



# AiSHi

THINK AHEAD.

ALUMINUM  
ELECTROLYTIC  
CAPACITORS  
22▼23

**CAPACITOR SERIES TABLE, CONTENTS**  
**CONDUCTIVE POLYMER ALUMINUM SOLID CAPACITORS**

| Category & Series |                 |                                | Features                                     | Endurance (hours)   | Rated Voltage Range (Vdc) | Operating Temperature Range(°C) | Capacitance Range(μF) | Page |
|-------------------|-----------------|--------------------------------|--|---------------------|---------------------------|---------------------------------|-----------------------|------|
| Solid             | Multilayer Type | A1                             | Low ESR                                      | 105°C 2,000         | 2~25                      | -55~+105                        | 2.2~470               | 19   |
|                   |                 | A2                             | Low ESR                                      | 105°C 2,000         | 2~16                      | -55~+105                        | 6.8~470               | 22   |
|                   | Radial Type     | PZ                             | Standard                                     | 105°C 2,000         | 6.3~125                   | -55~+105                        | 4.7~5,600             | 24   |
|                   |                 | PD                             | Small size                                   | 105°C 2,000         | 6.3~35                    | -55~+105                        | 33~4,700              | 29   |
|                   |                 | PV                             | High voltage                                 | 125°C 2,000         | 35~125                    | -55~+125                        | 4.7~1,000             | 33   |
|                   |                 | PH                             | Huge capacitance, jumbo size                 | 105°C 2,000         | 6.3~25                    | -55~+105                        | 10~2,200              | 35   |
|                   |                 | PT                             | Long life, high temperature                  | 125°C 2,000         | 6.3~25                    | -55~+125                        | 22~5,600              | 39   |
|                   |                 | PK                             | Resistance to high temperature               | 135°C 3,000         | 6.3~25                    | -55~+135                        | 100~1,500             | 43   |
|                   |                 | PF                             | Long life                                    | 105°C 3,000~5,000   | 6.3~125                   | -55~+105                        | 4.7~5,600             | 45   |
|                   |                 | PU                             | Low ESR                                      | 105°C 2,000         | 6.3~25                    | -55~+105                        | 39~5,600              | 50   |
|                   |                 | PR(new)                        | Low ESR, long life, ripple current resistant | 105°C 5,000         | 2.5~35                    | -55~+105                        | 47~1,500              | 54   |
|                   |                 | PL(new)                        | Super long life                              | 105°C 10,000~23,000 | 2.5~35                    | -55~+105                        | 100~1,800             | 56   |
|                   |                 | PX(new)                        | high temperature resistant                   | 145°C 2,000         | 6.3~25                    | -55~+145                        | 100~1,500             | 58   |
|                   |                 | RZ(new)                        | Low ESR, ripple current resistant            | 105°C 2,000         | 2.5~35                    | -55~+105                        | 47~1,500              | 60   |
|                   | RT(new)         | Resistance to high temperature | 125°C 2,000                                  | 2.5~35              | -55~+125                  | 47~1,500                        | 62                    |      |
|                   | SMD Type        | VZ                             | Standard                                     | 105°C 2,000         | 2.5~100                   | -55~+105                        | 22~2,200              | 64   |
|                   |                 | VS                             | Low ESR                                      | 105°C 2,000         | 2.5~25                    | -55~+105                        | 27~2,200              | 67   |
|                   |                 | VD                             | High voltage                                 | 105°C 2,000         | 35~63                     | -55~+105                        | 22~470                | 69   |
|                   |                 | VT                             | Resistance to high temperature               | 125°C 2,000         | 2.5~63                    | -55~+125                        | 22~2,200              | 71   |
|                   |                 | VF                             | Long life                                    | 105°C 3,000~5,000   | 2.5~63                    | -55~+105                        | 22~2,200              | 73   |
| VL(new)           |                 | Super long life                | 105°C 10,000~23,000                          | 2.5~16              | -55~+105                  | 100~560                         | 75                    |      |

