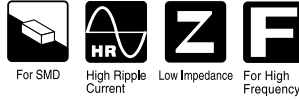
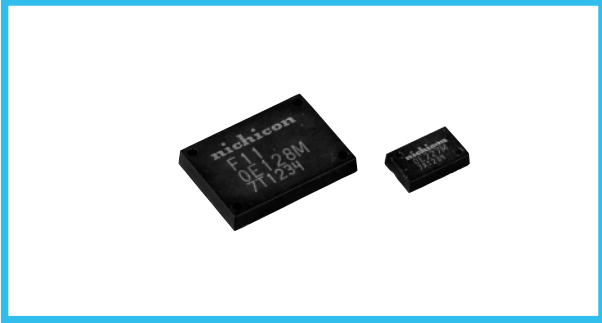


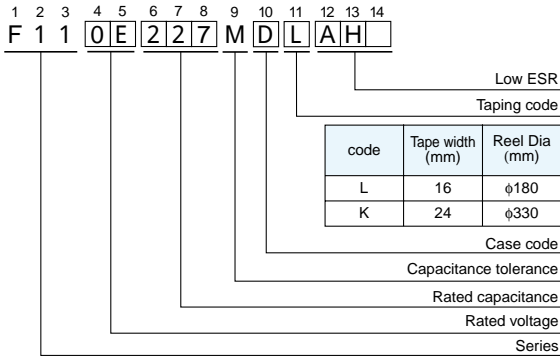
F11



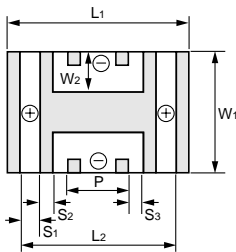
- Higher Capacitance.
- Low ESR, Low ESL, High ripple current.
- Resin-molded Chip.
- Designed for surface mounting on high density PC board.
- Load life of 5000 hours at +105°C.
- Compliant to the RoHS directive (2002/95/EC).



Type numbering system (Example : 2.5V 220μF)

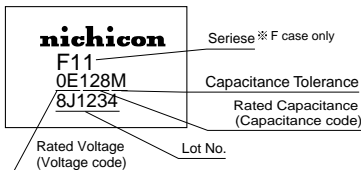


Dimensions



| Case Code | L ₁ | L ₂ | W ₁ | W ₂ | H | S ₁ | S ₂ | S ₃ | P |
|-----------|----------------|----------------|----------------|----------------|---------|----------------|----------------|----------------|-----------|
| D | 8.5 ± 0.2 | 7.3 ± 0.2 | 5.3 ± 0.2 | 1.7 ± 0.2 | 2.0MAX. | 0.9 ± 0.2 | 0.6 ± 0.2 | 0.5 ± 0.2 | 3.3 ± 0.2 |
| F | 16.7 ± 0.2 | 15.6 ± 0.2 | 12.1 ± 0.2 | 3.6 ± 0.2 | 2.5MAX. | 1.5 ± 0.1 | 1.3 ± 0.1 | 1.5 ± 0.2 | 7.0 ± 0.2 |

Marking



Specifications

| Item | Performance Characteristics | | |
|------------------------------------|--|---|---|
| Category Temperature Range | -55 to +105°C | | |
| Capacitance Tolerance | ±20% (at 120Hz) | | |
| Dissipation Factor | Refer to next table | | |
| ESR | Refer to next table | | |
| Leakage Current | After 5 minute's application of rated voltage, leakage current is not more than 0.1CV | | |
| Damp Heat (Steady State) | At 60°C 90%RH 500hours (No voltage applied) | | |
| | Capacitance Change·····Within -20 to +30% of the initial specified value | | |
| | Dissipation Factor·····200% or less than the Initial specified value | | |
| | ESR·····200% or less than the Initial specified value | | |
| Temperature Cycles | -55°C / +105°C 30minutes each 5cycle | | |
| | Capacitance Change·····Within ±20% of the Initial specified value | | |
| | Dissipation Factor·····200% or less than the Initial specified value | | |
| | ESR·····200% or less than the Initial specified value | | |
| Temperature Change Characteristics | -55°C | +105°C | |
| | Capacitance Change | Within -20 to +0% | Within -0 to +50% |
| | Dissipation Factor | Initial specified value or less | 150% or less than the Initial specified value |
| | ESR | Initial specified value or less | 150% or less than the Initial specified value |
| Resistance to Soldering Heat | Capacitor meets the following characteristics after solder reflow (Peak: 240°C for 10sec, 2cycle). Temperature should be measured at the terminals. | | |
| | Capacitance Change····· | Within ±20% of the Initial specified value | |
| | Dissipation Factor····· | Initial specified value or less | |
| | ESR····· | Initial specified value or less | |
| Surge | After application of 115% of rating voltage at the rate of 30 seconds ON, 30 seconds OFF, for 1000 successive test cycles at 105°C, capacitors meet the characteristics requirements listed below. | | |
| | Capacitance Change····· | Within ±20% of the initial specified value | |
| | Dissipation Factor····· | 200% or less than the Initial specified value | |
| | ESR····· | 200% or less than the Initial specified value | |
| Endurance | After 5000 hours' application of rated voltage at 105°C, they will meet the specified value for life characteristics listed below. | | |
| | Capacitance Change····· | Within ±20% of the initial value | |
| | Dissipation Factor····· | 200% or less than the Initial specified value | |
| | ESR····· | 200% or less than the Initial specified value | |
| Marking | Printed on the package top. | | |

Standard ratings

| Cap.(μF) | Code | V | | |
|----------|------|-----|-----|-----|
| | | 2.5 | 4 | 6.3 |
| 47 | 476 | 0E | 0G | 0J |
| 100 | 107 | D | D | (D) |
| 220 | 227 | D | (D) | |
| 330 | 337 | (D) | | |
| 600 | 607 | F | | F |
| 800 | 807 | | F | |
| 1200 | 128 | F | | |

() The series in parentheses are being developed. Please contact to your local Nichicon sales office when these series are being designed in your application.

