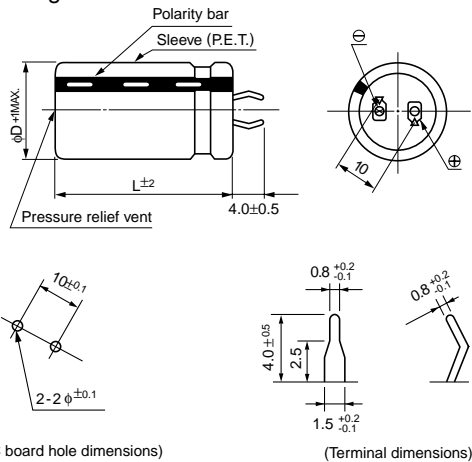


- Excellent in voltage holding property.
- Suitable for quick charge and discharge.
- Wide temperature range (−25°C to +60°C).
- Compliant to the RoHS directive (2002/95/EC).

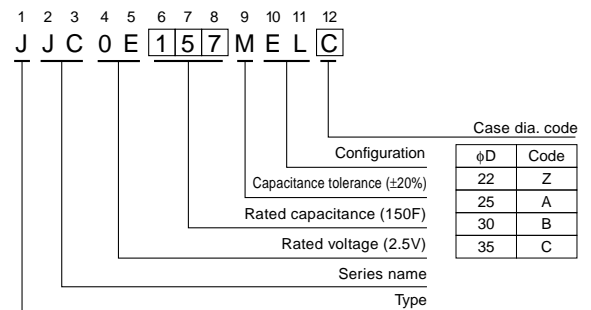
## Specifications

Item	Performance Characteristics	
Category Temperature Range	−25 to +60°C	
Rated Voltage Range	2.5V	
Rated Capacitance Range	15 to 150F See Note	
Capacitance Tolerance	±20% (20°C)	
Leakage Current	0.5C (mA) [ C : Rated Capacitance(F) ] (After 30 minutes' application of rated voltage, 2.5V)	
Stability at Low Temperature	Capacitance (−25°C) / Capacitance (+20°C) ×100 ≥ 70%	
ESR, DCR*	Refer to the list below (20°C). *DC internal resistance	
Endurance	The specifications listed at right shall be met when the capacitors are restored to 20°C after the rated voltage is applied for 2000 hours at 60°C.	
	Capacitance change	Within ±30% of the initial capacitance value
	ESR	300% or less than the initial specified value
Shelf Life	The specifications listed at right shall be met when the capacitors are restored to 20°C after storing the capacitors under no load for 2000 hours at 60°C.	
	Capacitance change	Within ±30% of the initial capacitance value
	ESR	300% or less than the initial specified value
Leakage current	Less than or equal to the initial specified value	
	Capacitance change	Within ±30% of the initial capacitance value
	ESR	300% or less than the initial specified value
Marking	Printed with white color letter on black sleeve.	

## Drawing



## Type numbering system (Example : 2.5V 150F)



## Dimensions

Rated Voltage (code)	Cap. (F)	Cap. code	ESR(mΩ) (at 1kHz)	DCR* Typical (mΩ)	Case size φD×L (mm)			
					φ22 (Z)	φ25 (A)	φ30 (B)	φ35 (C)
2.5V (0E)	15	156	120	160	22×20			
	18	186	120	140		25×20		
	22	226	90	130			30×20	
	27	276	90	110	22×30		30×20	
	33	336	80	90		25×30		35×20
	39	396	80	80	22×35	25×30		35×20
	47	476	70	60	22×40	25×35		
	56	566	70	50		25×40	30×30	
	68	686	60	45				35×30
	82	826	60	35		25×50	30×40	
	100	107	50	30				35×35
	120	127	50	25			30×50	35×40
	150	157	40	22				35×50

### Note :

The capacitance calculated from discharge time (ΔT) with constant current ( i ) after 30minute charge with rated voltage (2.5V).

The discharge current ( i ) is 0.01 × rated capacitance (F). The discharge time (ΔT) measured between 2V and 1V with constant current.

The capacitance calculated bellow.

$$\text{Capacitance (F)} = i \times \Delta T$$

\* The listed DCR value is typical and therefore not a guaranteed value.