**CONDUCTIVE POLYMER HYBRID ALUMINUM ELECTROLYTIC CAPACITORS**

| Category & Series |                    |         | Features                               | Endurance (hours) | Rated Voltage Range (Vdc) | Operating Temperature Range(°C) | Capacitance Range(μF) | Page |
|-------------------|--------------------|---------|--|-------------------|---------------------------|---------------------------------|-----------------------|------|
| Hybrid            | Radial Type        | DA(new) | Low ESR, high ripple current resistant | 125°C 4,000       | 25~80                     | -55~+125                        | 15~470                | 77   |
|                   |                    | DC(new) | Low ESR, high ripple current resistant | 105°C 10,000      | 25~80                     | -55~+105                        | 15~470                | 79   |
|                   | Surface Mount Type | SA(new) | Low ESR, high ripple current resistant | 125°C 4,000       | 25~80                     | -55~+125                        | 15~470                | 81   |
|                   |                    | SC(new) | Low ESR, high ripple current resistant | 105°C 10,000      | 25~80                     | -55~+105                        | 15~470                | 83   |

**ALUMINUM ELECTROLYTIC CAPACITORS**

| Category & Series  |                                 |             | Features   | Endurance (hours)                        | Rated Voltage Range (Vdc)      | Operating Temperature Range(°C) | Capacitance Range(μF) | Page    |
|--------------------|---------------------------------|-------------|--|--|--------------------------------|---------------------------------|-----------------------|---------|
| Surface Mount Type | SMD Type                        | MK          | Standard   | 105°C 2,000~3,000                        | 6.3~100<br>160~450             | -55~+105<br>-40~+105            | 2.2~1,000             | 85      |
|                    |                                 | MF          | Long life  | 105°C 6,000                              | 6.3~100<br>160~450             | -55~+105<br>-40~+105            | 2.2~1,000             | 87      |
|                    |                                 | MA          | Long life  | 105°C 10,000                             | 16~100<br>160~450              | -55~+105<br>-40~+105            | 2.2~1,000             | 89      |
|                    |                                 | MH          | Resistant to 125, long life<br>Resistant to 130°C, long life | 125°C 1,000~5,000<br>130°C 3000          | 10~100<br>160~450              | -55~+125<br>-40~+130            | 2.2~1,000             | 91      |
|                    |                                 | MT(new)     | Low ESR  | 125°C 2,000                              | 10~100                         | -55~+125                        | 47~1,100              | 93      |
|                    |                                 | MZ(new)     | Low ESR  | 105°C 2,000~5,000                        | 6.3~100                        | -55~+105                        | 4.7~1,500             | 95      |
|                    |                                 | Radial Type | Low Profile  | M5                                       | 85°C 5mm Height, standard type | 85°C 1,000                      | 6.3~50                | -40~+85 |
| H5                 | 105°C 5mm Height                |             |  | 105°C 1,000                              | 6.3~50                         | -40~+105                        | 0.1~100               | 99      |
| M7                 | 85°C 7mm Height, Standard type  |             |  | 85°C 1,000                               | 6.3~100                        | -40~+85                         | 0.1~330               | 101     |
| H7                 | 105°C 7mm Height, Standard type |             |  | 105°C 1,000                              | 6.3~50                         | -40~+105                        | 0.1~100               | 103     |
| L7                 | 105°C 7mm Height, long life     |             |  | 105°C 2,000                              | 6.3~63                         | -40~+105                        | 0.1~220               | 105     |
| Standard           | WK                              |             | Standard series for general purpose                          | 85°C 2,000                               | 6.3~100<br>160~450             | -40~+85<br>-25~+85              | 0.1~22,000            | 107     |
|                    | WH                              |             | Standard series for general purpose                          | 105°C 2,000                              | 6.3~100<br>160~500             | -40~+105<br>-25~+105            | 0.1~22,000            | 110     |
|                    | HP                              |             | For rainbrush. Standard bi-polarized series                  | 105°C 1,000                              | 6.3~100                        | -40~+105                        | 0.47~6,800            | 113     |
|                    | CD11GC                          |             | Resistant to 130°C, long life                                | 130°C 4,000~5,000<br>105°C 15,000~20,000 | 160~450                        | -40~+130                        | 1~220                 | 115     |

