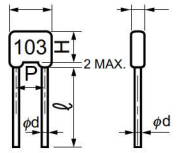
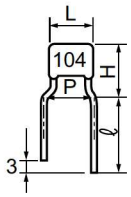
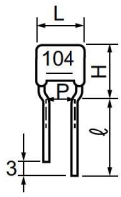
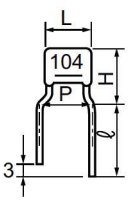
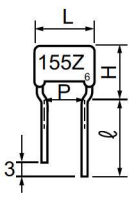
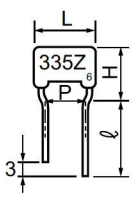
General-Purpose Leaded Type Y5V Temperature Characteristics

Features

- High dielectric constant that makes capacitors compact,with large capacitance
- Close-grained ceramic and superior film quality that ensure high reliability
- Internal electrode made of relatively inexpensive materials
- Suitable for use as bypass capacitor

Dimensions and Marking

Case Code	D33		D55		D47	D67
Lead Wire Pattern Symbol	21	51	21	51	53	51
Outline and Marking Samples						
Lead space	2.5±0.8	5.0±0.8	2.5±0.8	5.0±0.8		

Note 1: For thickness (T) of capacitors, please refer to the product list.

Case Code	Lead Wire Pattern Symbol	L max.	H max	r	φd	Marking
D33	21	3.5	3.0	20±4	0.4	Capacitance Code
D33	51	3.8	6.0	20±4	0.5	
D55	21	5.0	6.3	20±4	0.5	Capacitance Code
D55	51	5.0	6.3	20±4	0.5	Rated Voltage Symbol
D47	53	7.5	6.3	20±4	0.5	Capacitance Code Tolerance Symbol
D67	51	7.5	7.5	20±4	0.5	Rated Voltage Symbol Lot Symbol

Note 2: Rated voltages are designated by the following symbols:
——: 50 VDC
—: 16 VDC
None: 25 VDC

Specifications

Item		Specification	Test Conditions (JIS C 5102, 1994)
Operating Temperature		–25°C to +85°C	
Rated Voltage		16, 25, 50 VDC	
Withstanding Voltage		No insulation destruction or breakage should exist	Refer to paragraph 7.1 Applied voltage: Rated voltage×2 Application time: 1 to 5 sec. Charging and discharging currents: Less than 50mA
Capacitance Tolerance		Between +80 and –20%	
tan δ		Less than 0.05 (less than 0.07)*	Frequency for measurement: 1±0.1 kHz Temperature for measurement: 25°C Voltage for measurement: 1±0.2 Vrms
Insulation Resistance		Less than 0.047 μF: More than 10,000 MΩ Over 0.047 μF: More than 500 ΩF	
Temperature Characteristics		Between +22 and –82% (no applied voltage)	Measured one minute after a rated voltage has been applied
Vibration Resistance	Appearance	No abnormality	Paragraph 7.12 applies
	ΔC/C	Within initially specified value	Paragraph 8.2 applies Type of vibration: A
	tan δ	Less than 0.05 (less than 0.07)*	
Resistance to Soldering Heat	Appearance	No abnormality	Paragraph 8.5 applies Solder temperature: 270±5°C Dipping time: 5 ±1 sec. Depth of dipping: Dipped up to 2 - 2.5 mm from the root of the capacitor
	ΔC/C	Within ±20%	
	I.R.	More than initially specified value	
	Withstanding Voltage	No abnormality	
Temperature and Dipping Cycle	Appearance	No noticeable abnormality allowed	Paragraph 9.3 or 9.4 is applies Measured after having been left at room temperature for 48±2 hrs.
	ΔC/C	Within ±20%	
	tan δ	Less than 0.075 (less than 0.1)*	
	I.R.	More than either 1,000 MΩ or 50 ΩF depending on which one is smaller for the capacitor to be tested	
	Withstanding Voltage	No abnormality	
Humidity Resistance	Appearance	No noticeable abnormality allowed	Paragraph 9.5 applies Temperature: 40±2°C Relative Humidity: 90 - 95% RH Time: Between 500 +24 and 500 –0 hrs.
	ΔC/C	Within ±30%	
	tan δ	Less than 0.075 (less than 0.1)*	
	I.R.	More than either 1,000 MΩ or 50 ΩF depending on which one is smaller for the capacitor to be tested	
	Withstanding Voltage	No abnormality	
Humidity Resistance Load	Appearance	No noticeable abnormality allowed.	Paragraph 9.9 applies Temperature: 40±2°C Relative Humidity: 90 - 95% RH Voltage: Rated voltage Time: Between 500 +24 and 500 –0 hrs.
	ΔC/C	Within ±30%	
	tan δ	Less than 0.075 (less than 0.1)*	
	I.R.	More than either 500 MΩ or 25 ΩF depending on which one is smaller for the capacitor to be tested	
	Withstanding Voltage	No abnormality	
High-temperature Load	Appearance	No abnormality	Paragraph 9.10 applies Temperature: 85±2°C Voltage: Rated voltage × 2 Time: Between 100 +48 and 100 –0 hrs. Preprocessing: 85°C and 1hr has been applied to the capacitor, the capacitor is left for 24±1hr at ambient temperature
	ΔC/C	Within ±30%	
	tan δ	Less than 0.075 (less than 0.1)*	
	I.R.	More than either 1,000 MΩ or 50 ΩF depending on which one is smaller for the capacitor to be tested	
	Withstanding Voltage	No abnormality	
Others		Complies with Fixed Multilayer Magnetic Capacitor for Electronic Equipment JEITA RCR-2335	

