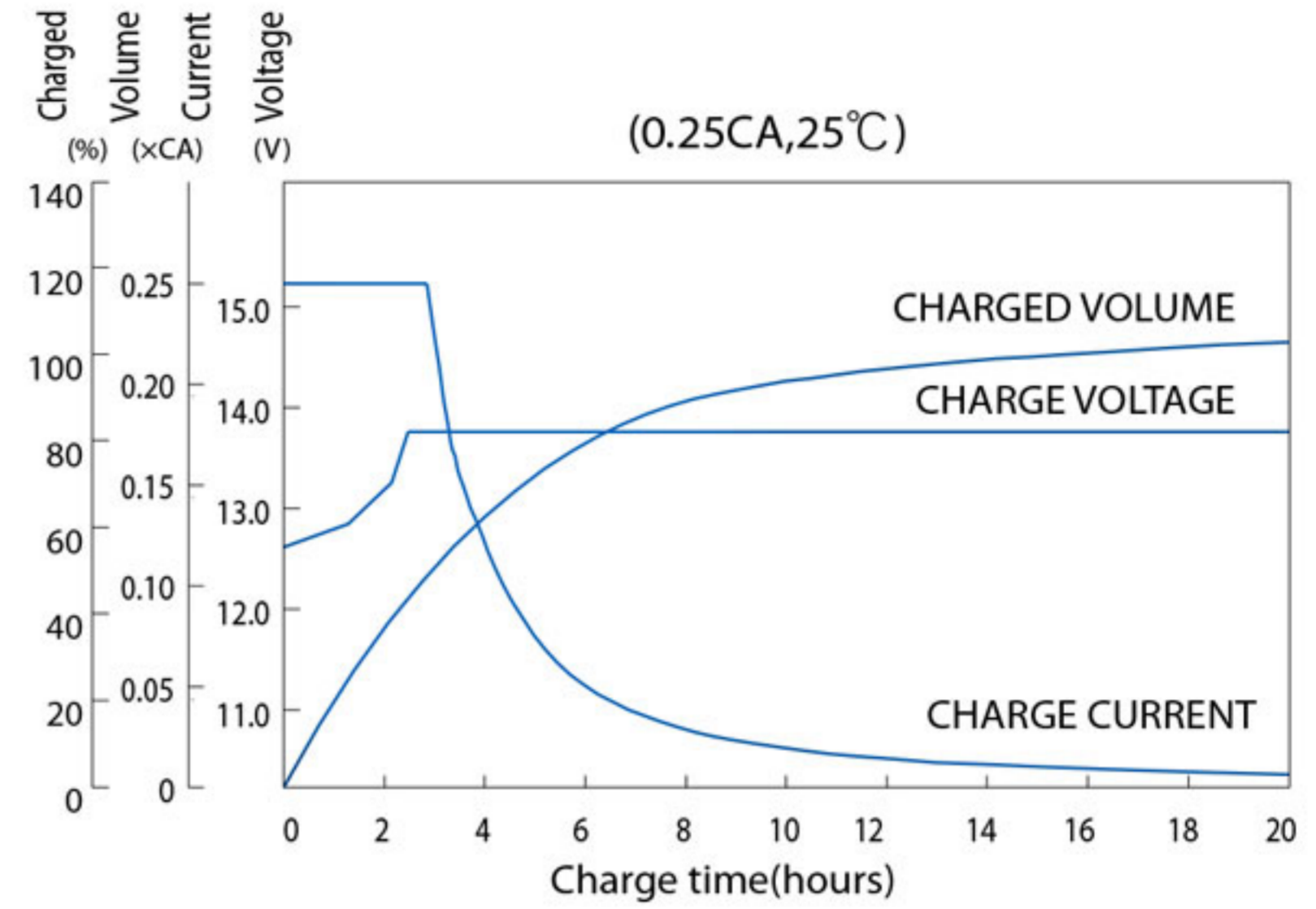
FM/NP Battery Series (General Use Battery)

The operating environment temperature above 40°C should be avoided, After long term storage, The battery actual capacity would be less than the rated capacity. Full capacity will be obtained through several charge/discharge cycles. To get the longest life, Deutsche Power battery should be fully charged before storage

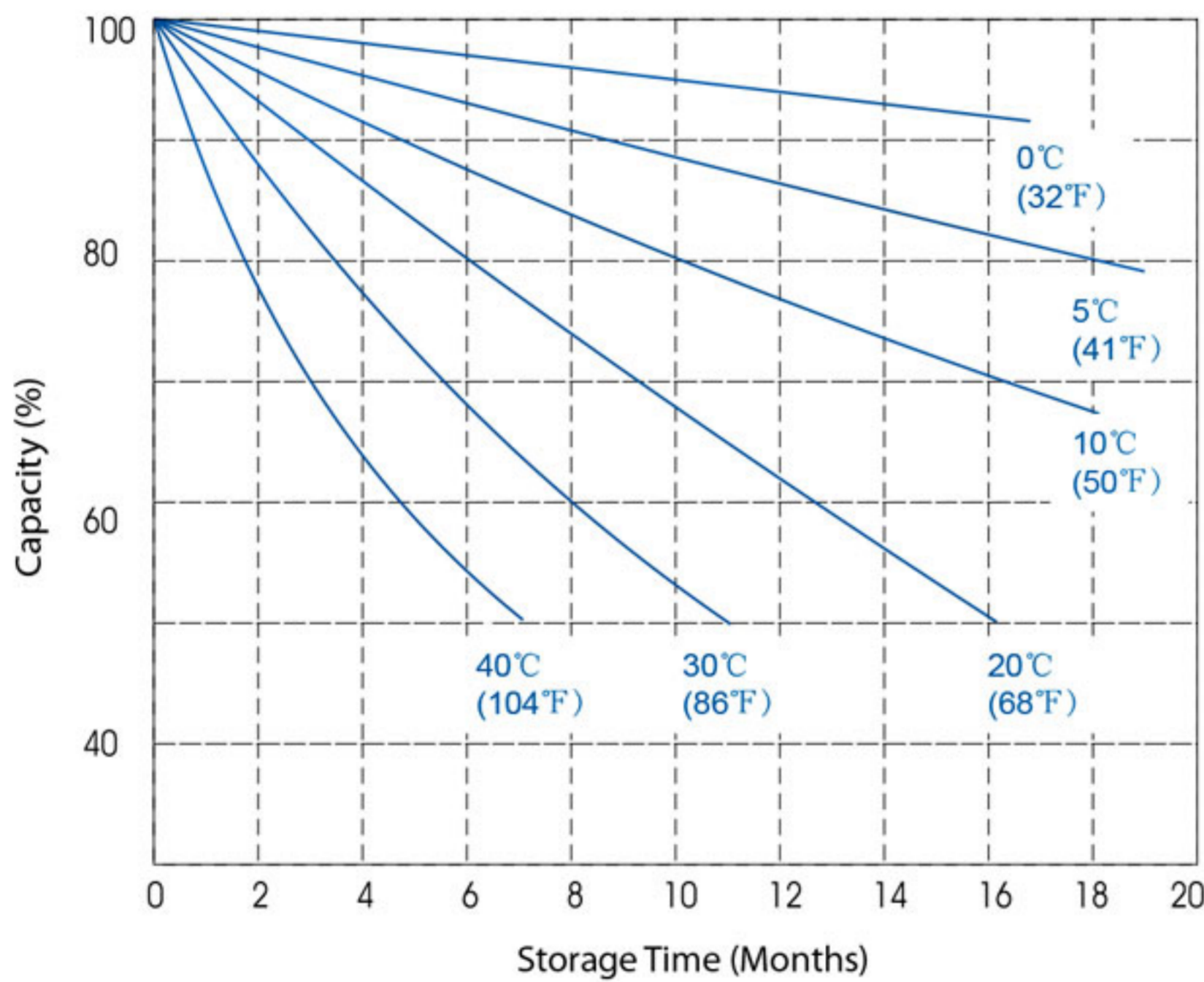
Cycle service life in relation to depth of discharge



