

Alchip[®] MFZ Series

Solid Electrolyte, High CV Product + 105°C, Surface Mount

- Manganese dioxide is used as electrolyte.
- Excellent high frequency characteristics. Maximum ESR is specified at 500kHz.
- Longer life than a liquid electrolyte type.
- High heat resistance.
- 50% increasing capacitance in comparison with MFX series.
- For reflow soldering and precautions for users, see page 52.

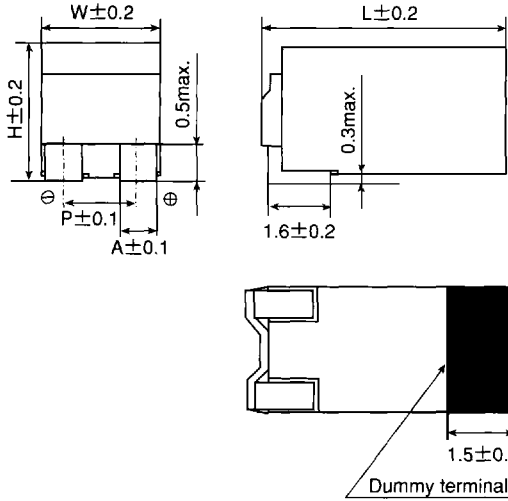


◆ SPECIFICATIONS

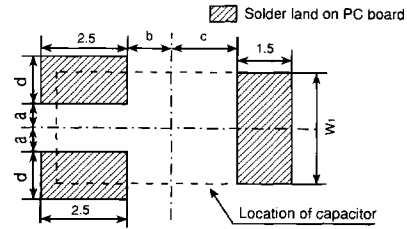
Items	Characteristics
Operating Temperature Range	-55 to +105°C
Rated Voltage Range	4 to 20V _{dc} at 85°C (For the maximum operating voltage at 105°C, see STANDARD RATINGS.)
Capacitance Tolerance	±20%(M) (at 20°C, 120Hz)
Leakage Current	I=0.1CV (after 2 minutes at 20°C) Where, I : Max. leakage current (μA), C : Nominal capacitance (μF), V : Rated voltage (V)
Dissipation Factor (tan δ)	0.12max. (at 20°C, 120Hz)
Low Temperature Characteristics	Maximum impedance ratio at 500kHz to the 20°C value : Z(-25°C) / Z(20°C) ≤ 1.5 Z(-55°C) / Z(20°C) ≤ 2.0
Load Life	After the capacitors are subjected to DC voltage at 85°C or 105°C for 1,000 hours with the specified rated max. ripple current applied and then restored to 20°C, the following specifications shall be satisfied. The sum of DC voltage and peak AC voltage must not exceed the max. operating voltage specified at the specified temperature. Capacitance change ≤ ±10% of the initial value DF (tan δ) ≤ 150% of the initial specified value Leakage current ≤ The initial specified value ESR ≤ 150% of the initial specified value Appearance No significant damage
Bias Humidity	The following specifications shall be satisfied when the capacitors are restored to 20°C after subjecting them to the DC rated voltage at 60°C, 90 to 95%RH for 500 hours. Capacitance change ≤ ±10% of the initial value DF (tan δ) ≤ 150% of the initial specified value Leakage current ≤ The initial specified value ESR ≤ 150% of the initial specified value Appearance No significant damage
Surge Voltage	The surge voltage shall not exceed 115% of the maximum operating voltage differently specified at each temperature on STANDARD RATINGS. The capacitors shall be subjected to 1,000 cycles each consisting of a charge with the surge voltage specified at 85°C or 105°C for 30 seconds through a protective resistor with a value such that RC=0.1±0.05 seconds, followed by a discharge period of 5-1/2 minutes through a resistor with the same value. Then, the following specifications shall be satisfied when the capacitors are restored to 20°C. Capacitance change ≤ ±5% of the initial value DF (tan δ) ≤ The initial specified value Leakage current ≤ The initial specified value ESR ≤ The initial specified value Appearance No significant damage
Reverse Voltage	The capacitors shall be subjected to 15% of the rated voltage at 85°C, or 15% of the maximum operating voltage at 105°C, in the reserve polarity direction for 125 hours, and shall be subjected to the rated voltage at 85°C, or the maximum operating voltage at 105°C, in the forward polarity direction for 125 hours. The following specifications shall be satisfied when the capacitors are restored to 20°C. Capacitance change ≤ ±10% of the initial value DF (tan δ) ≤ The initial specified value Leakage Current ≤ The initial specified value ESR ≤ The initial specified value Appearance No significant damage
Terminal Shock	After the capacitors are subjected to -55°C, for 30 minutes and +125°C for 30 minutes for 5 cycles, they shall be conducted in accordance with the load life test or bias humidity test specified above.
Failure Rate	1% per 1,000 hours maximum (Confidence level 60%)
Others	IEC 384-18-1 (Fixed Aluminum Electrolytic Chip Capacitors With Solid Electrolyte)

Alchip[®] **MFZ** Series

◆ DIMENSIONS (mm)



Recommended solder land on PC board



Case code	L	W	H	P	A	a	b	c	d	W _l
D6	6.4	4.6	4.6	3.3	1.1	0.8	1.15	1.7	1.7	4.6
E8	8.4	5.7	5.7	4.0	1.5	0.95	2.15	2.7	2.1	5.7

* The dummy terminal on the plastic body is coated with hardened copper paste. It is not purpose to lessen mechanical shock and vibration, but it is for preventing the body from sliding on the PC board during reflow soldering. (Applying mechanical stress to a soldered capacitor may cause the body to detach from the PC board.)

SMD

◆ STANDARD RATINGS

Rated voltage (V _{dc})	Capacitance (μF)	Case code	Max. ESR 20°C 500kHz (mΩ)	Operating temperature (°C)	Max. operating voltage (V _{dc})	Max. ripple current (mA _{rms})		
						500kHz	300kHz	100kHz
4	27	D6	270	86 to 105	3.2	320	300	270
				61 to 85	4	500	480	440
				46 to 60	4	570	540	490
	56	E8	180	to 45	4	660	630	570
				86 to 105	3.2	390	370	350
				61 to 85	4	580	550	530
22		D6	270	46 to 60	4	700	660	630
				to 45	4	810	770	740
				86 to 105	5	320	300	270
	47	E8	180	61 to 85	6.3	500	480	440
				46 to 60	6.3	570	540	490
				to 45	6.3	660	630	570
15		D6	270	86 to 105	5	390	370	350
				61 to 85	6.3	580	550	530
				46 to 60	6.3	700	660	630
	33	E8	180	to 45	6.3	810	770	740
				86 to 105	8	320	300	270
				61 to 85	10	500	480	440
6.8		D6	425	46 to 60	10	570	540	490
				to 45	10	660	630	570
				86 to 105	13	130	110	100
	15	E8	270	61 to 85	16	190	170	150
				46 to 60	16	220	200	180
				to 45	16	250	230	200
3.3		E8	270	86 to 105	16	320	300	270
				61 to 85	16	500	480	440
				46 to 60	16	570	540	490
	20	E8	270	to 45	16	660	630	570
				86 to 105	20	320	300	270
				61 to 85	20	500	480	440
46 to 60				20	570	540	490	

◆ PART NUMBERING SYSTEM