Note: *Bracketed figures in tan δ ( ) are for 16-V capacitors.

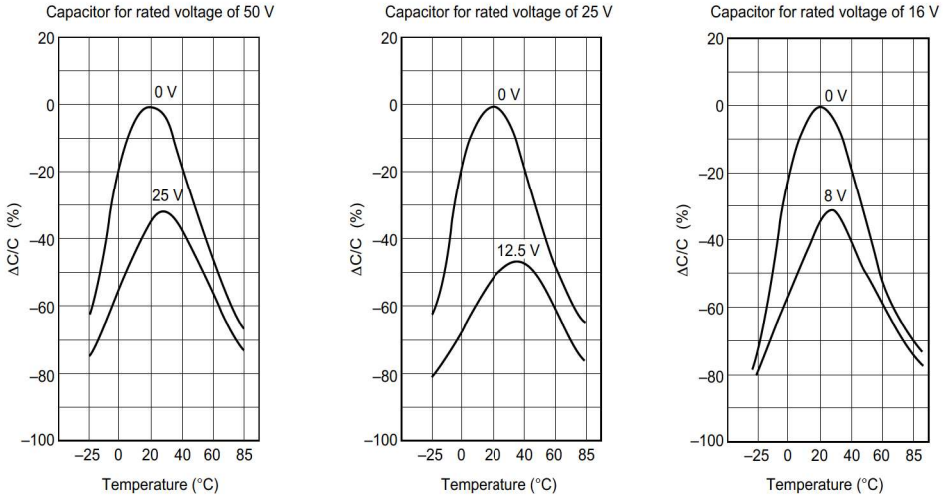
Standard Products

Part Number	Rated Voltage (VDC)	Case Code Nominal	Capacitance (μF)	Thickness (mm) max.
D47Y5V1C225Z53	16	D47	2.2	2.5
D47Y5V1C335Z53			3.3	
D67Y5V1C475Z51		D67	4.7	3.1
D33Y5V1E104Z[*]	25	D33	0.1	2.5
D55Y5V1E105Z[*]		D55	1	
D55Y5V1E155Z[*]			1.5	3.1
D47Y5V1E105Z53		D47	1	2.5
D47Y5V1E155Z53			1.5	
D67Y5V1E225Z51		D67	2.2	3.5
D67Y5V1E335Z51			3.3	4
D33Y5V1H102Z[*]	50	D33	0.001	2.5
D33Y5V1H152Z[*]			0.0015	
D33Y5V1H222Z[*]			0.0022	
D33Y5V1H332Z[*]			0.0033	
D33Y5V1H472Z[*]			0.0047	
D33Y5V1H682Z[*]			0.0068	
D33Y5V1H103Z[*]			0.01	
D33Y5V1H153Z[*]			0.015	
D33Y5V1H223Z[*]			0.022	
D33Y5V1H333Z[*]			0.033	
D33Y5V1H473Z[*]			0.047	
D33Y5V1H683Z[*]			0.068	
D33Y5V1H104Z[*]			0.1	
D55Y5V1H152Z[*]		D55	0.0015	
D55Y5V1H222Z[*]			0.0022	
D55Y5V1H332Z[*]			0.0033	
D55Y5V1H472Z[*]			0.0047	
D55Y5V1H682Z[*]			0.0068	
D55Y5V1H103Z[*]			0.01	
D55Y5V1H153Z[*]			0.015	
D55Y5V1H223Z[*]			0.022	
D55Y5V1H333Z[*]			0.033	
D55Y5V1H473Z[*]			0.047	
D55Y5V1H683Z[*]			0.068	
D55Y5V1H104Z[*]			0.1	
D55Y5V1H154Z[*]			0.15	
D55Y5V1H224Z[*]			0.22	3.1
D55Y5V1H334Z[*]			0.33	
D55Y5V1H474Z[*]			0.47	
D47Y5V1H474Z53		D47		2.5
D47Y5V1H684Z53			0.68	
D47Y5V1H105Z53			1	
D67Y5V1H105Z51		D67	1	3.5
D67Y5V1H155Z51			1.5	4