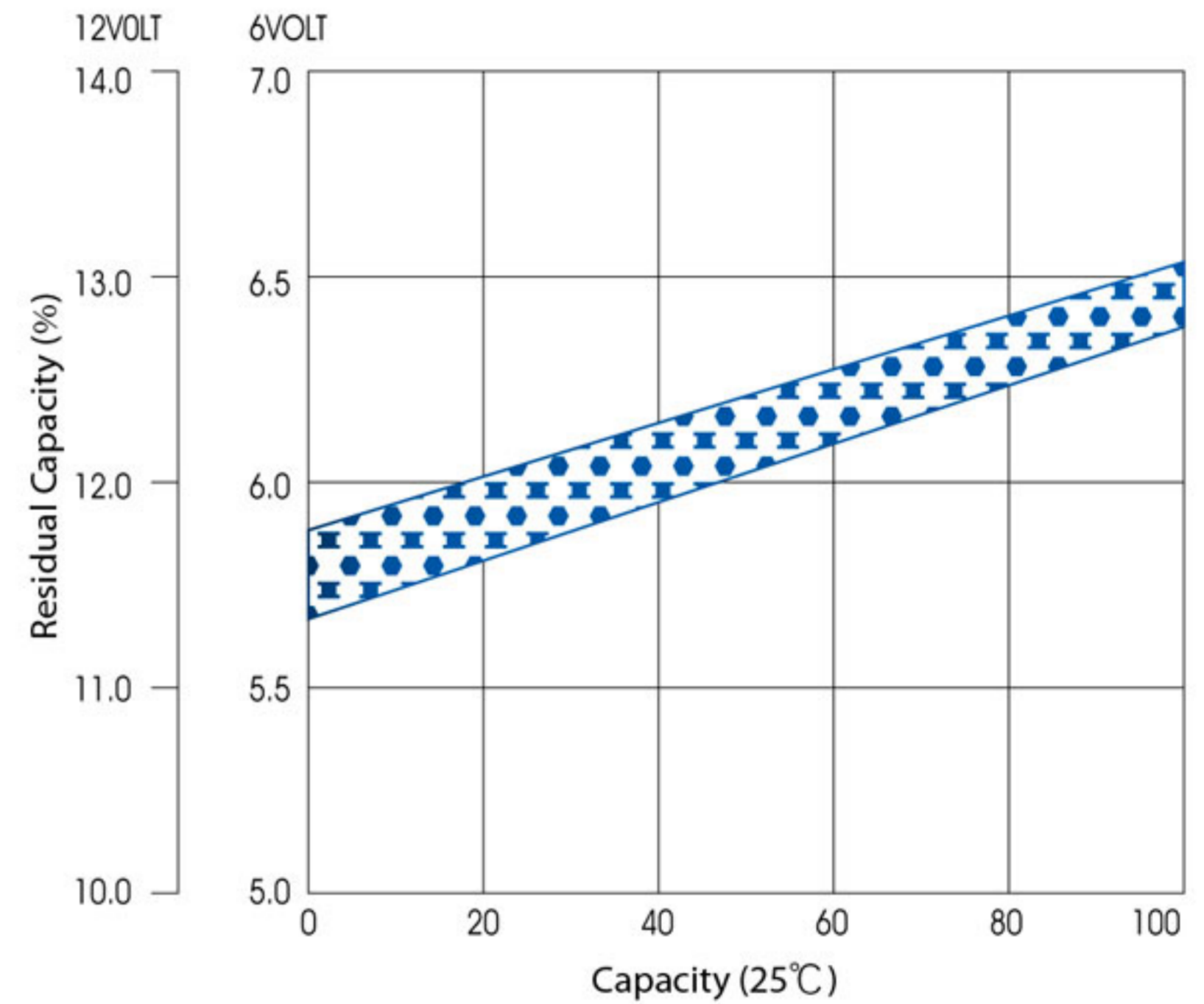
Constant voltage charge characteristic



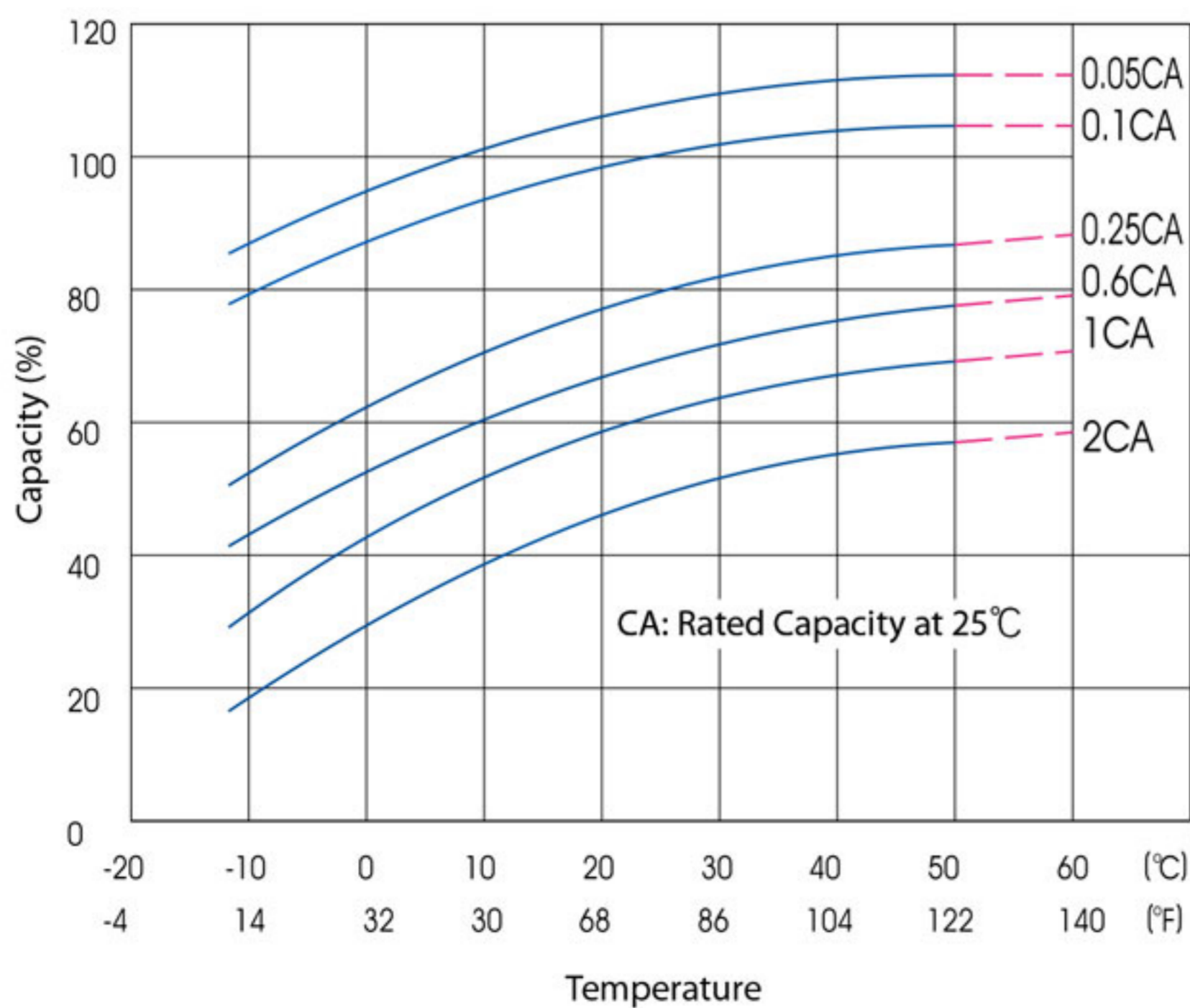
Self-Discharge Characteristics



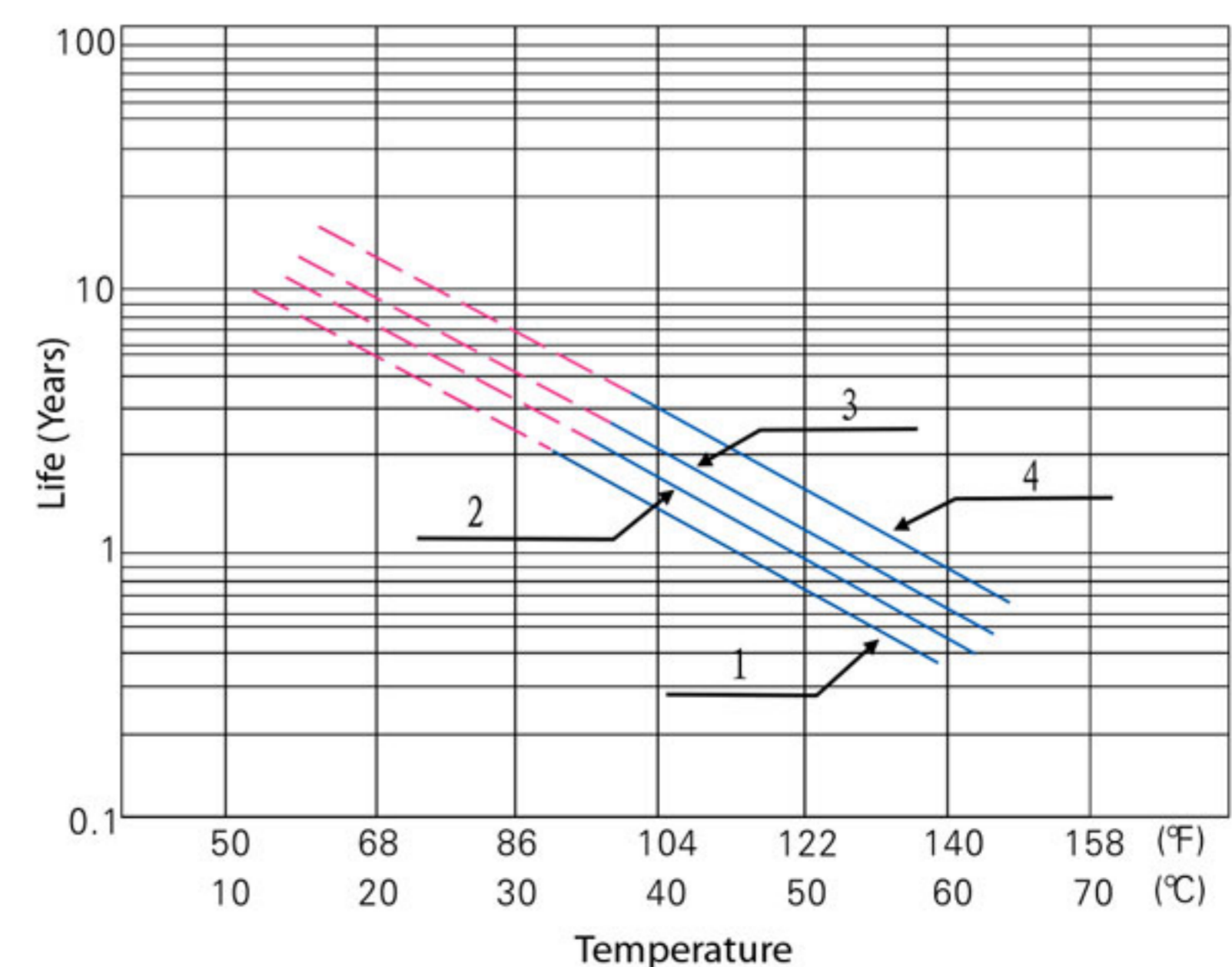
Relationship of OCV and Residual Capacity % (25°C)



Temperature effects on capacity

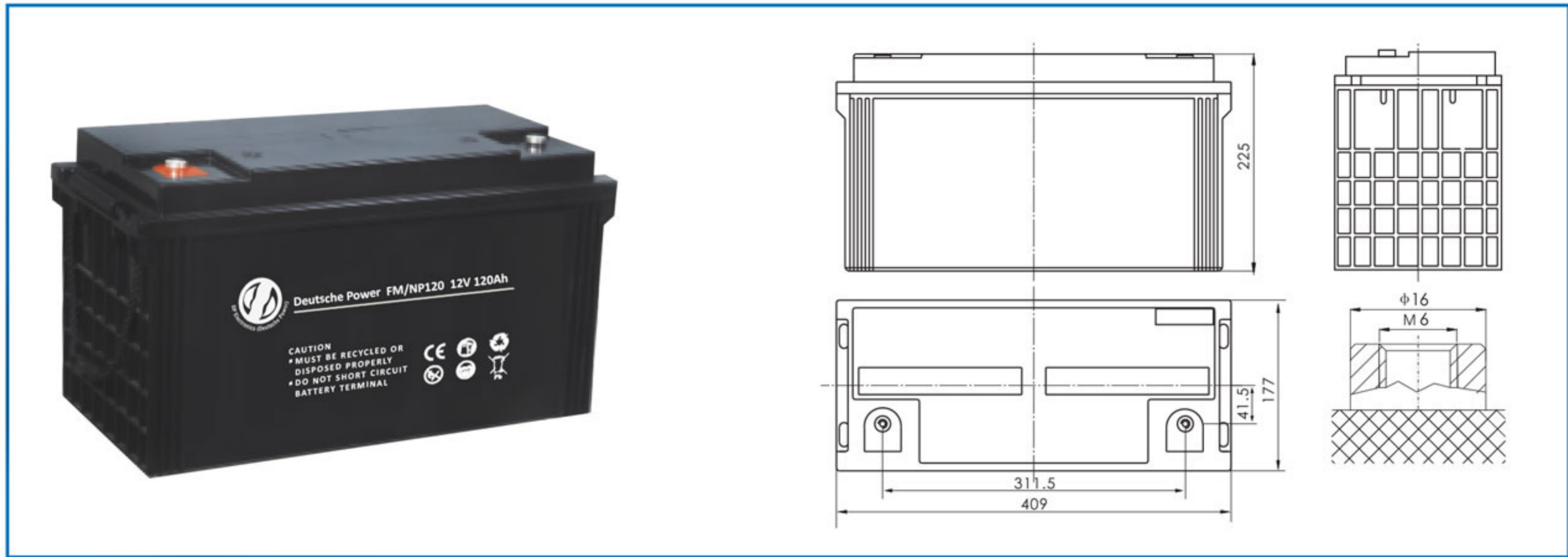


Temperature effects float life



6-FM/NP120

FM/NP Battery Series (General Use Battery)



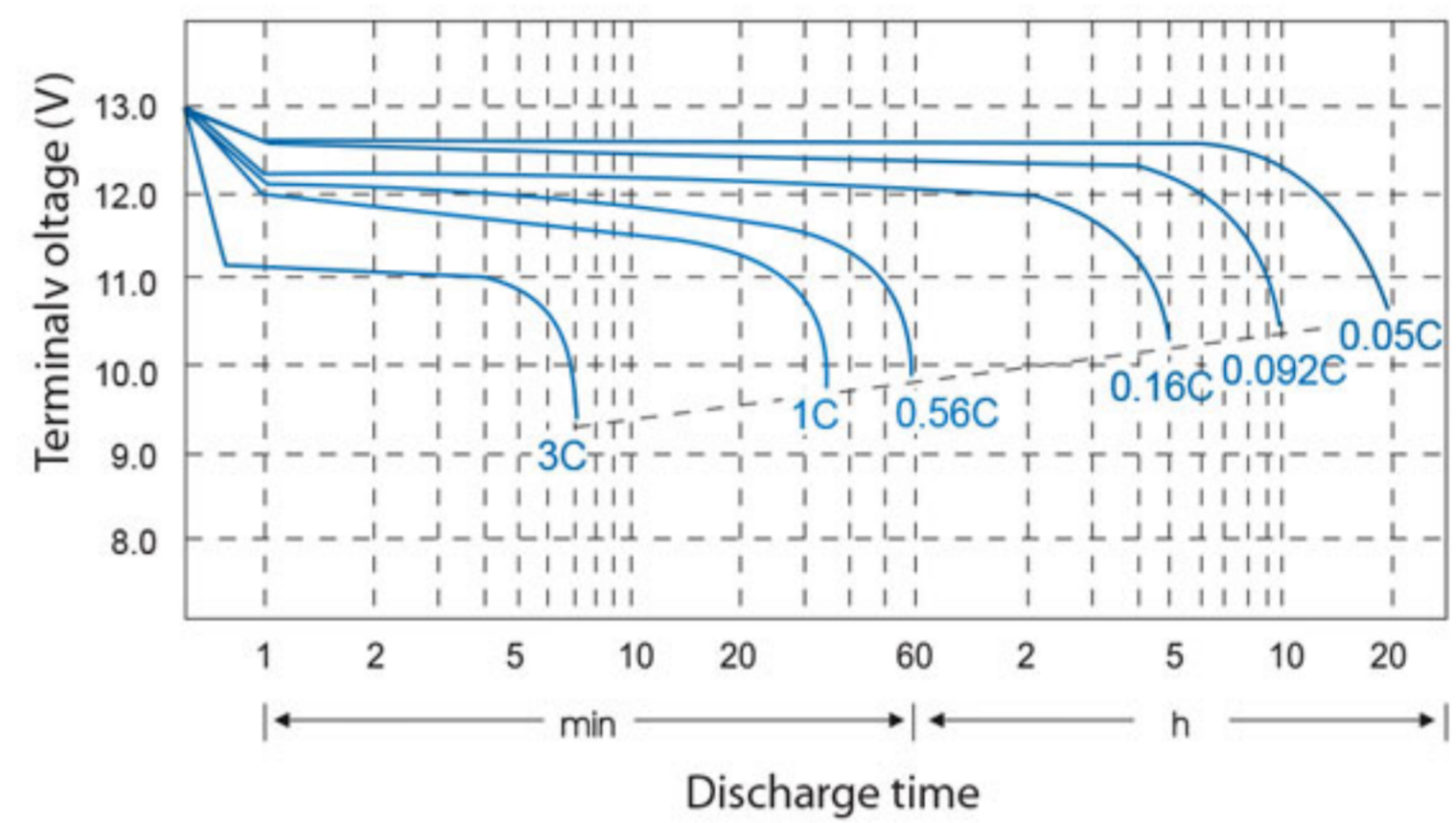
Specifications

| | | |
|------------------------------|-------------------------------|-----------------------------|
| Nominal Voltage | | 12V |
| Rated Capacity(20 hour rate) | | 120Ah |
| Dimensions | Total Height (with terminals) | 9.29inches (236mm) |
| | Height | 8.19inches (208mm) |
| | Length | 16.02inches (407mm) |
| | Width | 6.85inches (174mm) |
| Weight | | Approx. 77.0 pound(35.0 kg) |

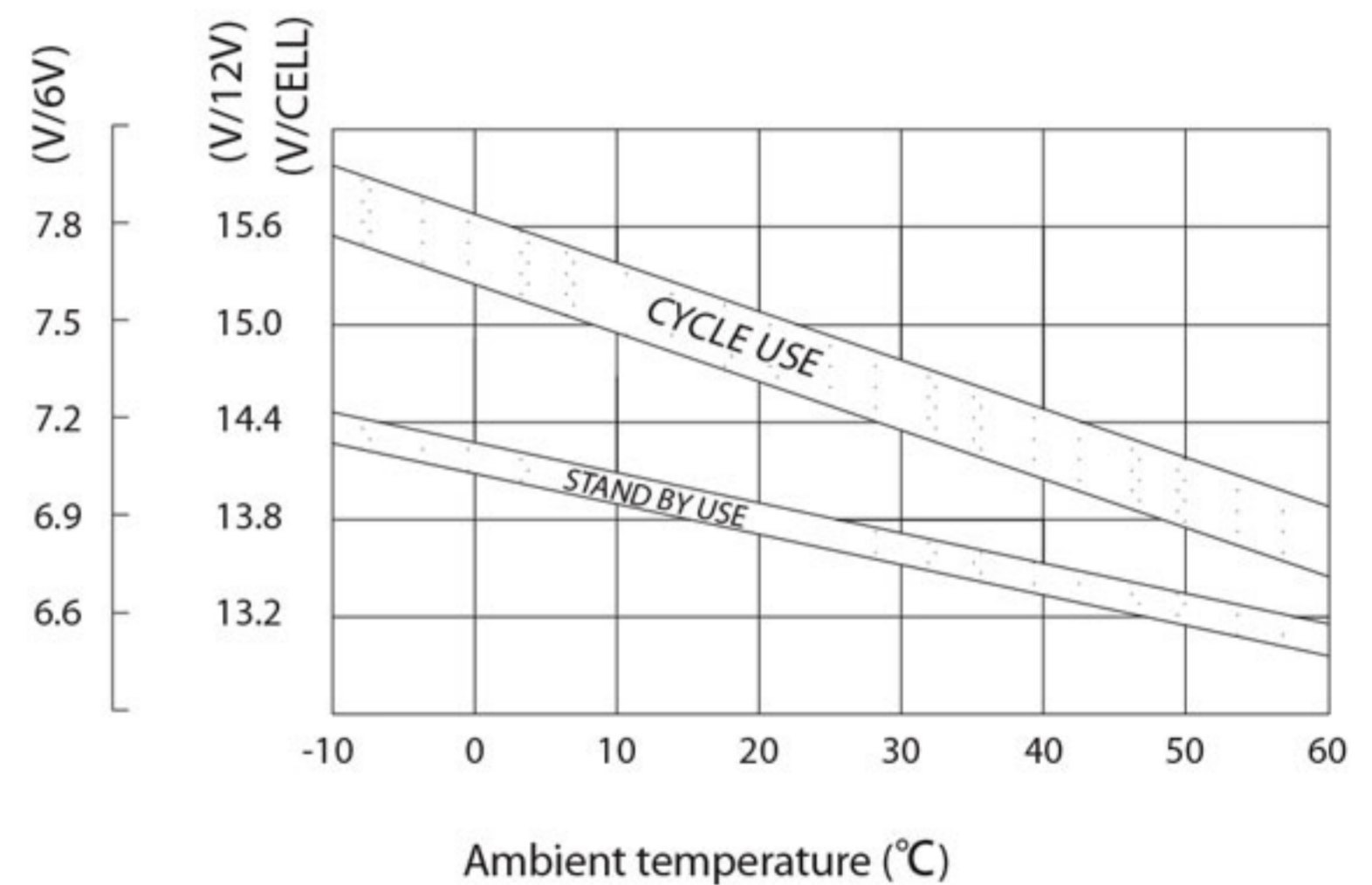
Characteristics

| | | |
|--|---------------------------------|--|
| Capacity 77°F(25°C) | 20 hour rate (6.0A) | 120Ah |
| | 10 hour rate (11A) | 110Ah |
| | 5 hour rate (19.2A) | 96Ah |
| | 1 hour rate (72A) | 72Ah |
| | 15 minute Rate(196.8A) | 49.2Ah |
| Internal Resistance | Full charged Battery 77°F(25°C) | 4.0mΩ |
| Capacity affected by Temperature (20 hour rate) | 104°F(40°C) | 102% |
| | 77°F(25°C) | 100% |
| | 32°F(0°C) | 85% |
| | 5°F(-15°C) | 65% |
| Self-Discharge 77°F(20°C) | Capacity after 3 month storage | 91% |
| | Capacity after 6 month storage | 81% |
| | Capacity after 12 month storage | 60% |
| Max. Discharge Current 77°F(25°C) | 960A(5S) | |
| Terminal | M3 | |
| Charge (Constant Voltage) | Cycle | Initial Charging Current less than 36A |
| | | Voltage 14.4~14.7V/77°F(25°C) |
| | Float | Voltage 13.5~13.8V/77°F(25°C) |

Discharge Curves 77°F (25°C)



Relationship between charge voltage and temperature



Constant Current Discharge (AMPERES @25°C)

| F.V/Time | 10Min | 15Min | 30Min | 45Min | 1Hour | 2Hour | 3Hour | 5Hour | 8Hour | 10Hour | 12Hour | 24Hour |
|----------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|--------|
| 1.65 | 261 | 202 | 122 | 96.1 | 65.2 | 45.3 | 31.2 | 21.0 | 14.8 | 11.7 | 10.1 | 5.20 |
| 1.70 | 246 | 189 | 104 | 90.9 | 62.4 | 44.2 | 30.0 | 20.3 | 14.3 | 11.5 | 9.80 | 5.09 |
| 1.80 | 207 | 165 | 94.1 | 85.8 | 59.3 | 42.4 | 28.3 | 19.2 | 13.4 | 11.0 | 9.50 | 5.02 |