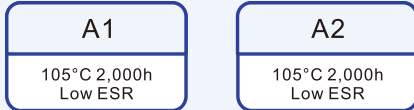
ALUMINUM ELECTROLYTIC CAPACITORS

| Category & Series           |  |   | Features  | Endurance (hours)   | Rated Voltage Range (Vdc) | Operating Temperature Range(°C) | Capacitance Range(μF) | Page       |     |
|-----------------------------|--|---|---|---|---------------------------|---------------------------------|-----------------------|------------|-----|
| Radial Type                 | High reliability, long life. Especially designed for LED driver, electronic ballast, electronic energy saving lamp | CD11GES   | Resistant to 130°C, miniaturized, high ripple current and long life | 130°C 3,000   | 160~450                   | -40~+130                        | 1~330                 | 117        |     |
|                             |  |   |   | 105°C 12,000  | 160~450                   | -40~+130                        |                       |            |     |
|                             |  |   |   | 105°C 10,000  | 500                       | -40~+105                        |                       |            |     |
|                             |  | CD11GK  | Extremely miniaturized, long life                                   | 105°C 12,000~20,000   | 160~450                   | -40~+105                        | 1~47                  | 119        |     |
|                             |  |   |   | 130°C 1,000~2,000   | 160~450                   | -40~+130                        | 1~330                 | 121        |     |
|                             |  | CD11GN  | Resistant to 130°C, miniaturized and long life                      | 105°C 8,000~12,000  | 160~450                   | -40~+130                        |                       |            |     |
|                             |  |   |   | 105°C 10000   | 500                       | -40~+105                        |                       |            |     |
|                             |  | CD11GZ(new)                                       | Long life, suited for outdoor lighting                              | 105°C 12,000  | 250~500                   | -40~+105                        | 10~150                | 123        |     |
|                             | 105°C 10,000   |   |   | 140~450   | -40~+105                  | 1~470                           | 125                   |            |     |
|                             | CD11GAS  | Miniaturized and long life                        | 105°C 8,000   | 500   | -40~+105                  |                                 |                       |            |     |
|                             |  |   | 105°C 8,000   | 140~450   | -40~+105                  | 1~330                           | 128                   |            |     |
|                             | CD11GHS  | Miniaturized, long life and high cost performance | 105°C 6,000   | 140~500   | -40~+105                  | 1~330                           | 131                   |            |     |
|                             |  |   | 105°C 3,000   | 160~450   | -40~+105                  | 1~100                           | 134                   |            |     |
|                             | Radial Type  | For Input and Output Circuit                      | RR  | High frequency, low impedance, standard                     | 105°C 2,000               | 6.3~120                         | -40~+105              | 0.47~6,800 | 136 |
|                             |  |   | RE  | Miniaturized, low impedance                                 | 105°C 2,000~4,000         | 6.3~120                         | -40~+105              | 10~4,700   | 139 |
|                             |  |   | RF  | High Ripple current, low impedance                          | 105°C 3,000~6,000         | 6.3~120                         | -40~+105              | 6.8~6,800  | 141 |
|                             |  |   | RS  | High Ripple current, low impedance and long life            | 105°C 4,000~10,000        | 6.3~120                         | -40~+105              | 6.8~18,000 | 144 |
|                             |  |   | RN  | Miniaturized, large capacitance                             | 105°C 5,000~10,000        | 25~120                          | -40~+105              | 2.7~1,500  | 148 |
|                             |  |   | RZ  | Miniaturized, long life and low impedance, high reliability | 105°C 6,000~10,000        | 6.3~50                          | -40~+105              | 22~10,000  | 151 |
|                             |  |   | RJ  | Downsized, long life and low impedance                      | 105°C 8,000~12,000        | 10~120                          | -40~+105              | 10~5,600   | 153 |
| RH                          |  |   | High frequency, low impedance                                       | 105°C 2,000~3,000   | 160~450                   | -40~+105                        | 0.47~470              | 156        |     |
| HS                          |  |   | High ripple current   | 105°C 3,000~5,000   | 160~450                   | -40~+105                        | 1~270                 | 158        |     |
| HF                          |  |   | Long life and high ripple current                                   | 105°C 5,000~10,000  | 500~550                   | -25~+105                        | 1~270                 | 158        |     |
| HT(new)                     |  |   | High temperature and ripple current                                 | 125°C 2,000   | 160~450                   | -40~+125                        | 4.7~150               | 163        |     |
| HL                          |  |   | Long life, downsized and high ripple current                        | 105°C 8,000~12,000  | 160~450                   | -40~+105                        | 6.8~680               | 166        |     |
| RK(upgrade)                 |  |   | Miniaturized, high voltage. Specially designed for charger          | 105°C 2,000   | 160~450                   | -40~+105                        | 1~150                 | 169        |     |
| 500~600                     | -25~+105   |   |   |   |                           |                                 |                       |            |     |
| High Reliability            | RG   | "GBL" system, high reliability                    | 105°C 2,000~8,000   | 6.3~100   | -55~+105                  | 10~10,000                       | 172                   |            |     |
|                             | ML   | 105°C 5~9mm Height, long life                     | 105°C 3,000~5,000   | 6.3~50  | -40~+105                  | 1~1,000                         | 175                   |            |     |