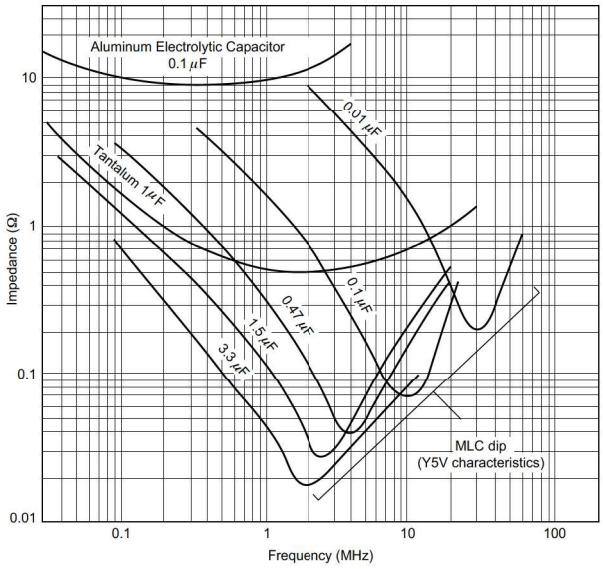
Please specify either lead line pattern symbol 21 or 51 for [*].
If taped leaded type capacitors are required, refer to pages 55~58 when ordering.

Test Data (Typical Examples)

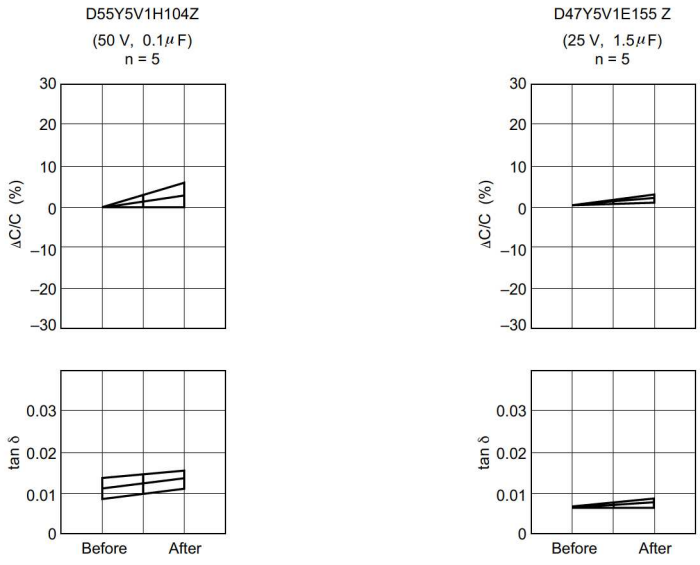
● Applied DC Bias vs Temperature Characteristics



● Impedance vs Frequency Characteristics



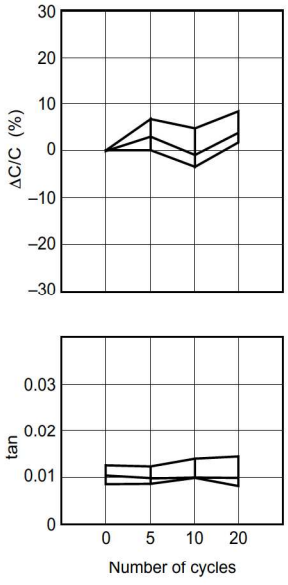
● Resistance to Soldering Heat (270°C and 5 sec.)



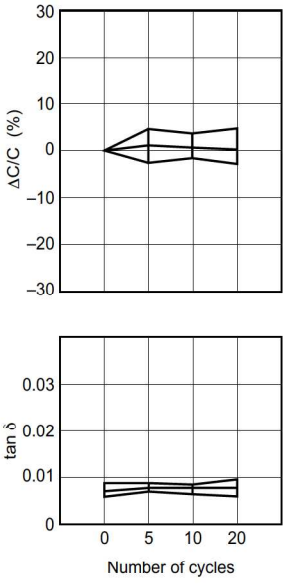
● Temperature Cycle [-25˚C (30min.) ⇄ +85˚C (30min.)]