Constant Power Discharge (WATTS PER CELL@25°C)

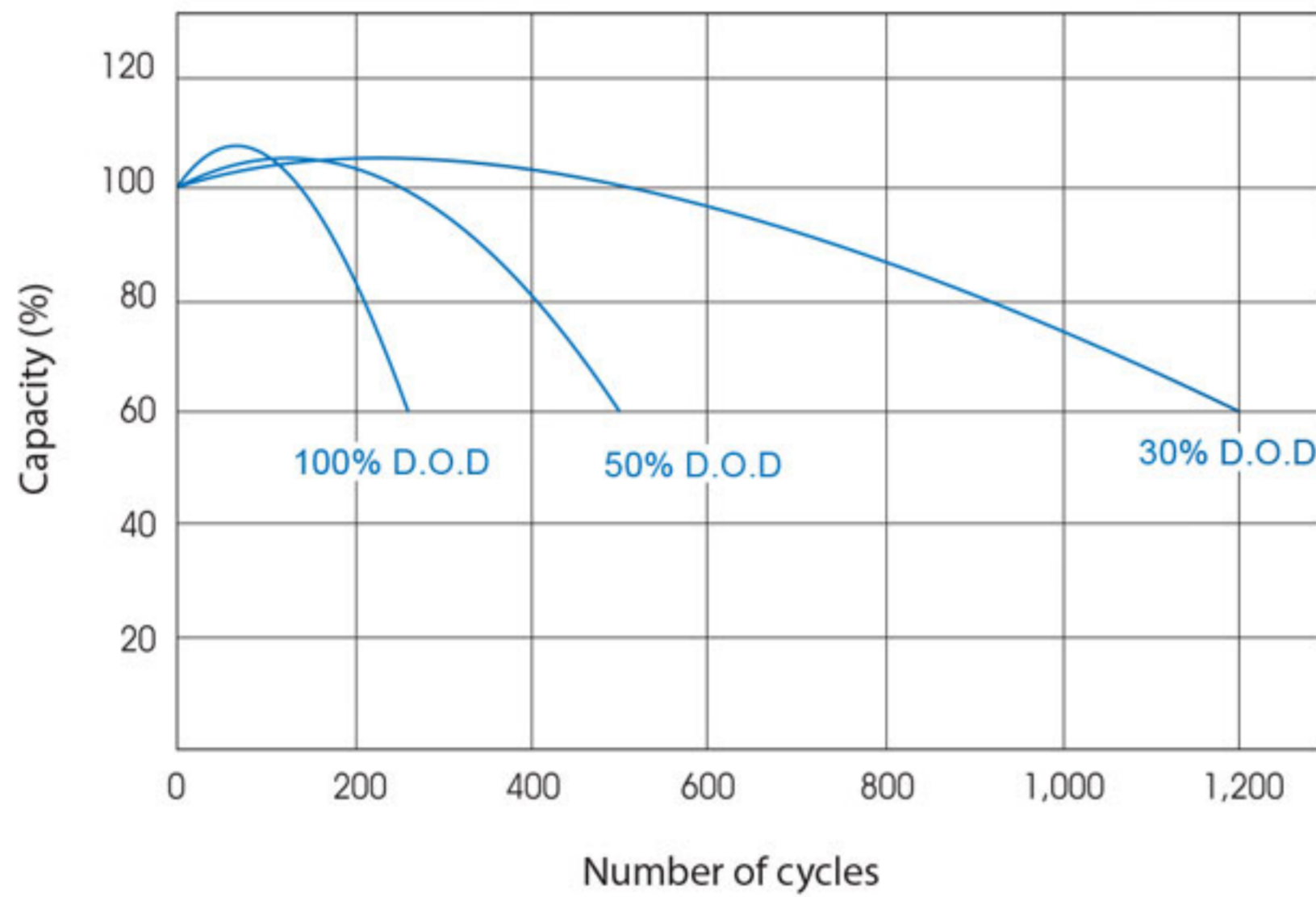
| F.V/Time | 10Min | 15Min | 30Min | 45Min | 1Hour | 2Hour | 3Hour | 5Hour | 8Hour | 10Hour | 12Hour | 24Hour |
|----------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|--------|
| 1.60 | 473 | 368 | 229 | 178 | 143 | 84.0 | 58.9 | 38.9 | 27.5 | 22.0 | 18.8 | 9.73 |
| 1.65 | 467 | 365 | 222 | 175 | 138 | 82.9 | 58.8 | 38.6 | 27.4 | 21.8 | 18.7 | 9.72 |
| 1.67 | 463 | 362 | 208 | 173 | 137 | 82.6 | 58.3 | 38.3 | 27.2 | 21.8 | 18.6 | 9.71 |
| 1.70 | 455 | 349 | 194 | 170 | 133 | 82.1 | 57.2 | 37.9 | 26.8 | 21.7 | 18.5 | 9.68 |
| 1.75 | 415 | 329 | 187 | 169 | 130 | 81.5 | 55.7 | 37.2 | 26.0 | 21.6 | 18.4 | 9.67 |
| 1.80 | 396 | 317 | 181 | 166 | 128 | 79.9 | 55.3 | 36.6 | 25.7 | 21.2 | 18.3 | 9.65 |
| 1.85 | 328 | 277 | 169 | 152 | 125 | 77.0 | 54.0 | 35.4 | 24.1 | 20.3 | 17.3 | 9.14 |

6-FM/NP120

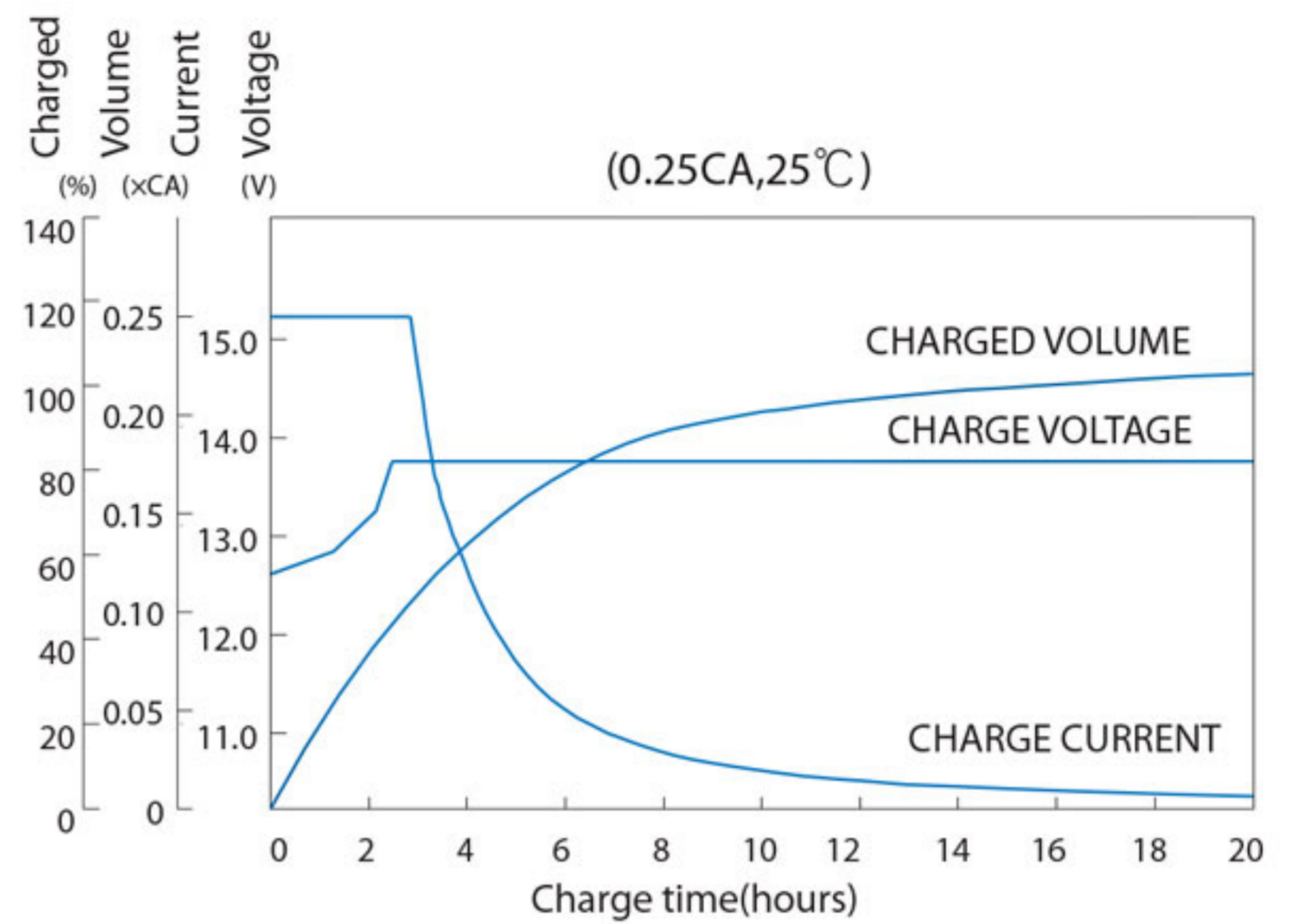
FM/NP Battery Series (General Use Battery)

The operating environment temperature above 40°C should be avoided, After long term storage, The battery actual capacity would be less than the rated capacity. Full capacity will be obtained through several charge/discharge cycles. To get the longest life, Deutsche Power battery should be fully charged before storage

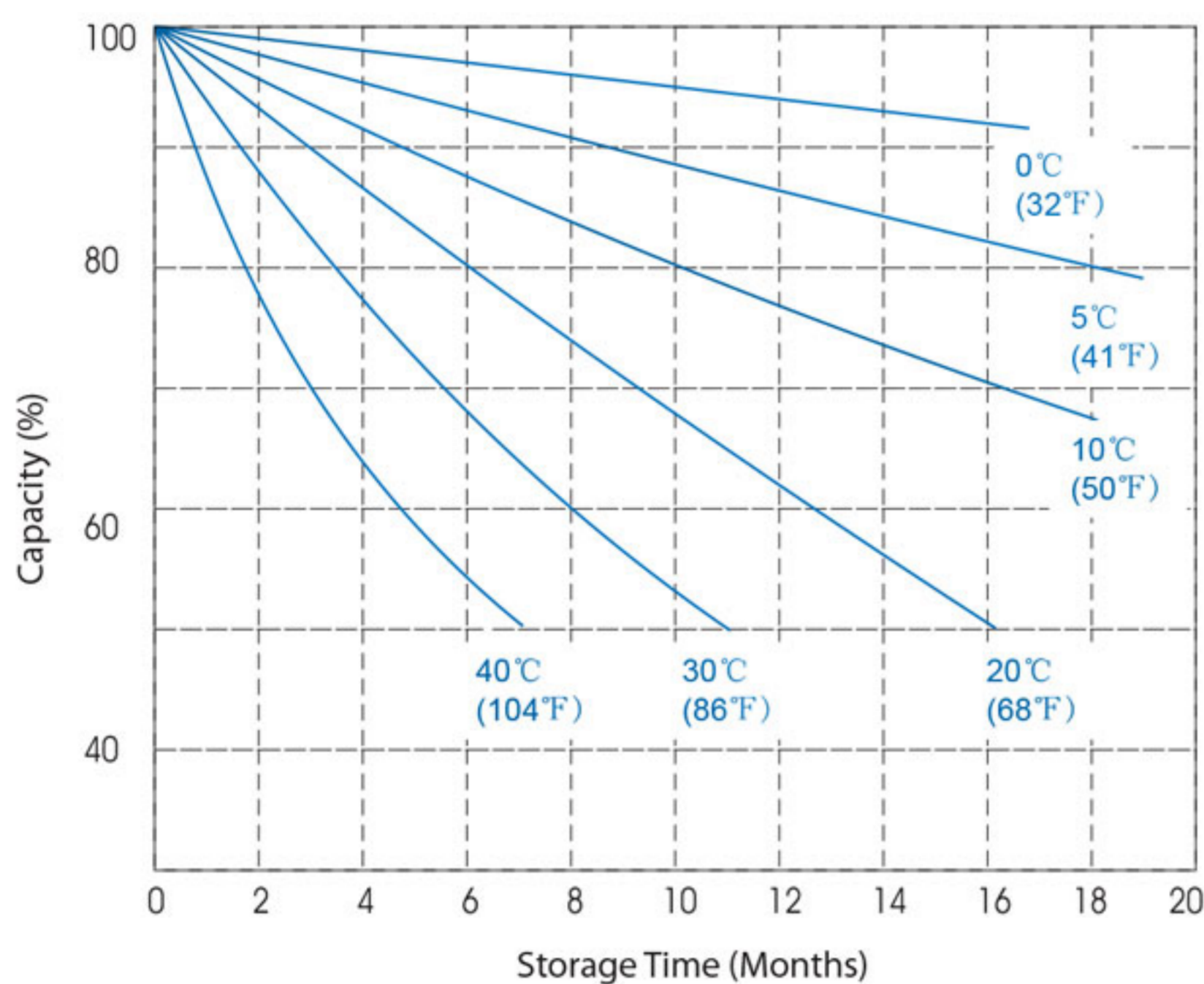
Cycle service life in relation to depth of discharge