|                             | RM   | Miniaturized, long life                           | 105°C 10,000  | 10~100  | -40~+105                  | 0.47~330                        | 177                   |            |     |
|                             | NB(upgrade)  | Resistant to 130°C, long life                     | 130°C 2,000~5,000   | 10~120  | -40~+130                  | 1~4700                          | 179                   |            |     |
| Special Purpose             | RD   | Low water content series                          | 105°C 2,000~5,000   | 6.3~100   | -40~+105                  | 0.47~15,000                     | 182                   |            |     |
|                             | GH(upgrade)  | For intelligent instrument, high reliability      | 105°C 5,000~8,000   | 6.3~100   | -40~+105                  | 1~18,000                        | 185                   |            |     |
|                             | LL   | Extremely low leakage current                     | 105°C 10,000  | 160~450   | -40~+105                  | 0.47~2,200                      | 189                   |            |     |
|                             | BG   | Large capacitance, low impedance; For airbags     | 105°C 2,000   | 6.3~100   | -40~+105                  | 0.47~2,200                      | 189                   |            |     |
|                             | 105°C 5,000  | 25~35   | -55~+105  | 1000~11,000   | 191                       |                                 |                       |            |     |
| BH(new)                     | For automobile electronics   | 125°C 3,000                                       | 25~400  | -40~+125  | 10~11,000                 | 193                             |                       |            |     |
| Snap-in & Lug Terminal Type | General Purpose  | LK(upgrade)                                       | Standard series for general purpose                                 | 85°C 2,000  | 10~100                    | -40~+85                         | 47~82,000             | 196        |     |
|                             |  | LH(upgrade)                                       | Withstand high temperature, general purpose                         | 105°C 2,000   | 10~100                    | -40~+105                        | 56~56,000             | 202        |     |
|                             |  | 160~550   | -25~+105  |   |                           |                                 |                       |            |     |
|                             |  | LC  | Wide temperature range; miniaturized                                | 105°C 2,000   | 400~500                   | -40~+105                        | 56~680                | 208        |     |
|                             |  | LZ(new)   | Wide temperature range, extremely miniaturized                      | 105°C 2,000   | 400~450                   | -40~+105                        | 120~820               | 210        |     |
|                             |  | LS  | Downsized, long life  | 85°C 3,000  | 160~600                   | -25~+85                         | 47~3,300              | 212        |     |
|                             | High Reliability   | LM  | For OBC. Downsized, long life                                       | 105°C 3,000   | 160~600                   | -25~+105                        | 47~3,300              | 216        |     |
|                             |  | LP  | High ripple current, long life                                      | 105°C 3,000   | 400~550                   | -40~+105                        | 82~820                | 221        |     |
|                             |  | LQ  | Long life   | 85°C 5,000  | 160~450                   | -25~+85                         | 68~2,200              | 223        |     |
|                             |  | LG  | Long life, high ripple current                                      | 85°C 12,000   | 350~450                   | -25~+85                         | 470~2,700             | 227        |     |
|                             |  | LT  | Long life, downsized  | 105°C 5,000   | 160~550                   | -25~+105                        | 47~2,700              | 229        |     |
|                             |  | LF  | Wide temperature range, Long life                                   | 105°C 5,000   | 450~500                   | -40~+105                        | 100~820               | 234        |     |
|                             |  | LX  | Extremely long life   | 105°C 7,000   | 160~450                   | -25~+105                        | 47~2,200              | 236        |     |
| LB                          | High reliability, long life  | 105°C 10,000                                      | 200~450   | -25~+105  | 39~1,500                  | 239                             |                       |            |     |
| Screw-Mount Terminal Type   | Standard   | NR  | Screw terminal, standard series                                     | 85°C 2,000  | 350~550                   | -25~+85                         | 1000~15,000           | 241        |     |
|                             |  | NS  | Screw terminal, standard series                                     | 105°C 2,000   | 350~450                   | -25~+105                        | 1000~15,000           | 244        |     |
|                             | Long Life  | NX  | High ripple current, downsized, long life                           | 85°C 5,000  | 350~500                   | -25~+85                         | 1000~12,000           | 246        |     |
|                             |  | NL  | Long life   | 85°C 12,000   | 350~450                   | -25~+85                         | 1500~15,000           | 248        |     |
|                             |  | NE  | High ripple current, long life                                      | 85°C 20,000   | 350~450                   | -25~+85                         | 1500~15,000           | 250        |     |
|                             |  | NT(new)   | Long life   | 105°C 3,000   | 350~450                   | -25~+105                        | 1000~12,000           | 252        |     |
|                             |  | NF  | Long life   | 105°C 5,000   | 350~450                   | -25~+105                        | 1000~15,000           | 254        |     |
|                             |  | NK  | High ripple current, long life                                      | 105°C 5,000   | 350~450                   | -25~+105                        | 1000~15,000           | 256        |     |