● High-temperature Load (–85°C W.V x 2)

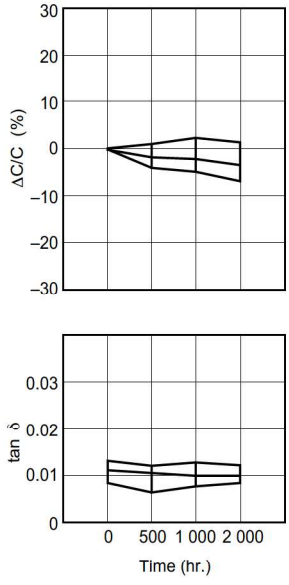
D55Y5V1H104Z
(50 V, 0.1 μF)
n = 12



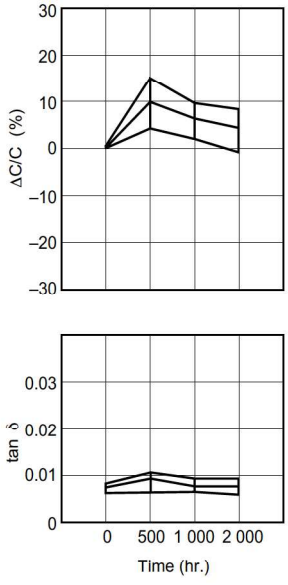
D47Y5V1E155Z
(25 V, 1.5 μF)
n = 12

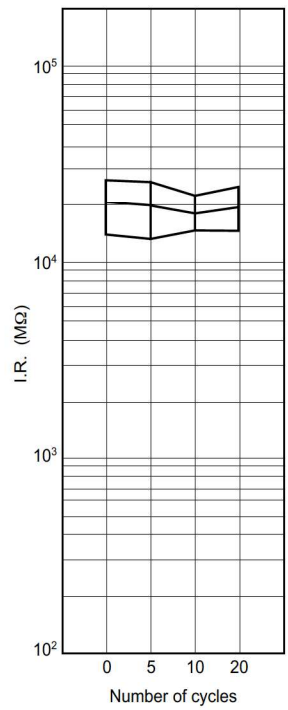


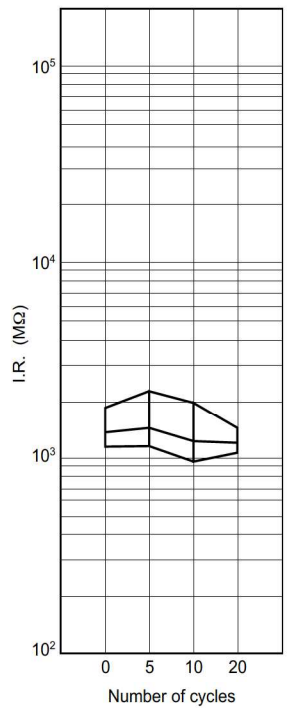
D55Y5V1H104Z
(50 V, 0.1 μF)
n = 20

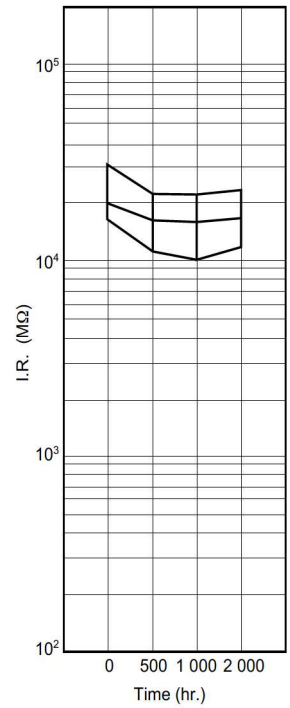


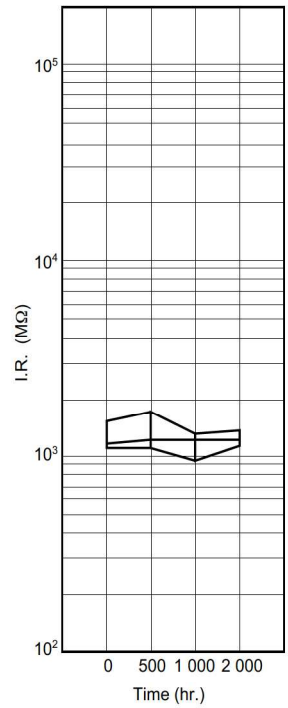
D47Y5V1E155Z
(25 V, 1.5 μF)
n = 20











● Humidity Resistance Load (–40°C, 90 - 95% RH W.V)