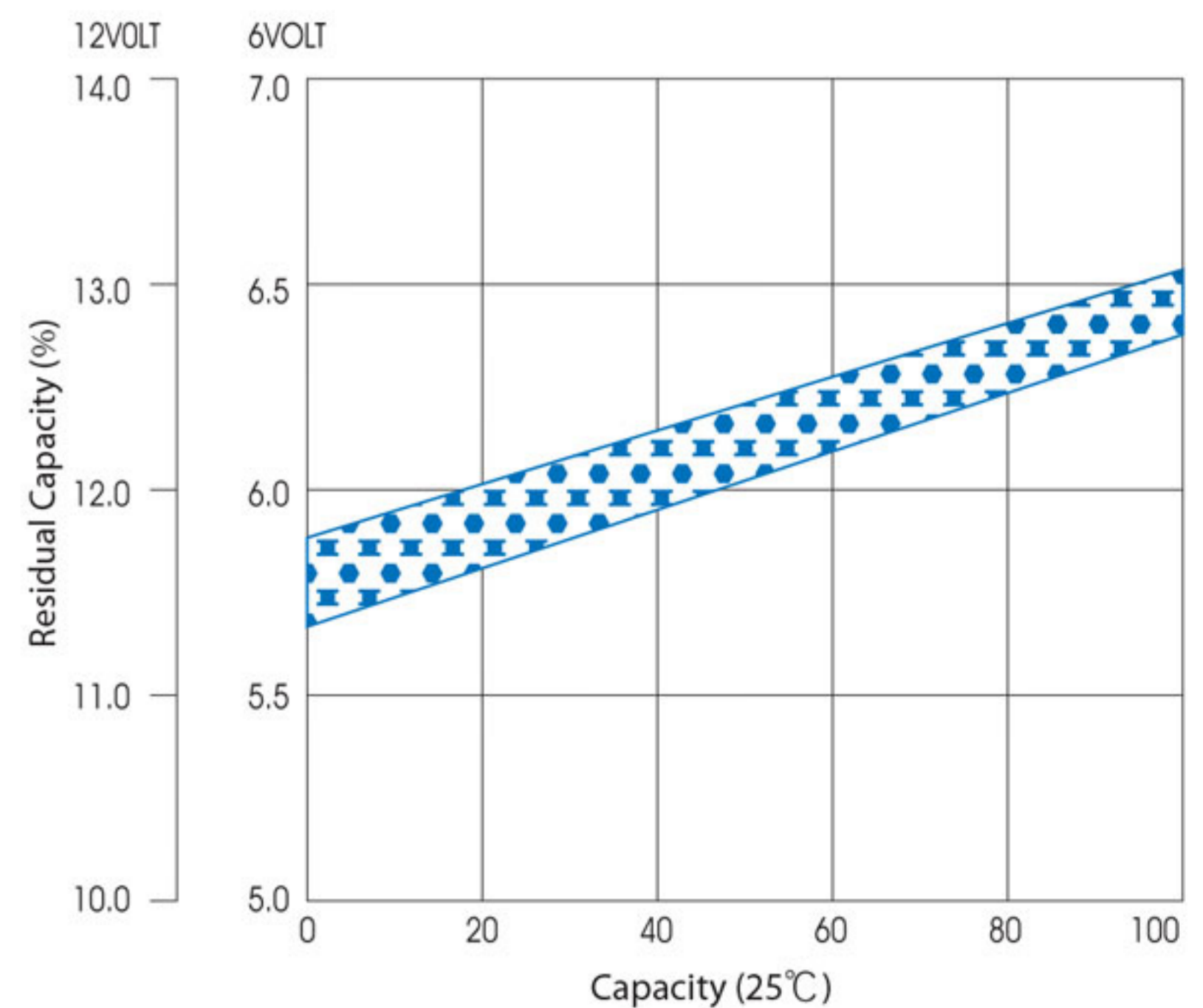
Constant voltage charge characteristic



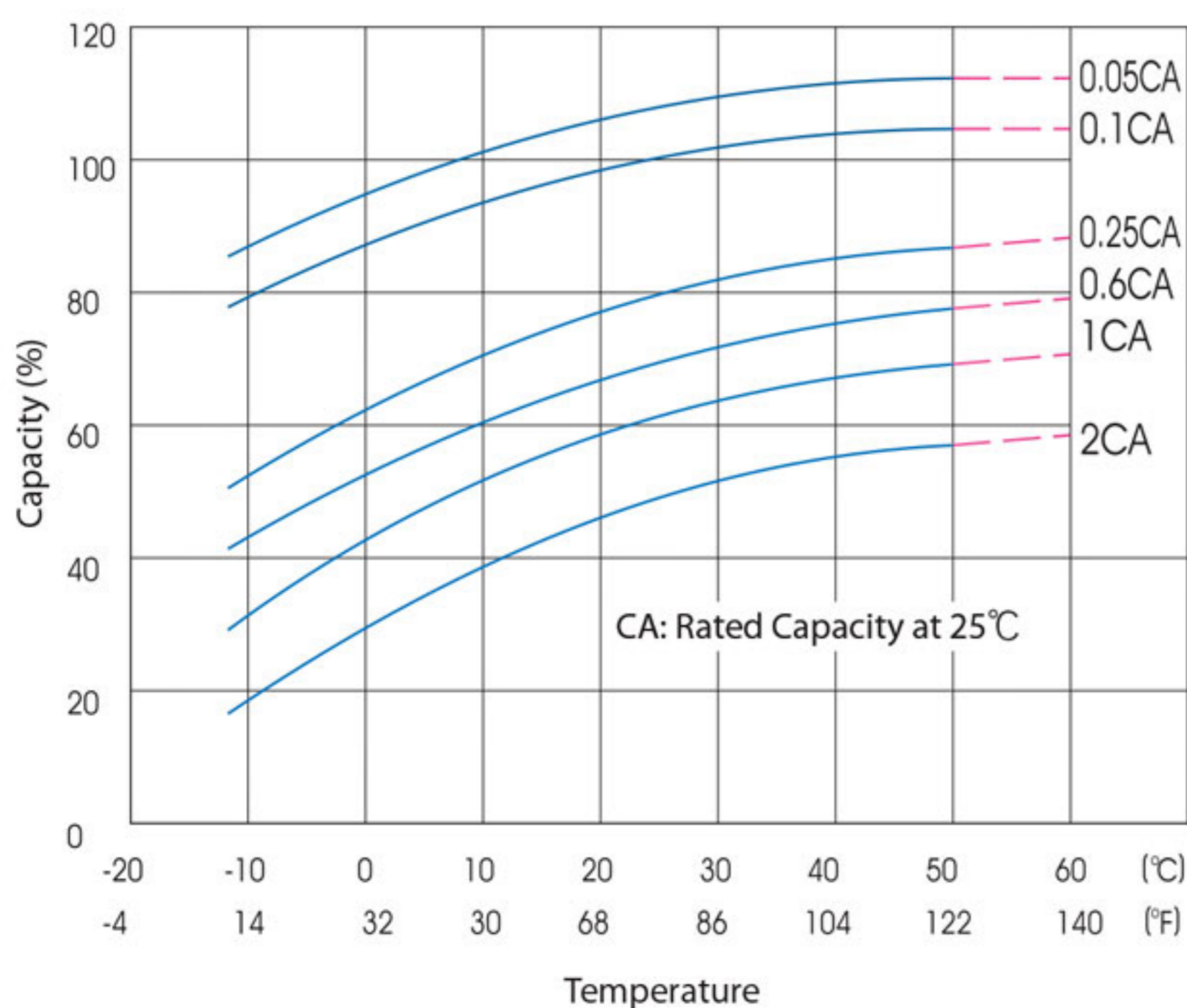
Self-Discharge Characteristics



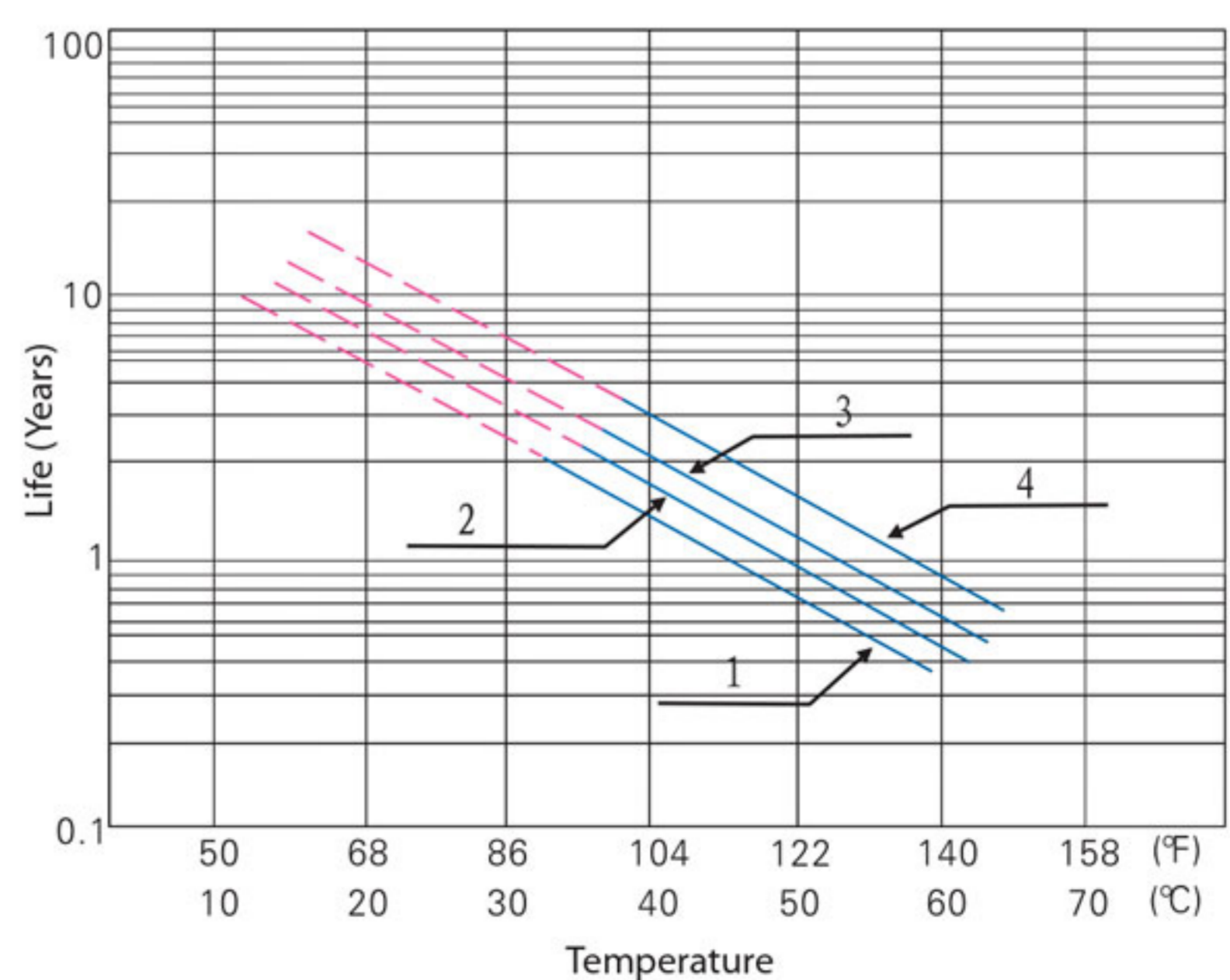
Relationship of OCV and Residual Capacity % (25°C)



Temperature effects on capacity

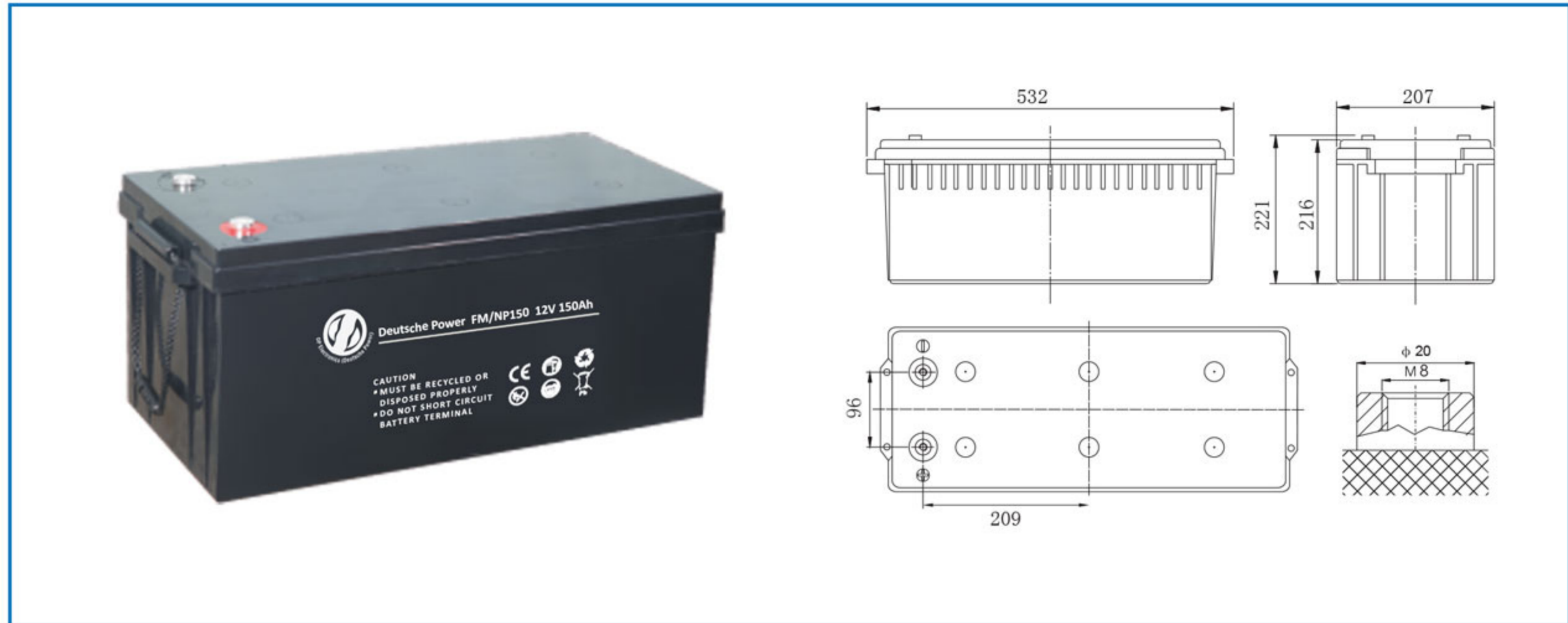


Temperature effects float life



6-FM/NP150

FM/NP Battery Series (General Use Battery)



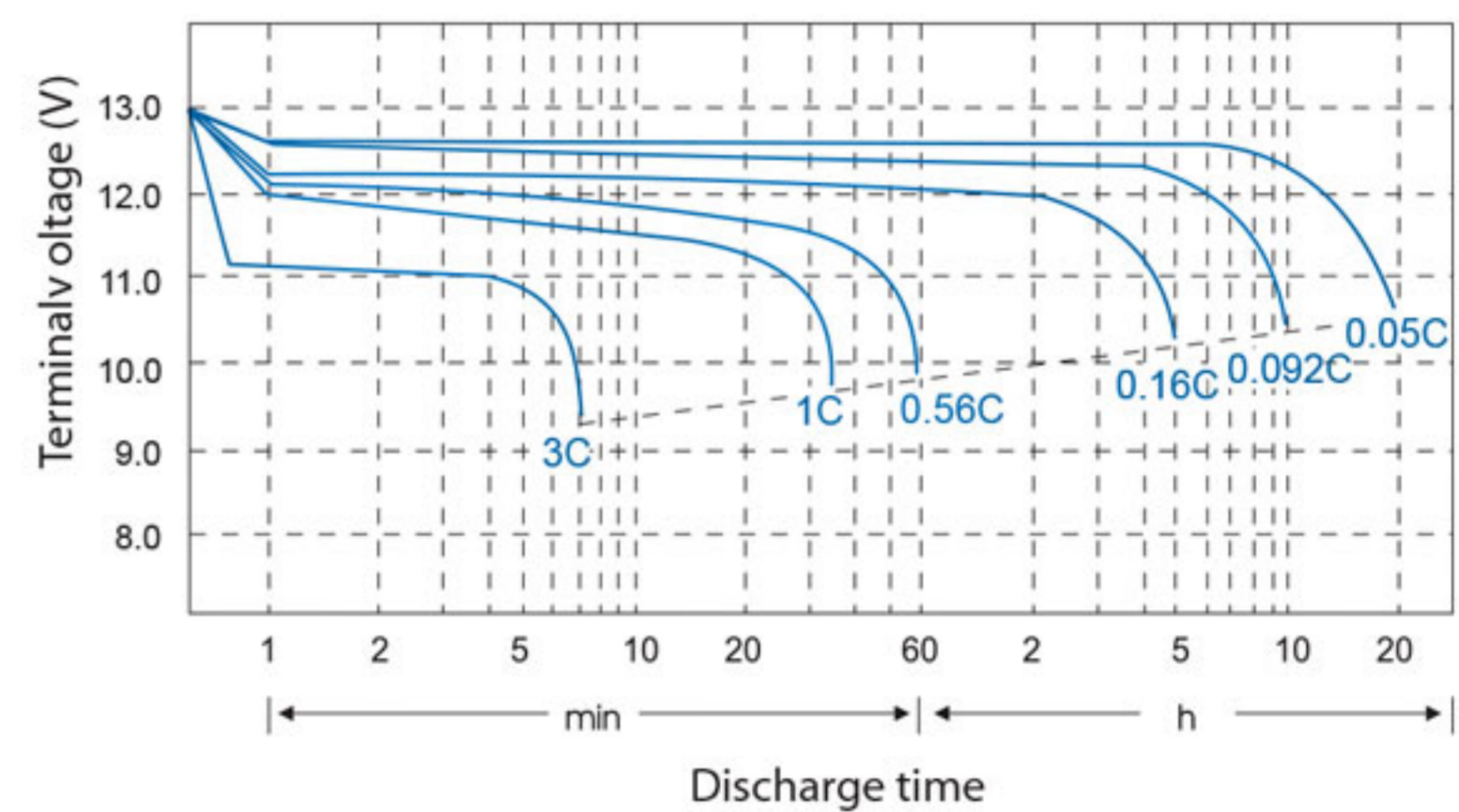
Specifications

| | | |
|-------------------------------|-------------------------------|---------------------|
| Nominal Voltage | 12V | |
| Rated Capacity (20 hour rate) | 150Ah | |
| Dimensions | Total Height (with terminals) | 8.70 inches(221mm) |
| | Height | 8.50 inches(216mm) |
| | length | 20.94 inches(532mm) |
| | width | 8.15 inches(207mm) |
| Weight | Approx.105.2 Pound(47.8kg) | |