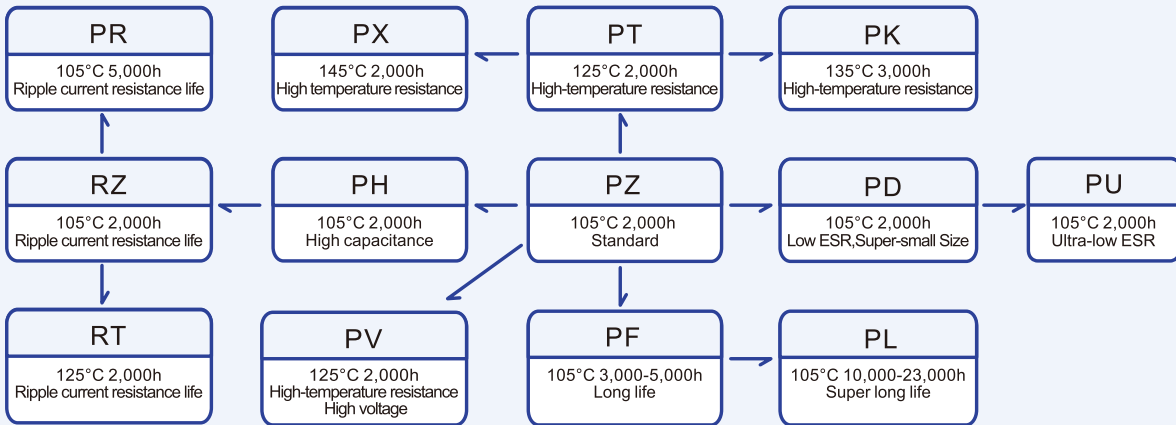
■ Compliant to AEC-Q200. Please contact Hunan Aihua Group Co., Ltd. for more details.