F11

■ Ratings Table

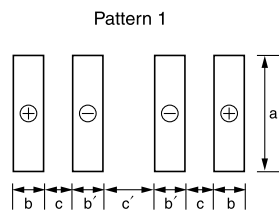
< Standard >

| Rated Volt (V) | Rated Capacitance (μF) | Case code | Part Number | Leakage Current (μA) | Dissipation Factor (% @ 120Hz) | ESR (mΩ @ 100kHz) | Rated Ripple (Arms @ 100kHz) |
|----------------|------------------------|-----------|-------------|----------------------|--------------------------------|-------------------|------------------------------|
| 2.5 | 100 | D | F110E107MDL | 25 | 5 | 20.0 | 3.5 |
| | 220 | D | F110E227MDL | 55 | 5 | 20.0 | 3.5 |
| | 600 | F | F110E607MFK | 150 | 10 | 5.0 | 6.3 |
| | 1200 | F | F110E128MFK | 300 | 10 | 5.0 | 6.3 |
| 4 | 47 | D | F110G476MDL | 19 | 5 | 20.0 | 3.5 |
| | 100 | D | F110G107MDL | 40 | 5 | 20.0 | 3.5 |
| | 800 | F | F110G807MFK | 320 | 10 | 5.0 | 6.3 |
| 6.3 | 47 | D | F110J476MDL | 30 | 5 | 20.0 | 3.5 |
| | 600 | F | F110J607MFK | 378 | 10 | 5.0 | 6.3 |

< Low ESR >

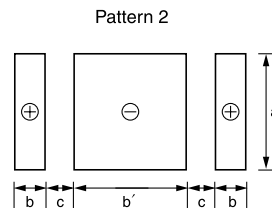
| Rated Volt (V) | Rated Capacitance (μF) | Case code | Part Number | Leakage Current (μA) | Dissipation Factor (% @ 120Hz) | ESR (mΩ @ 300kHz) | Rated Ripple (Arms @ 300kHz) |
|----------------|------------------------|-----------|----------------|----------------------|--------------------------------|-------------------|------------------------------|
| 2.5 | 220 | D | F110E227MDLAH1 | 55 | 5 | 12.0 | 4.5 |
| | 1200 | F | F110E128MFKAH3 | 300 | 10 | 1.5 | 11.5 |
| 4 | 100 | D | F110G107MDLAH1 | 40 | 5 | 15.0 | 4.0 |
| 6.3 | 47 | D | F110J476MDLAH1 | 30 | 5 | 15.0 | 4.0 |

■ Layout Land Pattern (Example)



(mm)

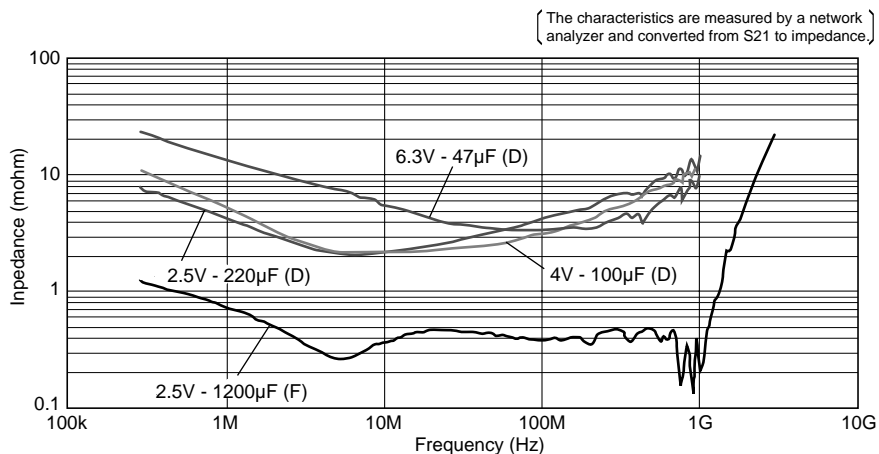
| Case | a | b | b' | c | c' |
|------|-----|-----|-----|-----|-----|
| D | 5.5 | 1.4 | 1.2 | 0.5 | 1.9 |
| F | 14 | 1.8 | 1.8 | 1.2 | 6.6 |



(mm)

| Case | a | b | b' | c' |
|------|-----|-----|------|-----|
| D | 5.5 | 1.0 | 4.3 | 0.6 |
| F | 14 | 1.8 | 10.2 | 1.2 |

■ Frequency characteristic



< Notice > The graph illustrates representative data. Please use this for reference only.