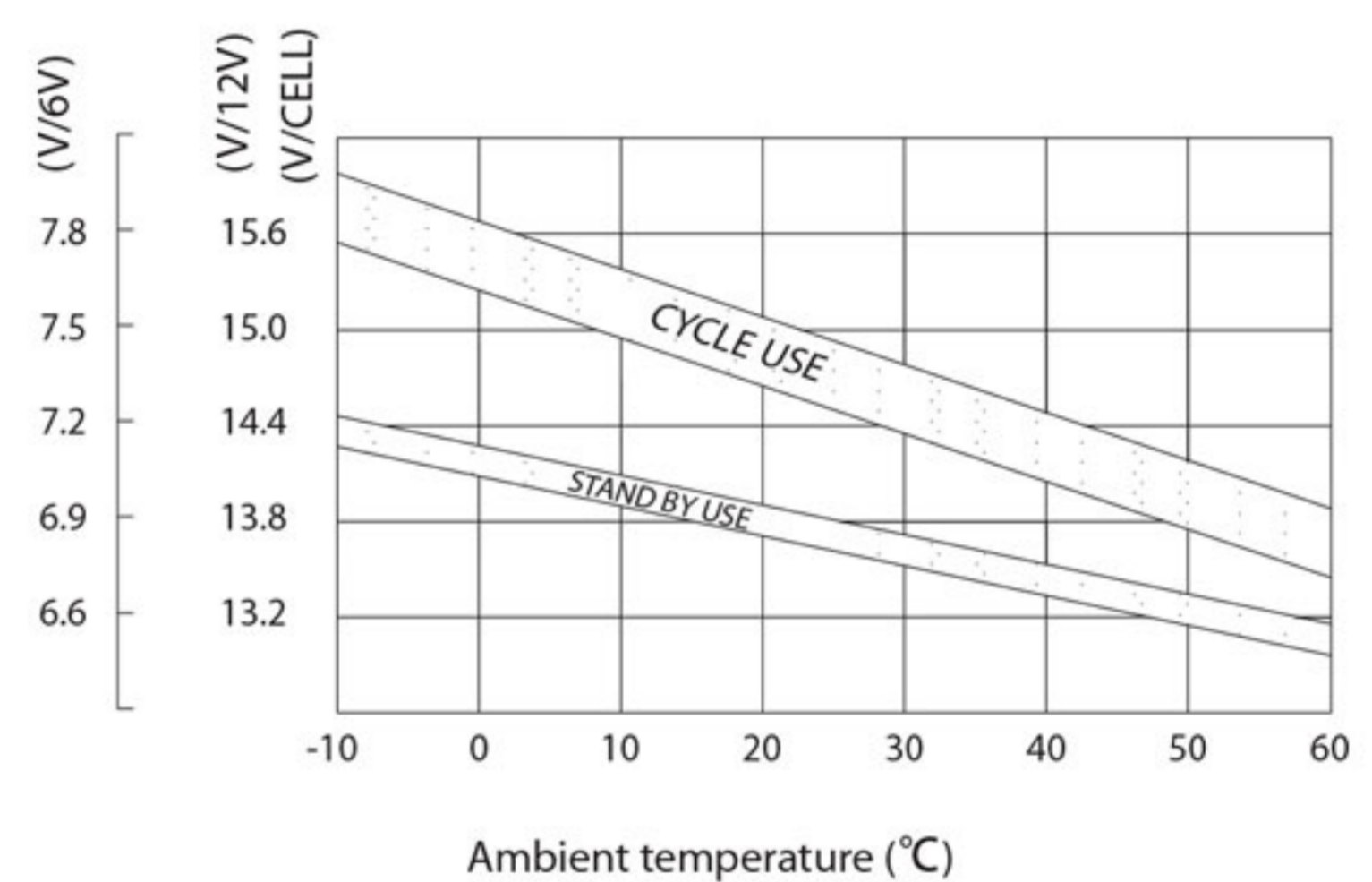
Characteristics

| | | |
|---|-------------------------------------|--|
| Capacity 77°F (25°C) | 20 hour rate (7.5A) | 150 Ah |
| | 10 hour rate (13.8A) | 138 Ah |
| | 5 hour rate (24.0A) | 120 Ah |
| | 1hour rate (90.0A) | 90 Ah |
| | 15Minute Rate (246A) | 61.5 Ah |
| Internal Resistance | Full charged Battery 77°F (25°C) | 3 MΩ |
| | 104°F (40°C) | 102% |
| Capacity affected by Temperature (20hour rate) | 77°F (25°C) | 100% |
| | °F (0°C) | 85% |
| | 5°F (-15°C) | 65% |
| Self-Discharge 77°F (25°C) | Capacity after 3 month storage | 91% |
| | Capacity after 6 month storage | 81% |
| | Capacity after 12 month storage | 60% |
| Max. Discharge Current 77°F (25°C) | 1000A(5S) | |
| Terminal | M5 | |
| Charge (Constant Voltage) | Cycle | Initial Charging Current less than 30A Voltage 14.4~14.7V / 77°F (25°C) |
| | Float | Voltage 13.5~13.8V / 77°F (25°C) |

Discharge Curves 77°F (25°C)



Relationship between charge voltage and temperature



Constant Current Discharge (AMPERES @25°C)

| F.V/Time | 5Min | 10Min | 15Min | 30Min | 60Min | 2H | 3H | 4H | 5H | 10H | 20H |
|----------|------|-------|-------|-------|-------|------|------|------|------|------|------|
| 1.65 | 461 | 322 | 249 | 155 | 119 | 81.7 | 56.8 | 38.9 | 26.1 | 14.9 | 6.74 |
| 1.70 | 426 | 303 | 239 | 132 | 112 | 77.7 | 55.0 | 37.5 | 25.2 | 14.5 | 6.52 |
| 1.80 | 336 | 255 | 203 | 111 | 106 | 72.6 | 53.0 | 35.8 | 23.7 | 13.8 | 6.28 |

Constant Power Discharge (WATTS PER CELL@25°C)

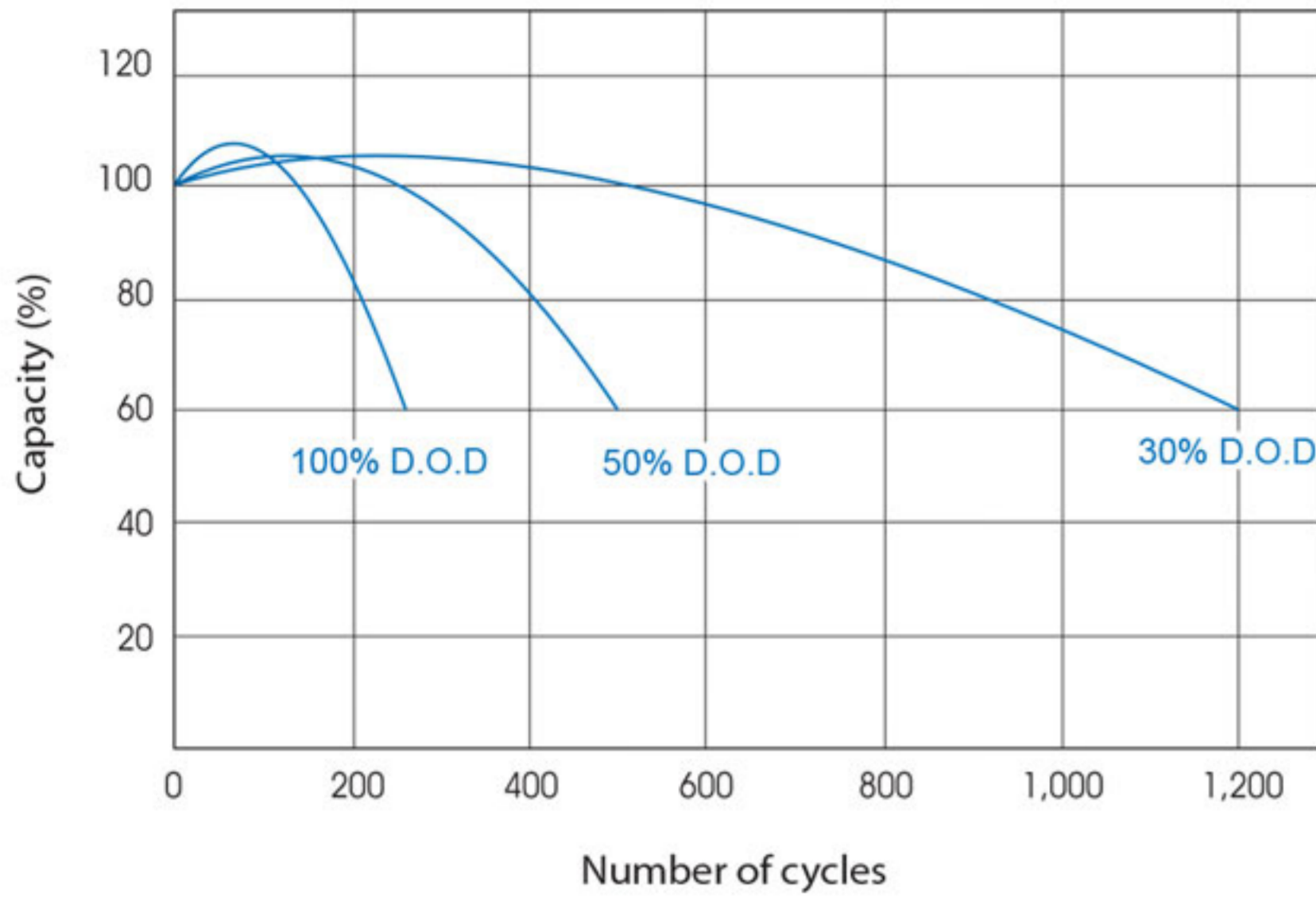
| Cut off voltage V/cell | 5min | 10min | 15min | 30min | 45min | 1h | 2h | 3h | 5h | 10h | 24h |
|------------------------|------|-------|-------|-------|-------|-----|------|------|------|------|------|
| 1.60 | 821 | 583 | 454 | 286 | 219 | 178 | 106 | 73.7 | 48.6 | 27.8 | 12.2 |
| 1.65 | 804 | 576 | 451 | 282 | 217 | 175 | 104 | 72.0 | 48.1 | 27.6 | 12.1 |
| 1.67 | 801 | 571 | 450 | 276 | 213 | 172 | 103 | 71.3 | 47.8 | 27.5 | 12.0 |
| 1.70 | 757 | 560 | 441 | 247 | 210 | 168 | 102 | 70.4 | 47.1 | 27.2 | 11.9 |
| 1.75 | 691 | 519 | 411 | 234 | 208 | 162 | 101 | 69.6 | 46.5 | 27.0 | 11.8 |
| 1.80 | 626 | 487 | 391 | 214 | 205 | 159 | 100 | 68.7 | 45.2 | 26.5 | 11.6 |
| 1.85 | 501 | 404 | 342 | 208 | 188 | 148 | 95.5 | 67.8 | 44.0 | 25.2 | 11.4 |

6-FM/NP150

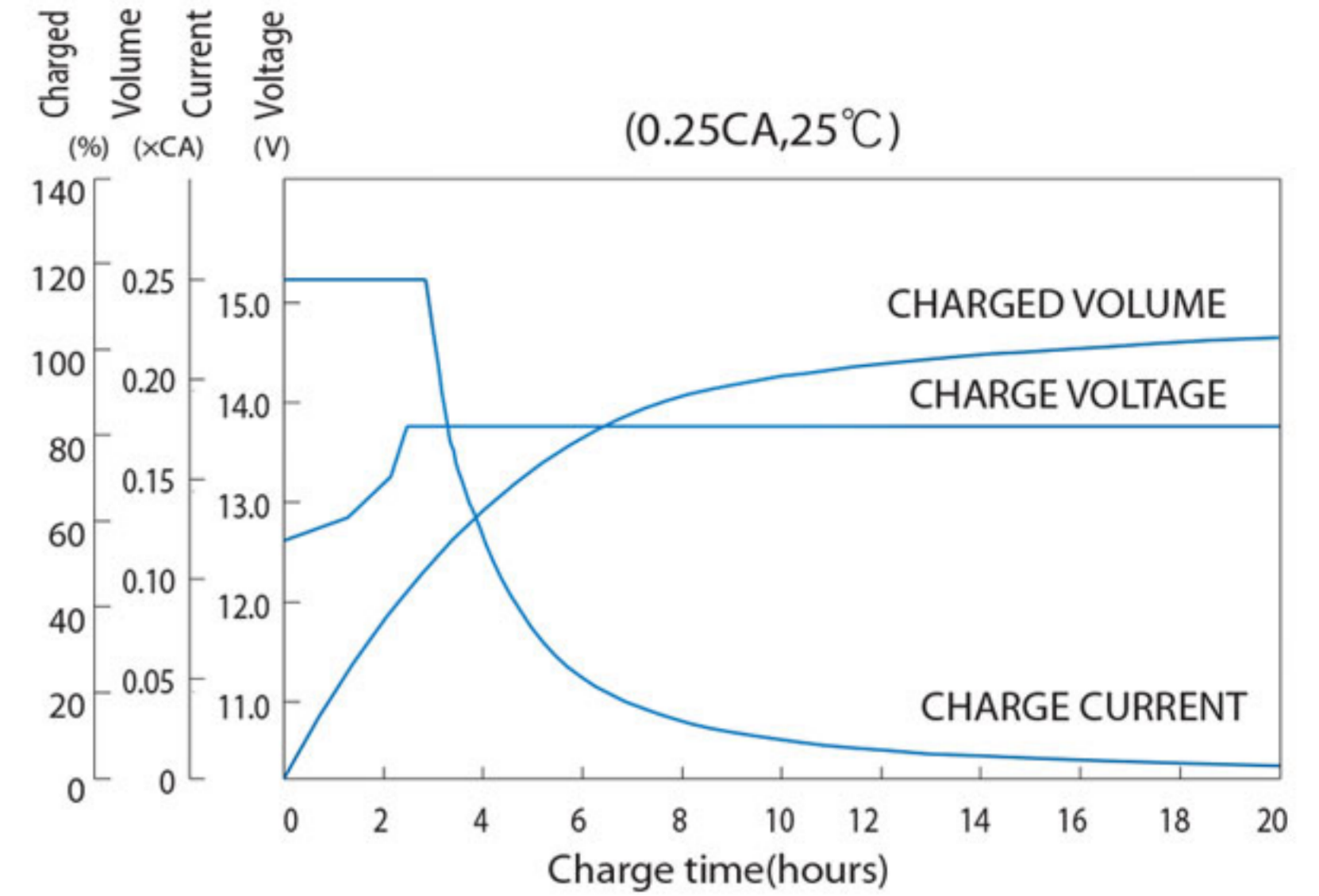
FM/NP Battery Series (General Use Battery)

The operating environment temperature above 40°C should be avoided, After long term storage, The battery actual capacity would be less than the rated capacity. Full capacity will be obtained through several charge/discharge cycles. To get the longest life, Deutsche Power battery should be fully charged before storage