## Group Chart CONDUCTIVE POLYMER ALUMINUM SOLID CAPACITORS

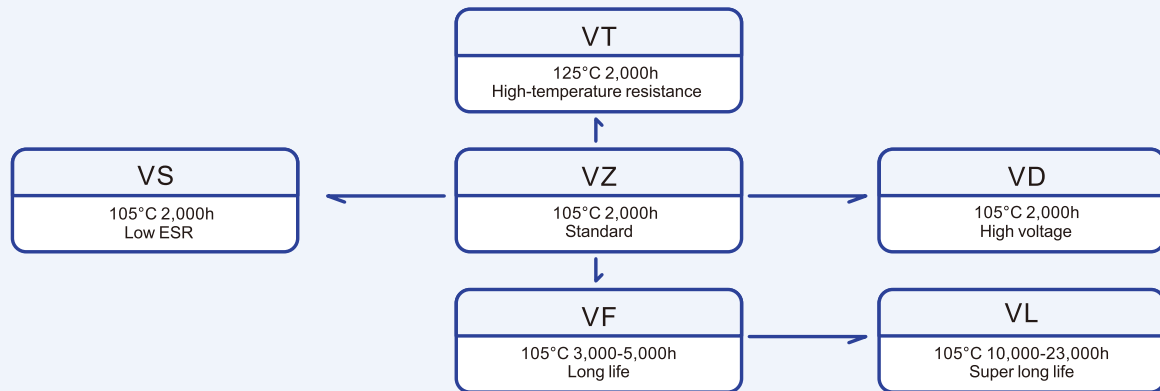
### MULTILAYER TYPE



### RADIAL TYPE



### SURFACE MOUNT TYPE



## CONDUCTIVE POLYMER HYBRID