

# F38 Series



## Conductive Polymer, Miniature, Undertab



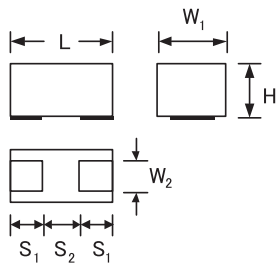
### FEATURES

- Compliant to the RoHS2 directive 2011/65/EU
- SMD facedown
- Small and low profile



### APPLICATIONS

- Smartphone
- Tablet PC
- Wireless module
- Portable game

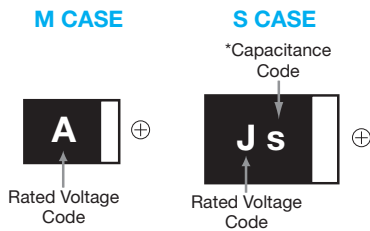


### CASE DIMENSIONS: millimeters (inches)

| Code | L  | W <sub>1</sub>   | W <sub>2</sub>             | H                                       | S <sub>1</sub>             | S <sub>2</sub>             |
|------|--|--|----------------------------|---|----------------------------|----------------------------|
| M    | 1.60 <sup>+0.20</sup> <sub>-0.10</sub><br>(0.063 <sup>+0.008</sup> <sub>-0.004</sub> ) | 0.85 <sup>+0.20</sup> <sub>-0.10</sub><br>(0.033 <sup>+0.008</sup> <sub>-0.004</sub> ) | 0.65±0.10<br>(0.026±0.004) | 0.80±0.10 <sup>*</sup><br>(0.031±0.004) | 0.50±0.10<br>(0.020±0.004) | 0.60±0.10<br>(0.024±0.004) |
| S    | 2.00 <sup>+0.20</sup> <sub>-0.10</sub><br>(0.079 <sup>+0.008</sup> <sub>-0.004</sub> ) | 1.25 <sup>+0.20</sup> <sub>-0.10</sub><br>(0.049 <sup>+0.008</sup> <sub>-0.004</sub> ) | 0.90±0.10<br>(0.035±0.004) | 0.80±0.10<br>(0.031±0.004)              | 0.50±0.10<br>(0.020±0.004) | 1.00±0.10<br>(0.039±0.004) |

\*1 F380J476MMAAXE: 1.0mm Max.

### MARKING



### HOW TO ORDER

**F38** | **1A** | **225** | **M** | **M** | |

**Type** | **Rated Voltage** | **Capacitance Code** | **Tolerance** | **Case Size** | **Packaging** | **Special Code**

pF code: 1st two digits represent significant figures, 3rd digit represents multiplier (number of zeros to follow)

M = ±20%

|                 |                 |
|-----------------|-----------------|
| Reel Dia (φ180) | Tape Width (mm) |
| A               | 8               |

AXE = Rated temperature 60°C and H dimension 1.0mm Max.  
LZT = Rated temperature 60°C only

### TECHNICAL SPECIFICATIONS

|                             |  |
|-----------------------------|--|
| Category Temperature Range: | -55 to +105°C  |
| Rated Temperature:          | +85°C (*2)   |
| Capacitance Tolerance:      | ±20% at 120Hz  |
| Dissipation Factor:         | Refer to next page (120Hz)   |
| ESR 100kHz:                 | Refer to next page (120Hz)   |
| Leakage Current:            | Refer to next page<br>At 20°C after application of rated voltage for 5 minutes<br>Provided that:<br>After 5 minute's application of rated voltage, leakage current at 105°C<br>10 times or less than 20°C specified value. |

\*2 F380J476MMAAXE: Rated temperature +60°C Surge, endurance test temperature +60°C



# F38 Series



## Conductive Polymer, Miniature, Undertab

### CAPACITANCE AND RATED VOLTAGE RANGE (LETTER DENOTES CASE SIZE)

| Capacitance |      | Rated Voltage |                   |          | *Cap Code |
|-------------|------|---------------|-------------------|----------|-----------|
| µF          | Code | 4V (0G)       | 6.3V (0J)         | 10V (1A) |           |
| 2.2         | 225  |               |                   | M        | -         |
| 4.7         | 475  |               |                   | M        | -         |
| 10          | 106  |               | M                 | M        | a         |
| 22          | 226  |               | M/S               | S        | j         |
| 33          | 336  |               | M**/S             |          | n         |
| 47          | 476  |               | M <sup>4</sup> /S |          | s         |
| 68          | 686  |               | S**               |          | w         |
| 100         | 107  | S*            |                   |          | A         |

Available Ratings

\*Codes under development – subject to change

<sup>4</sup> Rated temperature 60°C and H dimension 1.0mm Max only. Please contact AVX when you need detail spec.

\*\*Rated temperature 60°C only. Please contact AVX when you need detail spec.

Please contact to your local AVX sales office when these series are being designed in your application.