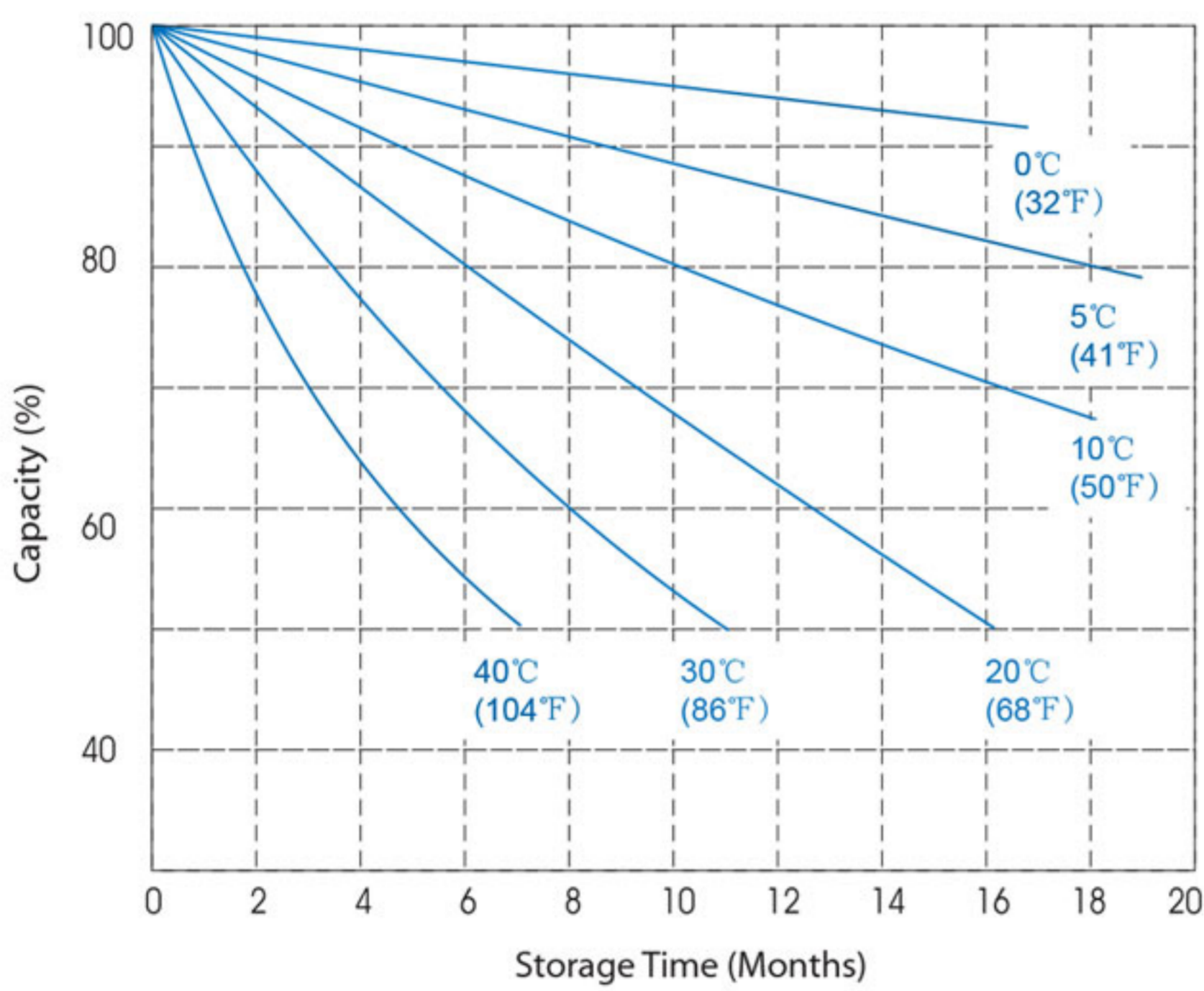
Cycle service life in relation to depth of discharge



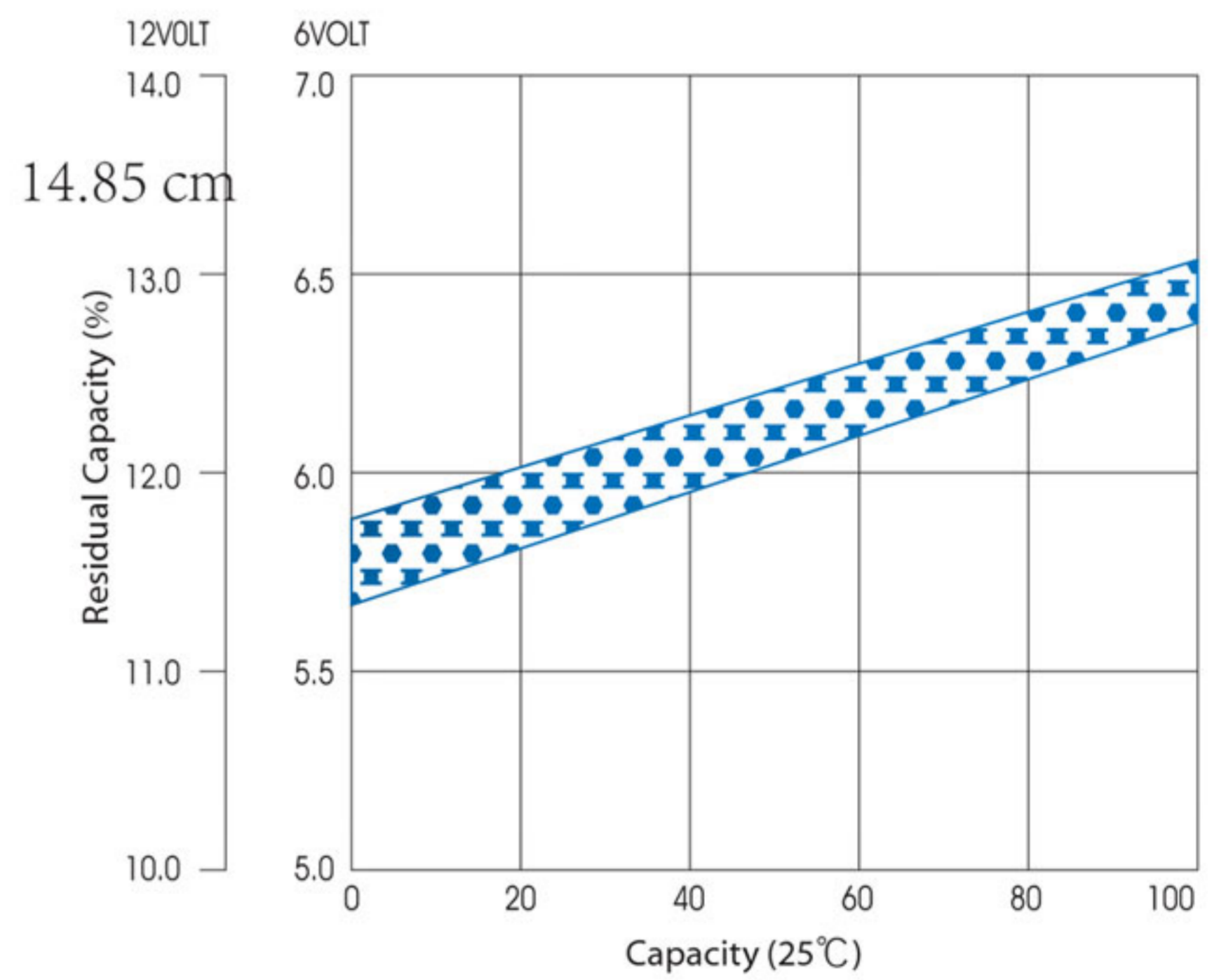
Constant voltage charge characteristic



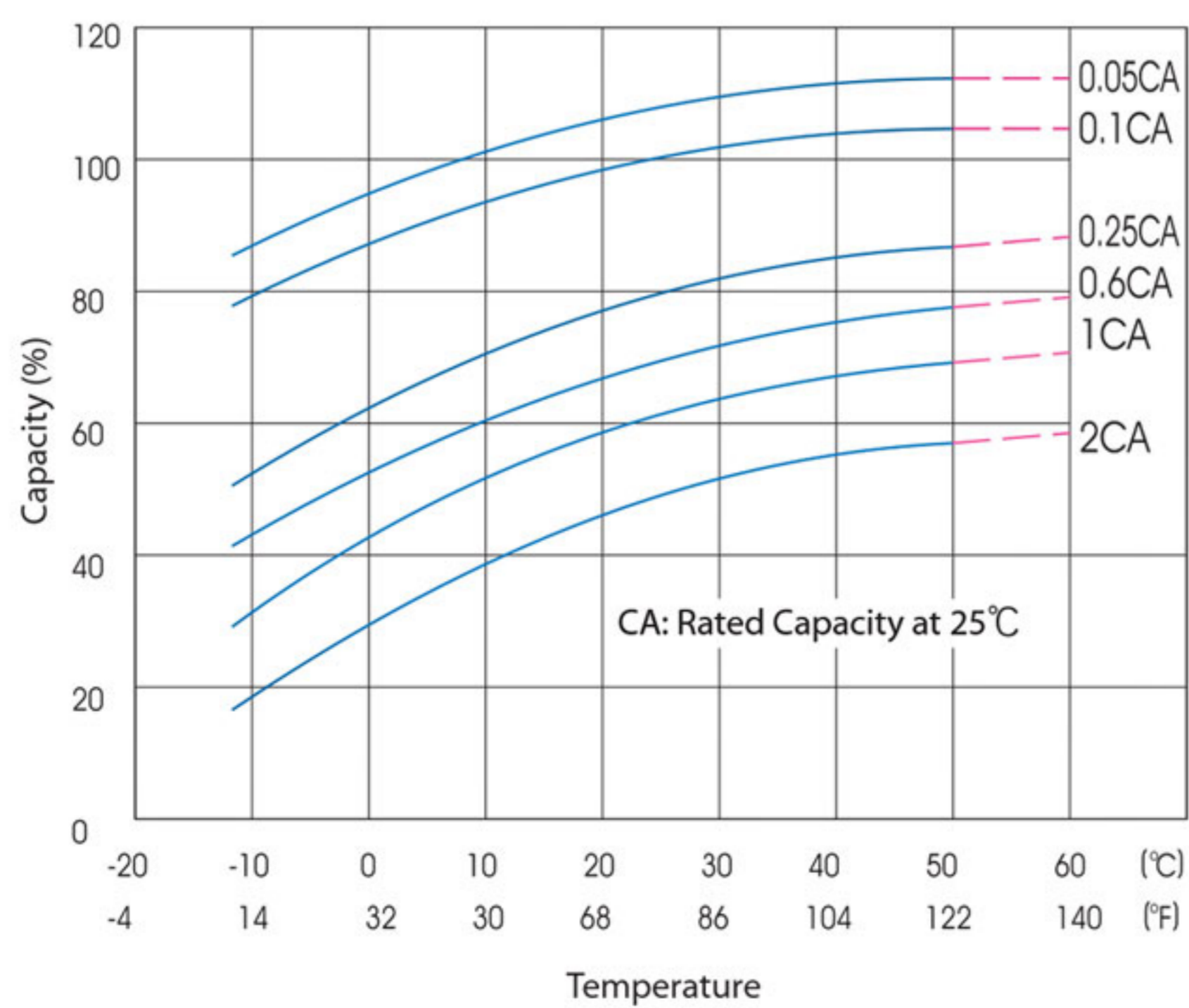
Self-Discharge Characteristics



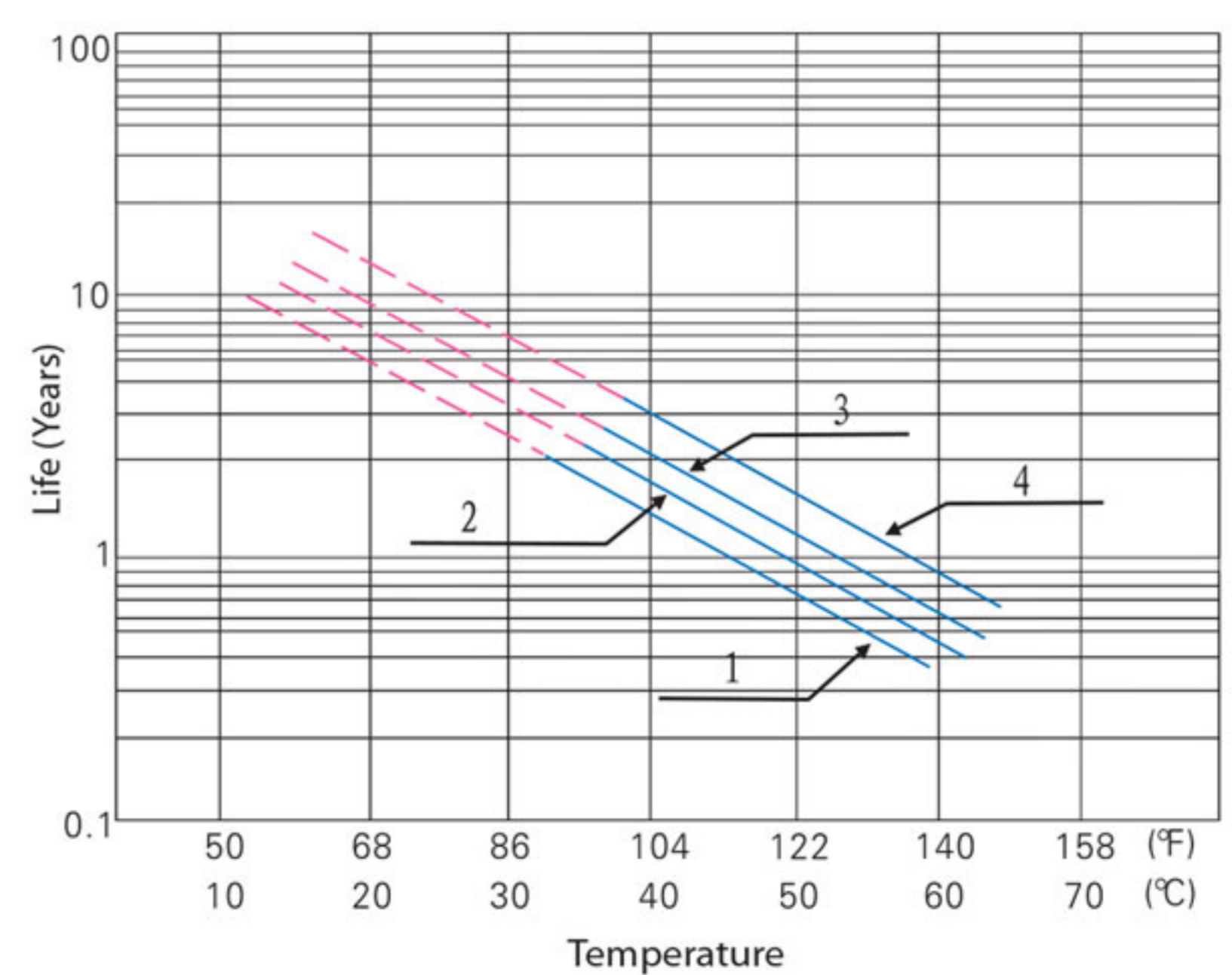
Relationship of OCV and Residual Capacity % (25°C)



Temperature effects on capacity

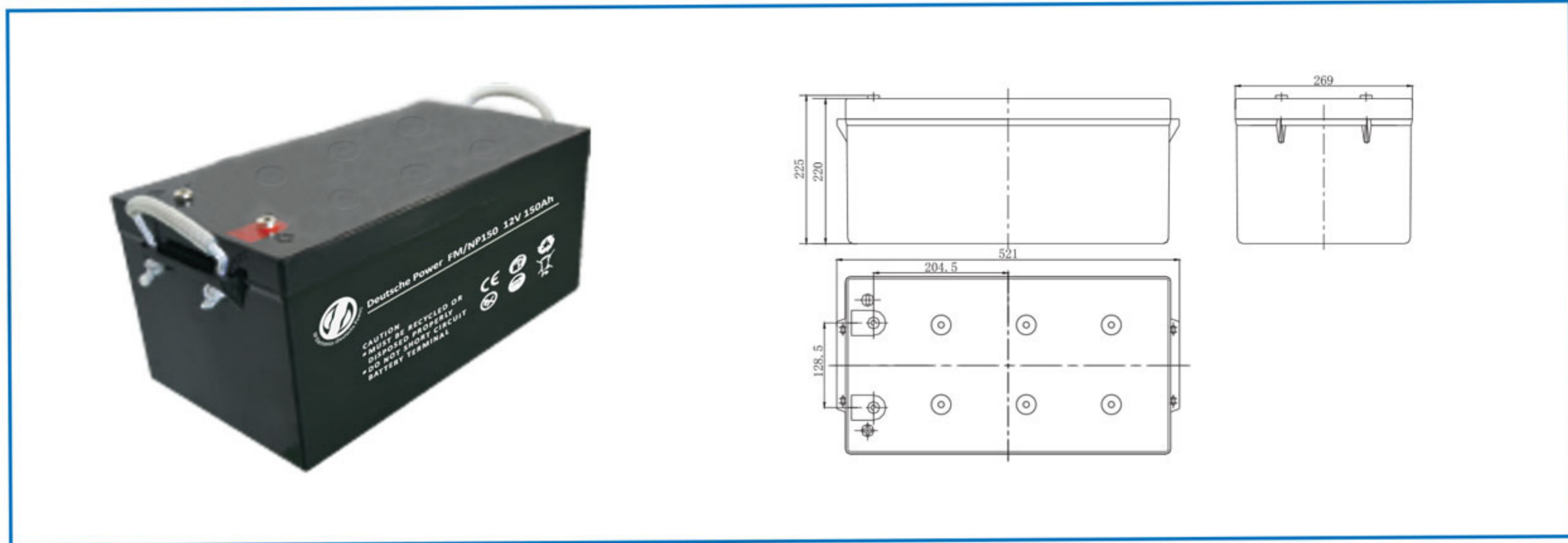


Temperature effects float life



6-FM/NP250

FM/NP Battery Series (General Use Battery)