ALUMINUM ELECTROLYTIC CAPACITORS

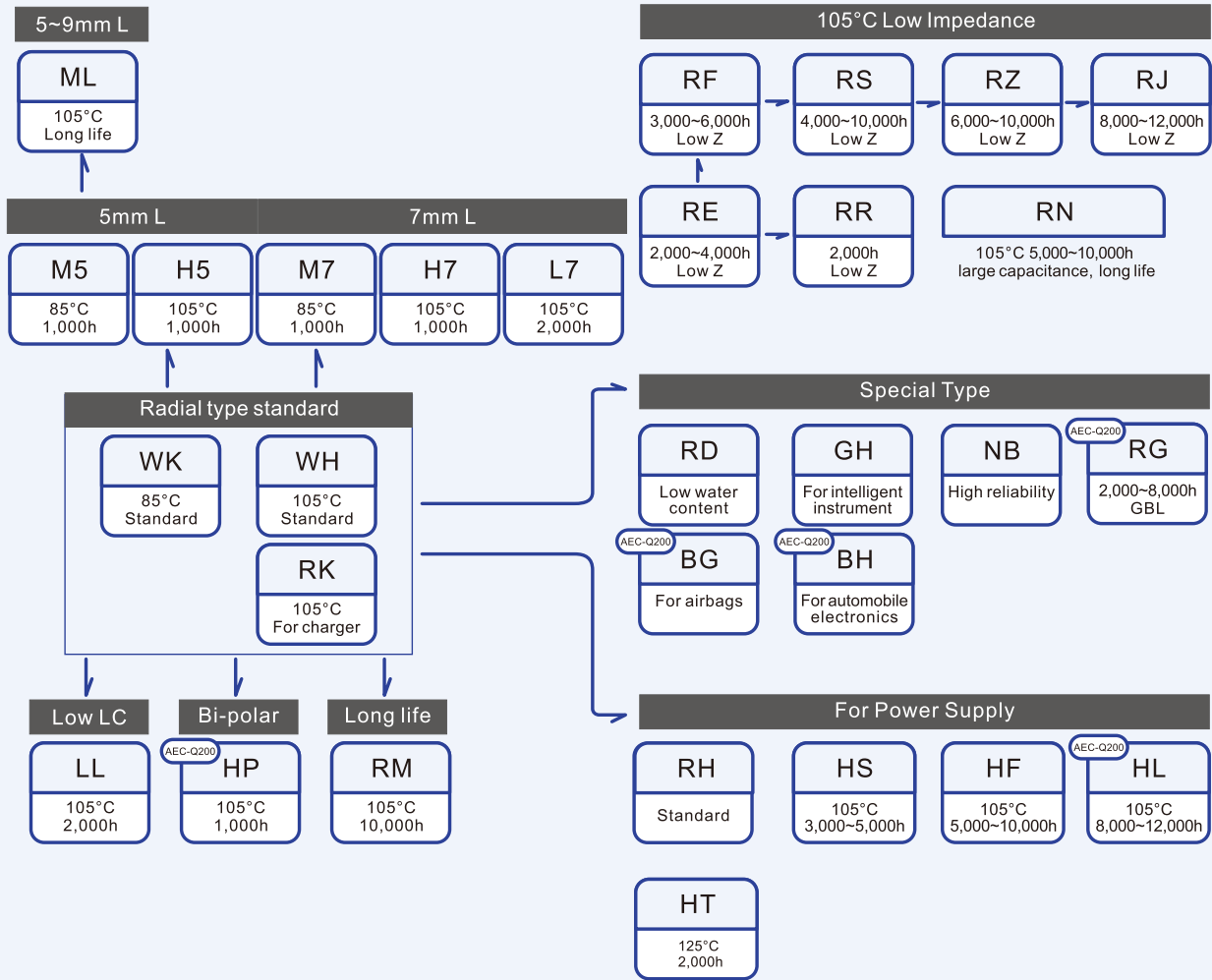
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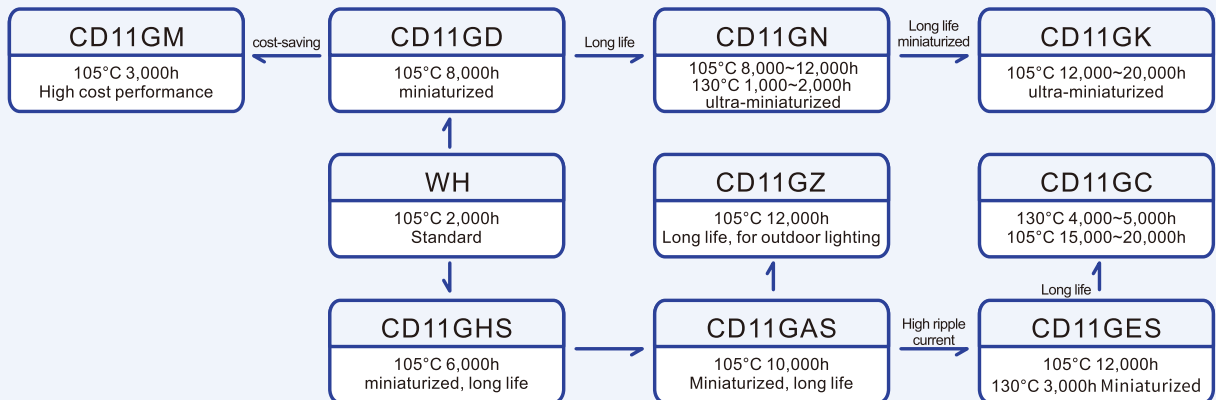
### SURFACE MOUNT TYPE