### RATINGS & PART NUMBER REFERENCE

| AVX Part No.                | Case Size | Capacitance (µF) | Rated Voltage (V) | Leakage Current (µA) | DF (%) @ 120Hz | ESR (mΩ) @ 100kHz | 100kHz RMS Current (mA) 20°C | *3 ΔC/C (%) |
|-----------------------------|-----------|------------------|-------------------|----------------------|----------------|-------------------|------------------------------|-------------|
| <b>6.3 Volt</b>             |           |                  |                   |                      |                |                   |                              |             |
| F380J106MMA                 | M         | 10               | 6.3               | 10.0                 | 8              | 500               | 224                          | *           |
| F380J226MMA                 | M         | 22               | 6.3               | 13.9                 | 10             | 500               | 224                          | *           |
| F380J226MSA                 | S         | 22               | 6.3               | 13.9                 | 10             | 200               | 474                          | *           |
| F380J336MMALZT              | M         | 33               | 6.3               | 41.6                 | 10             | 500               | 224                          | *           |
| F380J336MSA                 | S         | 33               | 6.3               | 20.8                 | 10             | 200               | 474                          | *           |
| F380J476MMAAXE <sup>4</sup> | M         | 47               | 6.3               | 59.2                 | 10             | 500               | 224                          | *           |
| F380J476MSA                 | S         | 47               | 6.3               | 29.6                 | 10             | 200               | 474                          | *           |
| F380J686MSALZT              | S         | 68               | 6.3               | 86.0                 | 10             | 200               | 474                          | *           |
| <b>10 Volt</b>              |           |                  |                   |                      |                |                   |                              |             |
| F381A225MMA                 | M         | 2.2              | 10                | 10.0                 | 6              | 500               | 224                          | *           |
| F381A475MMA                 | M         | 4.7              | 10                | 10.0                 | 6              | 500               | 224                          | *           |
| F381A106MMA                 | M         | 10               | 10                | 10.0                 | 15             | 500               | 224                          | *           |
| F381A226MSA                 | S         | 22               | 10                | 22.0                 | 10             | 200               | 474                          | *           |

\*3: ΔC/C Marked “\*”

| Item                        | All Case (%) |
|-----------------------------|--------------|
| Damp Heat, steady state     | -20 to +30   |
| Rapid change of temperature | ±20          |
| Resistance soldering heat   | ±20          |
| Surge                       | ±20          |
| Endurance                   | ±20          |

### THE CORELATIONS AMONG RATED VOLTAGE, SURGE VOLTAGE AND DERATED VOLTAGE

|                           | F38 (Standard) |    | F38-AXE |
|---------------------------|----------------|----|---------|
| Rated Voltage (V)         | 6.3            | 10 | 6.3     |
| 60°C Surge Voltage (V)    | -              | -  | 8       |
| 85°C Surge Voltage (V)    | 8              | 13 | -       |
| 85°C Derated Voltage (V)  | -              | -  | 4.5     |
| 105°C Derated Voltage (V) | 5              | 8  | 3.3     |



### QUALIFICATION TABLE

| TEST                                | F38 series (Temperature range -55°C to +105°C)   |  |
|-------------------------------------|--|--|
|                                     | Condition  |  |
| <b>Damp Heat (Steady State)</b>     | At 40°C, 90 to 95% R.H., 500 hours (No voltage applied)<br>Capacitance Change ..... Refer to page 123 (*3)<br>Dissipation Factor ..... 200% or less of initial specified value<br>Leakage Current ..... 300% or less of Initial specified value  |  |
| <b>Temperature Cycles</b>           | At -55°C / +105°C, 30 minutes each, 5 cycles<br>Capacitance Change ..... Refer to page 123 (*3)<br>Dissipation Factor ..... 200% or less of initial specified value<br>Leakage Current ..... 400% or less of initial specified value   |  |
| <b>Resistance to Soldering Heat</b> | 10 seconds reflow at 240°C<br>Capacitance Change ..... Refer to page 123 (*3)<br>Dissipation Factor ..... 200% or less of initial specified value<br>Leakage Current ..... 300% or less of initial specified value   |  |
| <b>Surge</b>                        | After application of surge voltage in series with a 1kΩ resistor at the rate of 30 seconds ON, 30 seconds OFF, for 1000 successive test cycles at 85°C (*2), capacitors shall meet the characteristic requirements in the table above.<br>Capacitance Change ..... Refer to page 123 (*3)<br>Dissipation Factor ..... 200% or less of initial specified value<br>Leakage Current ..... 300% or less of initial specified value |  |
| <b>Endurance</b>                    | After 1000 hours' application of rated voltage in series with a 3Ω resistor at 85°C (*2), capacitors shall meet the characteristic requirements in the table above.<br>Capacitance Change ..... Refer to page 123 (*3)<br>Dissipation Factor ..... 200% or less of initial specified value<br>Leakage Current ..... 400% or less of initial specified value  |  |
| <b>Shear Test</b>                   | After applying the pressure load of 5N for 10±1 seconds horizontally to the center of capacitor side body which has no electrode and has been soldered beforehand on a substrate, there shall be found neither exfoliation nor its sign at the terminal electrode.   |  |
| <b>Terminal Strength</b>            | Keeping a capacitor surface-mounted on a substrate upside down and supporting the substrate at both of the opposite bottom points 45mm apart from the center of capacitor, the pressure strength is applied with a specified jig at the center of substrate so that the substrate may bend by 1mm as illustrated. Then, there shall be found no remarkable abnormality on the capacitor terminals.                             |  |

\*2 F380J476MMAAXE: Rated temperature +60°C Surge, endurance test temperature +60°C

**NOTICE: DESIGN, SPECIFICATIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE.**

## Данный компонент на территории Российской Федерации

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<http://moschip.ru/get-element>

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Сотрудничество с глобальными дистрибьюторами электронных компонентов, предоставляет возможность заказывать и получать с международных складов практически любой перечень компонентов в оптимальные для Вас сроки.

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Система менеджмента качества компании отвечает требованиям в соответствии с ГОСТ Р ИСО 9001, ГОСТ РВ 0015-002 и ЭС РД 009

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