Specifications

| | | |
|------------------------------|-------------------------------|---------------------------|
| Nominal Voltage | | 12V |
| Rated Capacity(20 hour rate) | | 250Ah |
| Dimensions | Total Height (with terminals) | 8.86inches (225mm) |
| | Height | 8.66inches (220mm) |
| | Length | 20.47inches (520mm) |
| | Width | 10.59inches (269mm) |
| Weight | | Approx. 151.8Pound (69kg) |

Characteristics

| | | |
|--|---------------------------------|--|
| Capacity 77°F(25°C) | | 250Ah |
| | 10 hour rate (23.0A) | 230Ah |
| | 5 hour rate (40A) | 200Ah |
| | 1 hour rate (150A) | 150Ah |
| | 15 minute Rate (410A) | 102.5Ah |
| Internal Resistance | Full charged Battery 77°F(25°C) | 2.5mΩ |
| Capacity affected by Temperature (20 hour rate) | 104°F(40°C) | 102% |
| | 77°F(25°C) | 100% |
| | 32°F(0°C) | 85% |
| | 5°F(-15°C) | 65% |
| Self-Discharge 77°F(20°C) | Capacity after 3 month storage | 91% |
| | Capacity after 6 month storage | 81% |
| | Capacity after 12 month storage | 60% |
| Max. Discharge Current 77°F(25°C) | 1666A(5S) | |
| Terminal | M5 | |
| Charge (Constant Voltage) | Cycle | Initial Charging Current less than 75A |
| | | Voltage 14.4~14.7V/77°F(25°C) |
| | Float | Voltage 13.5~13.8V/77°F(25°C) |

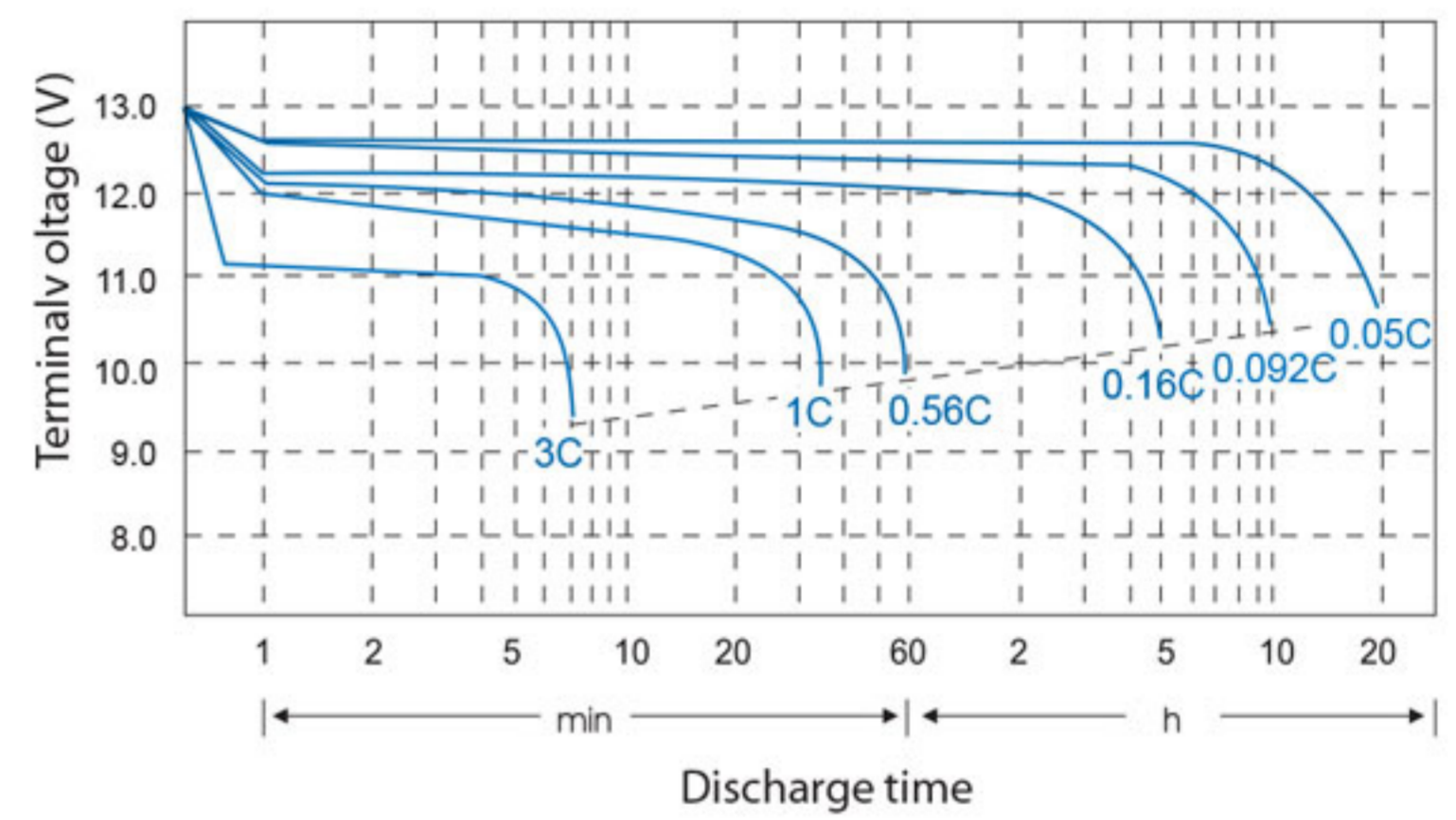
Constant Current Discharge (AMPERES @25°C)

| F.V/Time | 10Min | 15Min | 30Min | 45Min | 1Hour | 2Hour | 3Hour | 5Hour | 8Hour | 10Hour | 12Hour | 24Hour |
|----------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|--------|
| 1.65 | 482.5 | 373.8 | 236.3 | 178.8 | 136.3 | 92.9 | 64.4 | 42.8 | 29.4 | 25.4 | 20.6 | 11.1 |
| 1.70 | 455.0 | 357.5 | 221.3 | 167.5 | 128.8 | 90.3 | 62.5 | 41.9 | 28.8 | 24.4 | 20.1 | 10.8 |
| 1.80 | 381.3 | 305.0 | 182.5 | 160.0 | 122.5 | 86.1 | 60.4 | 40.1 | 27.3 | 23.0 | 19.5 | 10.4 |

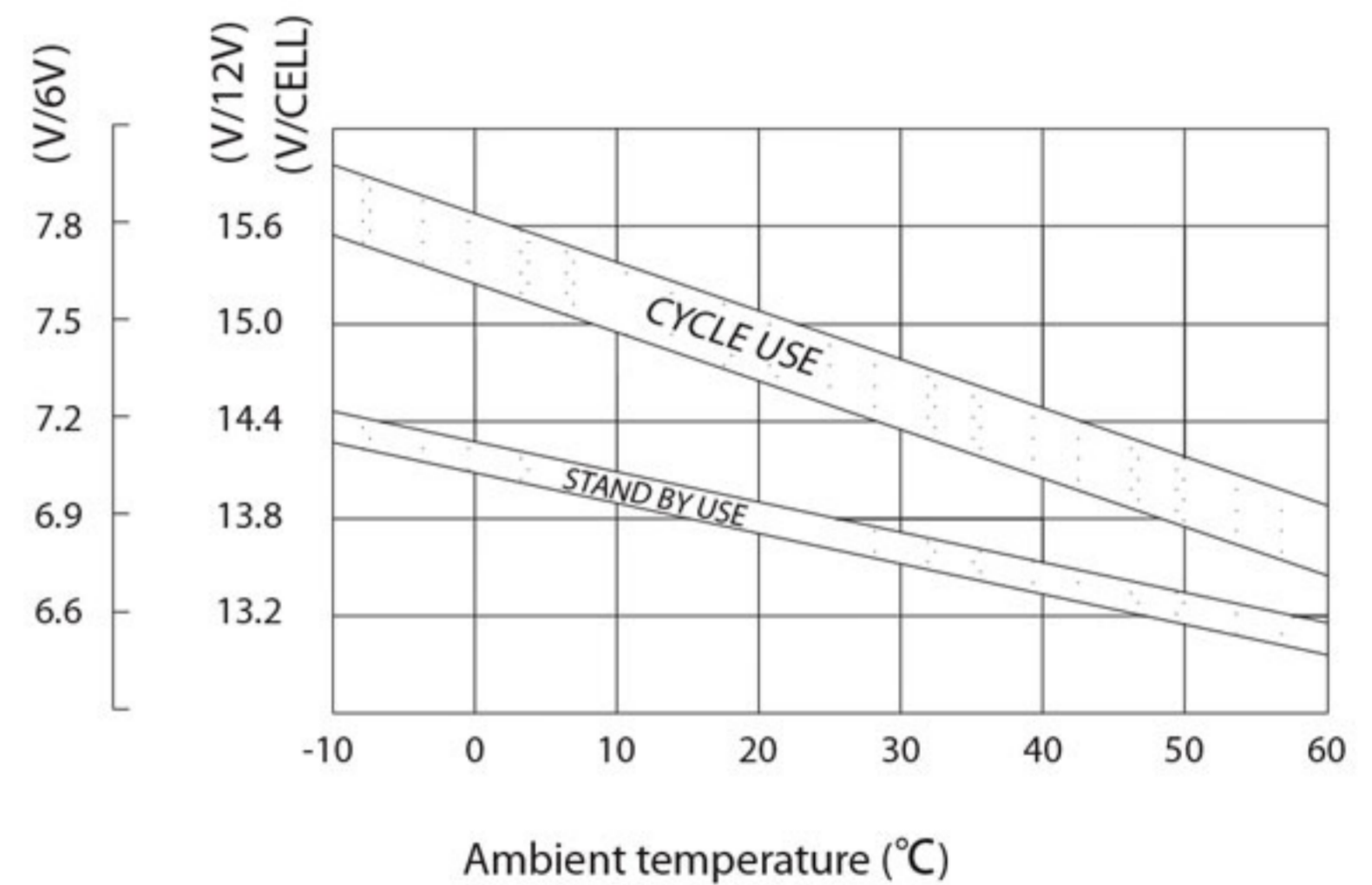
Constant Power Discharge (WATTS PER CELL@25°C)

| F.V/Time | 10Min | 15Min | 30Min | 45Min | 1Hour | 2Hour | 3Hour | 5Hour | 8Hour | 10Hour | 12Hour | 24Hour |
|----------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|--------|
| 1.60 | 871 | 681 | 436 | 329 | 289 | 173 | 120 | 79.0 | 54.4 | 46.6 | 38.5 | 19.8 |
| 1.65 | 864 | 676 | 429 | 325 | 285 | 170 | 118 | 78.8 | 54.1 | 46.0 | 38.3 | 19.5 |
| 1.67 | 856 | 675 | 423 | 320 | 279 | 169 | 118 | 78.5 | 54.0 | 45.3 | 38.1 | 19.4 |
| 1.70 | 840 | 661 | 414 | 315 | 274 | 168 | 117 | 78.3 | 53.8 | 45.0 | 37.9 | 19.3 |
| 1.75 | 786 | 624 | 370 | 313 | 270 | 166 | 116 | 77.5 | 53.1 | 43.9 | 37.5 | 19.1 |
| 1.80 | 730 | 586 | 351 | 308 | 264 | 163 | 115 | 76.8 | 52.1 | 43.0 | 37.3 | 18.9 |
| 1.85 | 606 | 513 | 321 | 283 | 259 | 155 | 112 | 71.5 | 48.6 | 41.0 | 34.8 | 18.5 |

Discharge Curves 77°F (25°C)



