F38 Series

Conductive Polymer, Miniature, Undertab

LEAD-FREE

LEAD-FREE COMPATIBLE COMPONENT

RoHS COMPLIANT

FEATURES

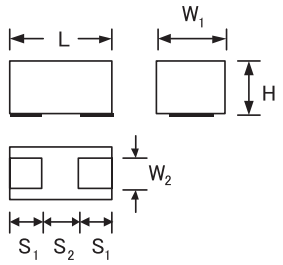
- Compliant to the RoHS2 directive 2011/65/EU
- SMD facedown
- Small and low profile

APPLICATIONS

- Smartphone
- Tablet PC
- Wireless module
- Portable game

CASE DIMENSIONS: millimeters (inches)

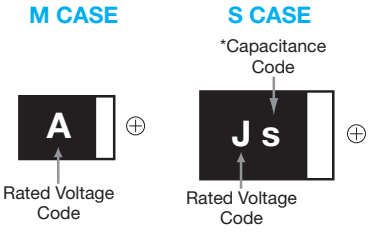
Code	L	W_1	W_2	H	S_1	S_2
M	1.60 $^{+0.20}_{-0.10}$ (0.063 $^{+0.008}_{-0.004}$)	0.85 $^{+0.20}_{-0.10}$ (0.033 $^{+0.008}_{-0.004}$)	0.65±0.10 (0.026±0.004)	0.80±0.10 (0.031±0.004)	0.50±0.10 (0.020±0.004)	0.60±0.10 (0.024±0.004)
S	2.00 $^{+0.20}_{-0.10}$ (0.079 $^{+0.008}_{-0.004}$)	1.25 $^{+0.20}_{-0.10}$ (0.049 $^{+0.008}_{-0.004}$)	0.90±0.10 (0.035±0.004)	0.80±0.10 (0.031±0.004)	0.50±0.10 (0.020±0.004)	1.00±0.10 (0.039±0.004)



TECHNICAL SPECIFICATIONS

Item	Performance Characteristics
Category Temperature Range	-55 to +105°C (Rated temperature: +85°C)
Capacitance Tolerance	±20% (at 120Hz)
Dissipation Factor	Refer to next page
ESR (100kHz)	Refer to next page
Leakage Current	Refer to the table below Povided that • After 5 minute's application of rated voltage, leakage current at 105°C, 10 times or less than 20ºC specified value
Capacitance Change by Temperature	+15% Max. (at +125°C) +10% Max. (at +85°C) -10% Max. (at -55°C)
Damp Heat (Steady State)	At 40°C, 90 to 95% R.H., 500 hours (No voltage applied) Capacitance Change ..... Refer to next page (*1) Dissipation Factor ..... 200% or less of initial specified value Leakage Current ..... 300% or less of initial specified value
Temperature Cycles	At -55°C / +105°C, For 30 minutes each, 5 cycles Capacitance Change ..... Refer to next page (*1) Dissipation Factor ..... 200% or less of initial specified value Leakage Current ..... 400% or less of initial specified value
Resistance to Soldering Heat	10 seconds reflow at 240°C Capacitance Change ..... Refer to next page (*1) Dissipation Factor ..... 200% or less of initial specified value Leakage Current ..... 300% or less of initial specified value
Surge	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 85ºC, capacitors meet the characteristic requirements table below. Capacitance Change ..... Refer to next page (*1) Dissipation Factor ..... 200% or less of initial specified value Leakage Current ..... 300% or less of initial specified value
Endurance	After 1000 hours' application of rated voltage in series with a 3Ω resistor at 85°C, capacitors meet the characteristic requirements table below. Capacitance Change ..... Refer to next page (*1) Dissipation Factor ..... 200% or less of initial specified value Leakage Current ..... 400% or less of initial specified value
Shear Test	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. 5N (0.51kg · f) For 10±1 seconds
Terminal Strength	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. R230 20 1mm 45 45

MARKING



HOW TO ORDER

F38 — **Type**

1A — **Rated Voltage**

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

M — **Tolerance**
M = ±20%

M — **Case Size**
See table above

□ — **Packaging**

Reel Dia (ϕ180)	Tape Width (mm)
A	B

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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		S		n
47	476		M*/S		s
100	107	S*			A

Available Ratings

*Codes under development – subject to change

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

RATINGS & PART NUMBER REFERENCE

AVX Part Number	Case Size	Cap (µF)	Rated Voltage (V)	*2 Leakage Current (µA)	Disspation Factor (%@120Hz)	ESR (mΩ@100kHz)	Ripple Current (mArms@100kHz, 20°C)	*1 ΔC/C (%)
6.3 Volt								
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	*
F380J336MSA	S	33	6.3	20.8	10	200	474	*
F380J476MSA	S	47	6.3	29.6	10	200	474	*
10 Volt								
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	*

*1: ΔC/C Marked "∗"

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

*2: Leakage Current
After 5 minute's application of rated voltage, leakage current at 20°C.

THE CORELATIONS AMONG RATED VOLTAGE, SURGE VOLTAGE AND DERATED VOLTAGE

Rated Voltage (V)	6.3	10
85°C Surge Voltage (V)	8	13
105°C Derated Voltage (V)	5	8

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