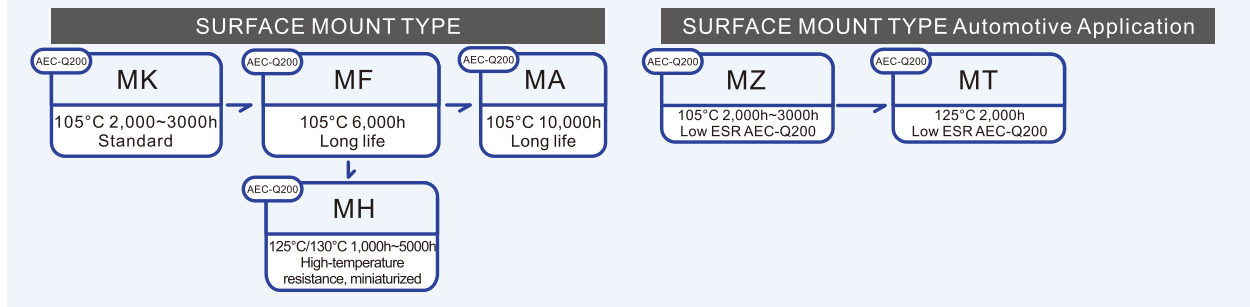
■ RADIAL TYPE



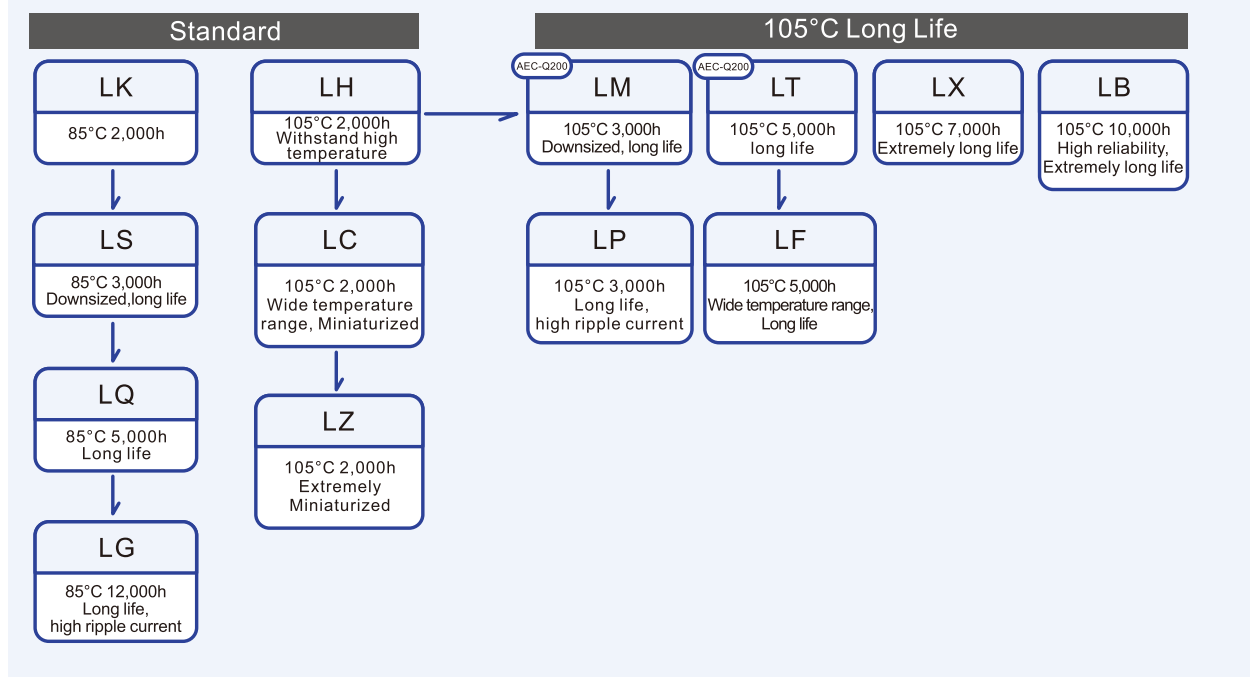
■ FOR LIGHTING APPLICATION



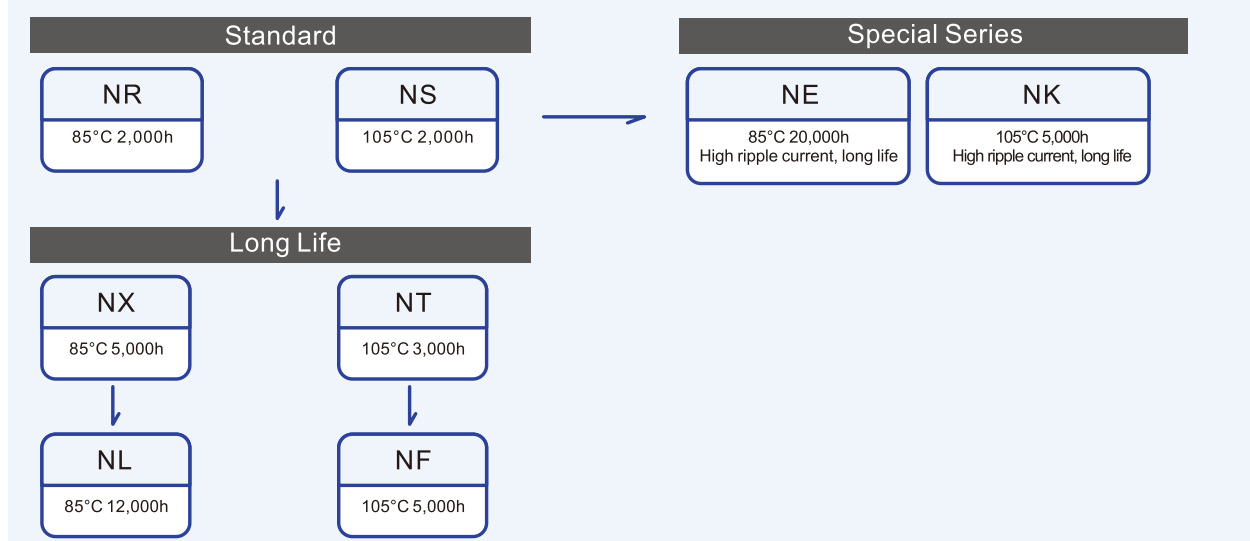
■ SMD TYPE



■ SNAP-IN & LUG TERMINAL TYPE



■ SCREW-MOUNT TERMINAL TYPE



■ Failure Modes

Aluminum Electrolytic Capacitors Show Various Failure Modes in Different Applications