Relationship between charge voltage and temperature

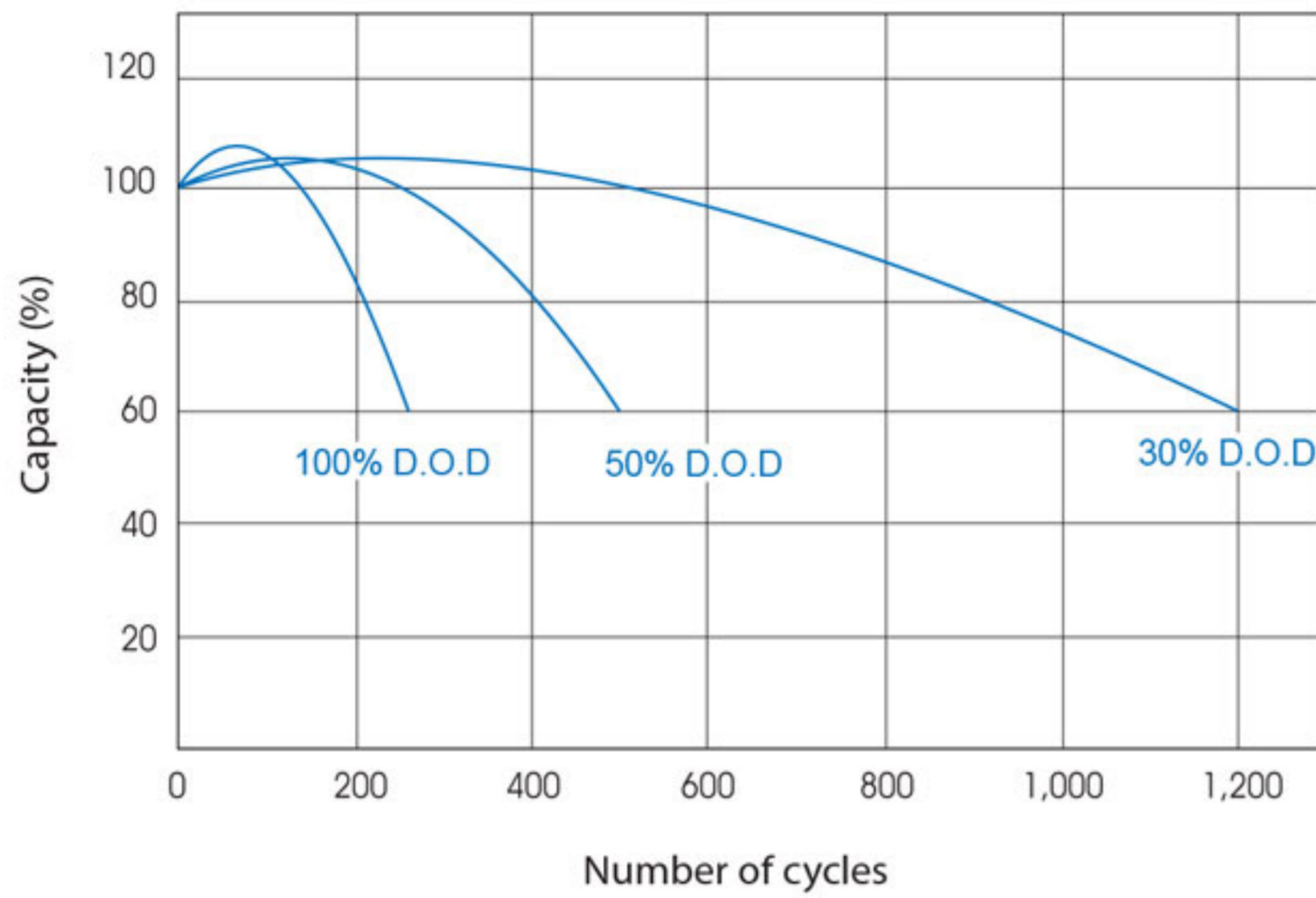


6-FM/NP250

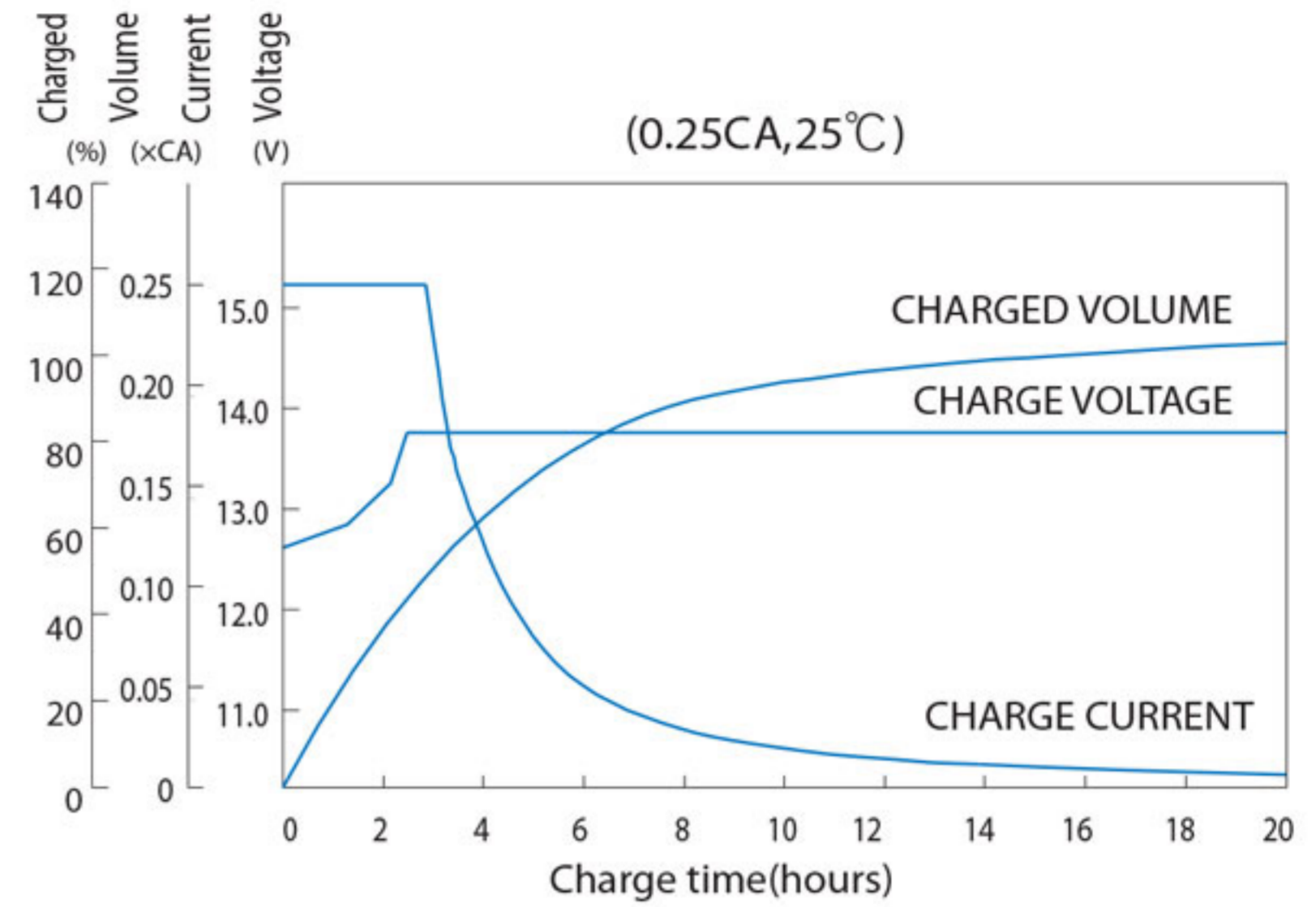
FM/NP Battery Series (General Use Battery)

The operating environment temperature above 40°C should be avoided, After long term storage, The battery actual capacity would be less than the rated capacity. Full capacity will be obtained through several charge/discharge cycles. To get the longest life, Deutsche Power battery should be fully charged before storage

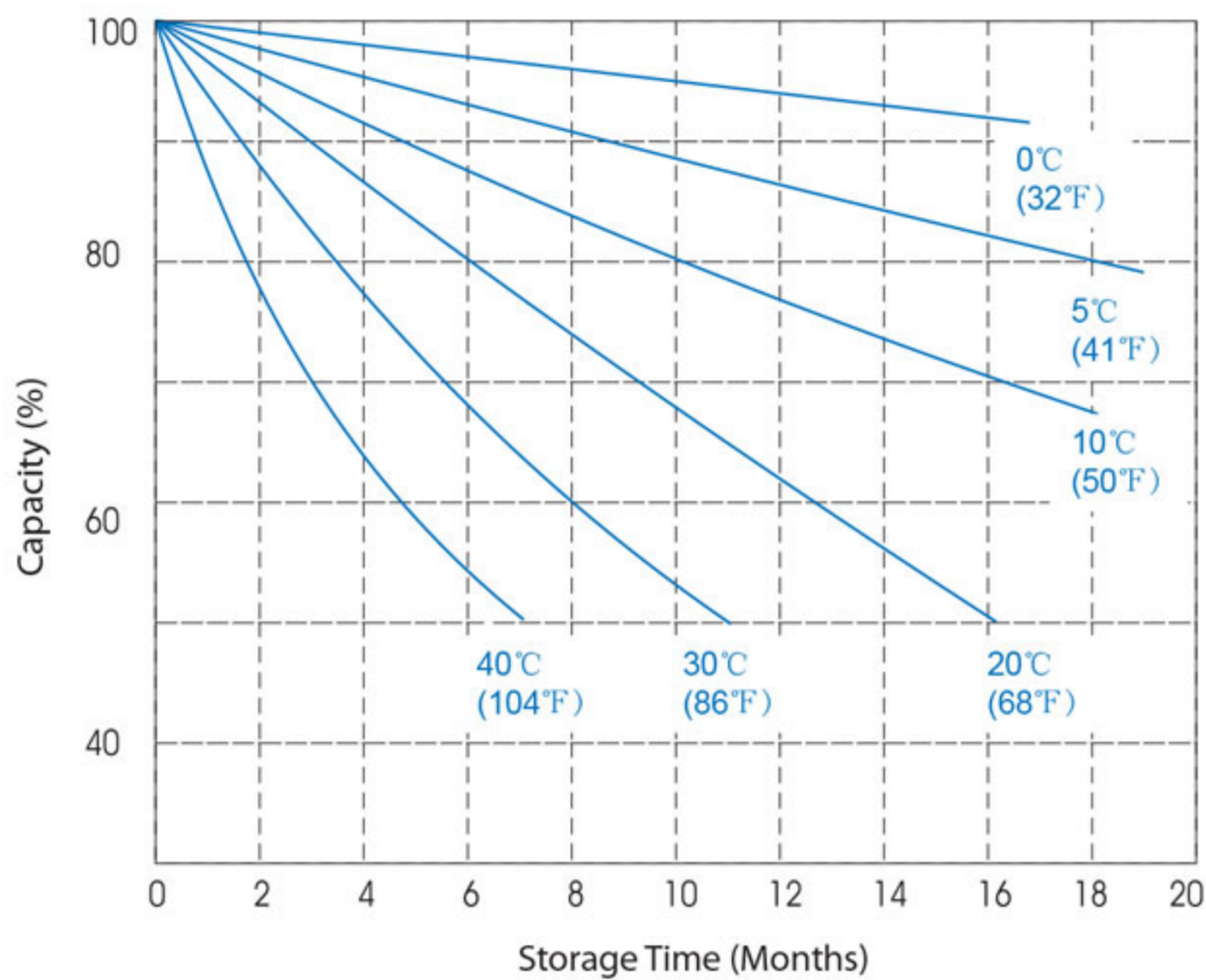
Cycle service life in relation to depth of discharge



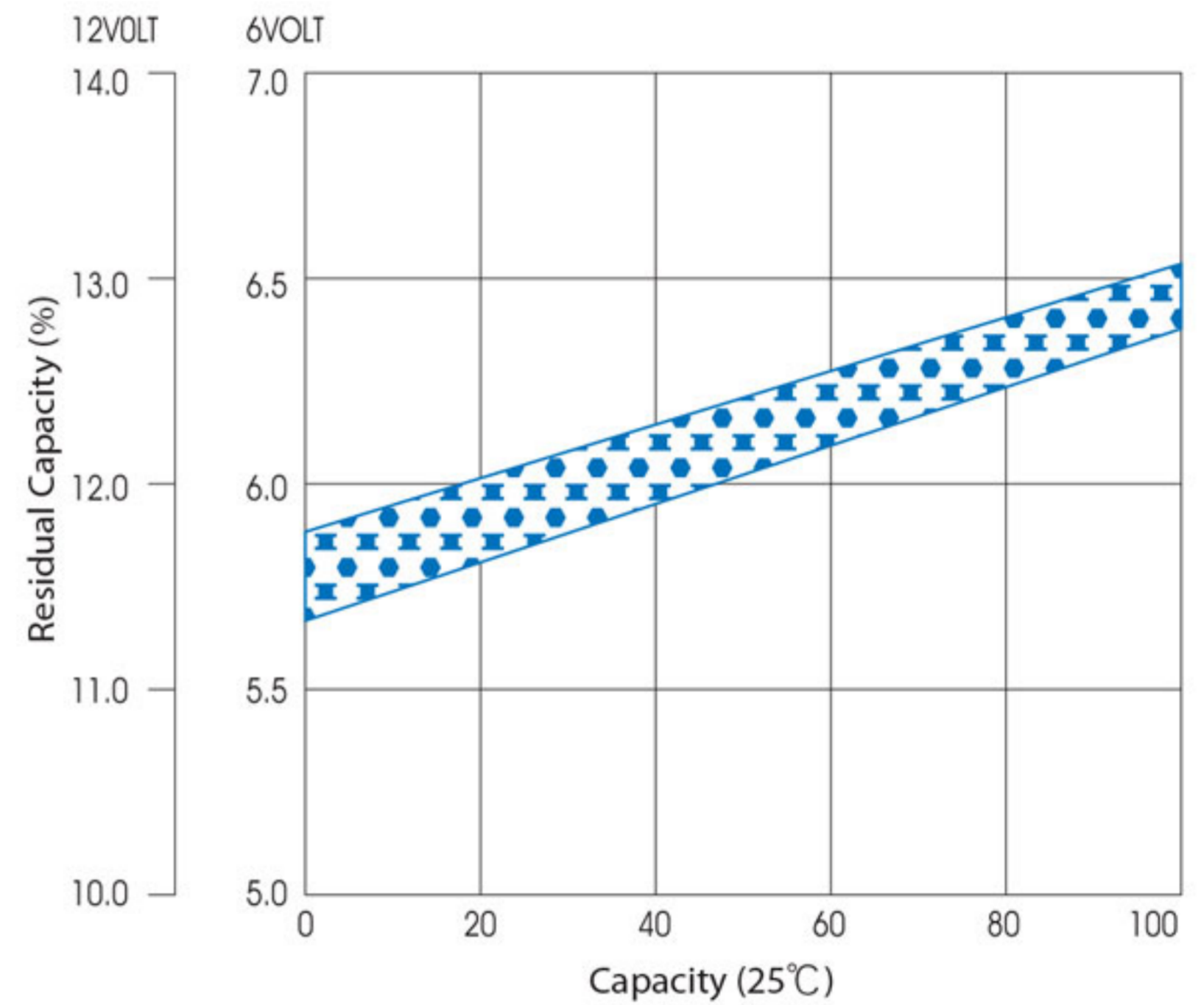
Constant voltage charge characteristic



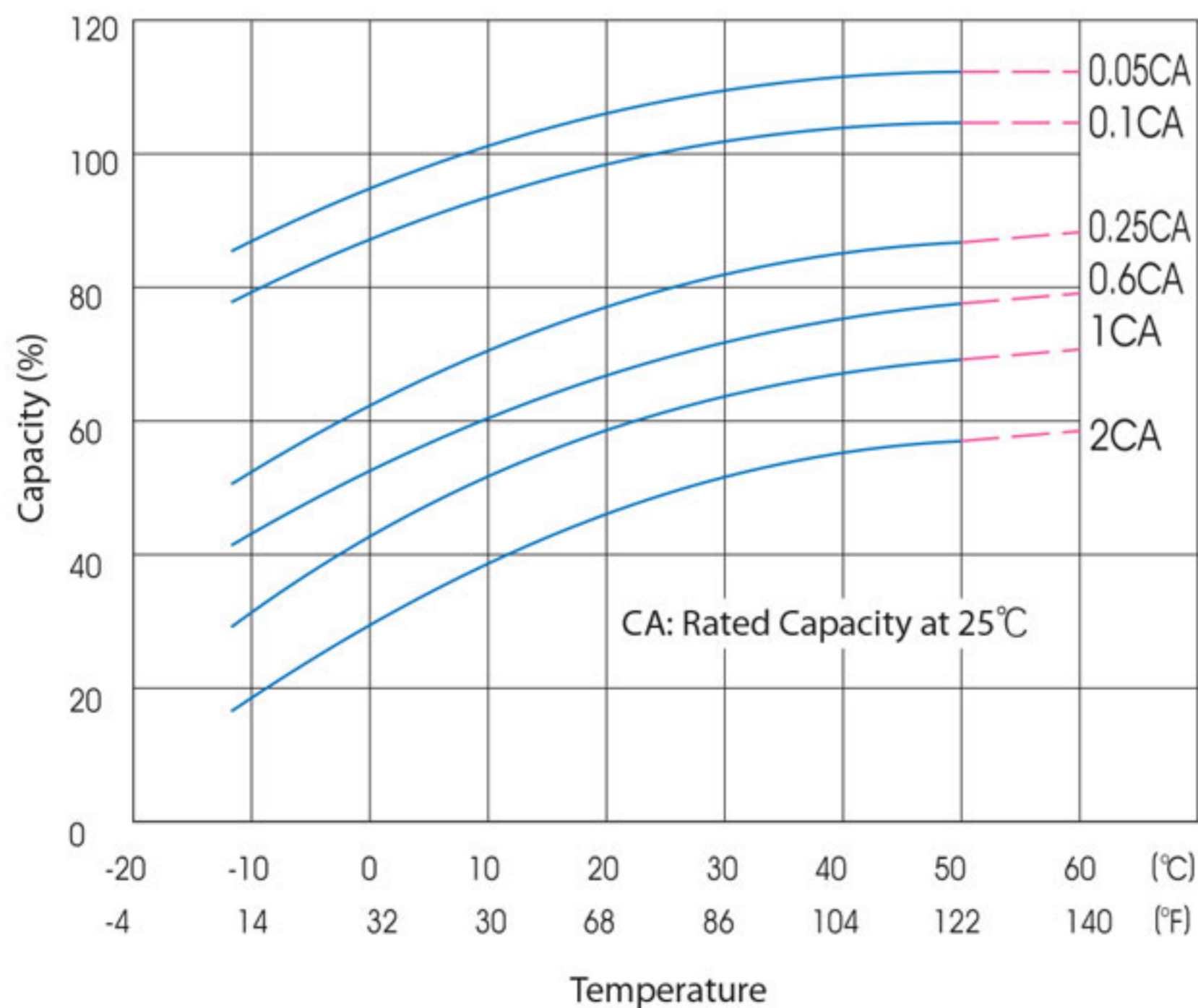
Self-Discharge Characteristics



Relationship of OCV and Residual Capacity % (25°C)



Temperature effects on capacity



Temperature effects float life

