

## CHIP TYPE SERIES

# TS13CC

### FEATURES

- Load life of 5000 hours with temperature up to +125°C
- Case size from Ø12.5 to Ø16
- Lead-free reflow soldering is available subject to customers' request.

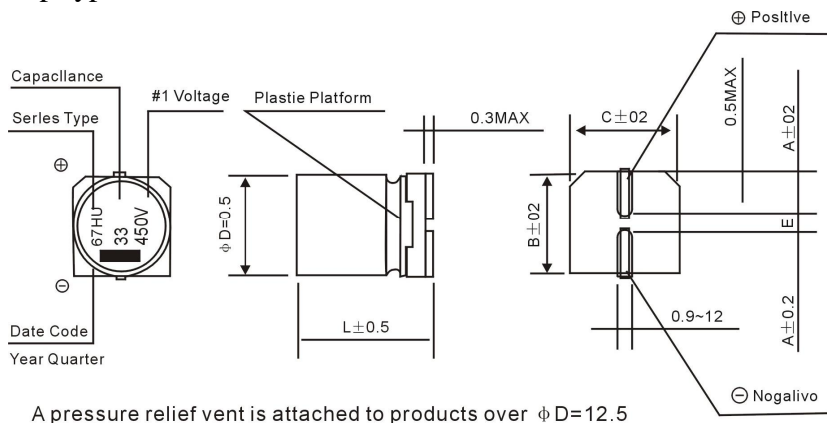
## Mid-To-High Voltage



### ◆ Specifications

ITEMS		PERFORMANCE CHARACTERISTICS					
Operating Temperature Range		-40°C ~ +125°C					
Voltage Range		160~450V					
Capacitance Range		3.3~68µF					
Capacitance Tolerance		±20% at 120Hz, 20°C					
Leakage Current		After 2 minutes' application of rated voltage, leakage current is not more than 0.04CV or 100µA					
Tan δ	Measurement frequency : 120Hz, Temperature : 20°C						
	Rated voltage (V)		160~250	400,450			
	Tan δ (MAX)	Ø12.5-Ø16	0.15	0.20			
Stability at Low Temperature	Measurement frequency : 120Hz						
	Rated voltage (V)		160	200	250	400	450
	Impedance ratio ZT / Z20 (MAX)	Ø12.5-Ø16	Z-25°C / Z+20°C	3	3	3	6
Load Life	After 5000 hours' application of rated voltage at 105°C, capacitors meet the characteristics requirements listed at right						
	Capacitance Change		Within ± 30% of initial value				
	Leakage Current		Initial specified value or less				
Self Life	After leaving capacitors under no load at 105°C for 1000 hours, they meet the specified value for load life characteristics listed above.						
	Capacitance Change		Within ± 10% of initial value				
	Tan δ		Initial specified value or less				
Resistance to Soldering Heat	After reflow soldering according and restored at room temperature, they meet the characteristics requirements listed at right.						
	Capacitance Change		Initial specified value or less				
	Leakage Current		Initial specified value or less				
Applicable Standards		JIS C-5141 and JIS C-5102					

### ◆ Chip type



D × L	Φ12.5×13.5	Φ12.5×16	Φ16×16.5
A	4.7	4.7	5.5
B	13.0	13.0	17.0
C	13.0	13.0	17.0
E±0.2	4.6	4.6	6.7
L	13.5	16.0	16.5

Re: Date code and series type—1st digit for Year; 2nd digit for Quarter, 4 quarter codes in one year are 1, 4, 7, 0; 3rd&4th characters for Series.

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### ◆ Standard size & Maximum permissible ripple current

WV		160		200		250		400		450	
Cap.(μF)		2C		2D		2E		2G		2W	
3.3	3R3									12.5×13.5	40
4.7	4R7					12.5×13.5	65	12.5×16	50	12.5×16	50
10	100			12.5×13.5	80	12.5×16	105	16×16.5	85	16×16.5	85
22	220	12.5×13.5	85	12.5×16	110	16×16.5	180				
33	330	12.5×13.5	95	16×16.5	220						
47	470	16×16.5	260								
68	680	16×21.5	320							CaseSize	Ripple Current

Ripple Current (mA rms) at 105°C 120Hz

### ◆ Frequency Coefficient Factor of Rated Ripple Current

Frequency	50Hz	120Hz	300Hz	1kHz	10kHz~
Coefficient	0.80	1.00	1.25	1.40	1.60

Note: Specification are subject to change without notice. For more detail and update, please visit our website.