

High Voltage Ceramic Capacitor For Surface Mountings High Voltage 1 to 4 kVDC Safety Regulations Type BC



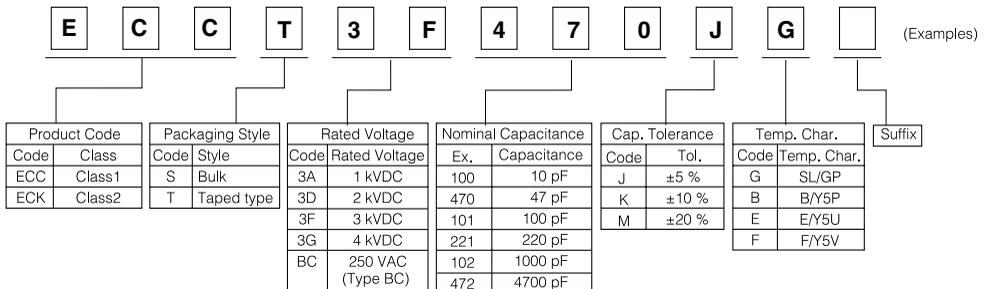
■ Features

- Resin molded type for reflow solderings
- High reliability achieved through disc capacitor element molded construction
- Excellent "Voltage vs. Temperature Rise" achieved through low loss ceramic dielectric materials applied (For High Voltage 1 to 4 kV)
- Recognized by safety regulations (UL and CSA) and subjected to Japan domestic safety regulations (For Type BC)

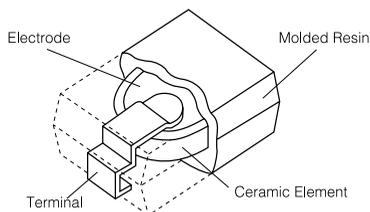
■ Recommended Application

- Ballast circuit of LCD backlighting inverter (For 3 to 4 kVDC Char.SL/GP)
- Snubber circuit of switching power supply (For 1 to 2 kVDC Char.B/Y5P)
- AC primary circuit of AC adapter,Charger,DC-DC converter, On-board type power module etc. (For Type BC)
- FAX Modem (For Type BC)

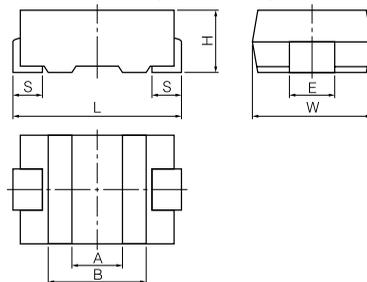
■ Explanation of Part Numbers



■ Construction



■ Dimensions in mm (not to scale)



Symbol	L	W	H	S	E	A	B
Dimensions	7.1±0.5	6.3±0.3	2.5±0.3	1.45±0.30	2.5±0.2	(2.0)	(3.7)

Note : An outside bent terminals type is available on special order
(This construction indicates inside bent terminals type)

■ Specifications

Characteristics	High Voltage 1 to 4 kVDC			Safety Regulations		
	Char. SL/GP		Char. B/Y5P	Type BC		
Operating Temperature Range	-25 to 105 °C			-25 to 85 °C		
Rated Voltage	4 kVDC	2 to 3 kVDC	1 to 2 kVDC	250 VAC		
Dielectric Withstanding Voltage	150 % of Rated Voltage for 1 to 5 seconds	200 % of Rated Voltage for 1 to 5 seconds		1500 VAC for 1 minute		
Capacitance	Within the specified tolerance, when measured at 1 MHz±20 %, 1 to 5 Vrms. and 20 °C		Within the specified tolerance, when measured at 1 kHz±20 %, 1 to 5 Vrms. and 20 °C			
Q or Dissipation Factor $\tan \delta$	30 pF or under Q ≥ 400+20 C (C:Cap.pF) over 30 pF Q ≥ 1000 at 1 MHz±20 %, 1 to 5 Vrms. and 20 °C		$\tan \delta \leq 0.025$ at 1 kHz±20 %, 1 to 5 Vrms. and 20 °C			
Insulation Resistance	10000 M Ω min. at 500 VDC and 1 minute electrification					
Temperature Characteristics	Temperature Coefficient: +350 to -1000 ppm/ °C (Temperature Range : 20 to 85 °C)			Char.		
				B/Y5P	Max. Cap. Change	Temp. Range -25 to 85 °C
				E/Y5U	+20, -55 %	
				F/Y5V	+30, -80 %	
(The reference temperature : 20 °C)						

■ Related Standards and Certificate Number (For Type BC)

Certification Body	Related Standard	Certificate Number
UL	UL1414(Line-by-pass capacitors) CSA C22.2 No.1(Line-by-pass capacitors)	E62674

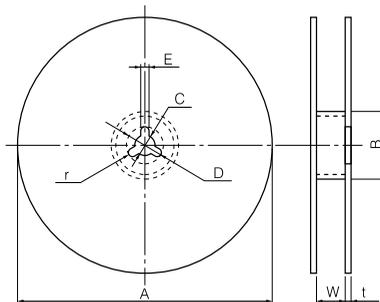
■ Packaging Specifications

● Standard Packing Quantity

Bulk: 1000 pcs./bag

Embossed taping: 2000 pcs./reel

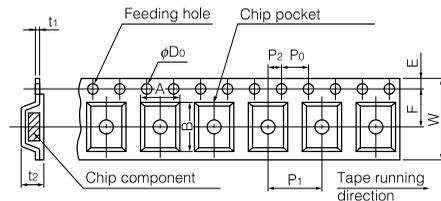
● Reel



Symbol	A	B	C	D	E	W	t	r
Dim. (mm)	330±5	60 min.	13.0±0.5	25±1	2.0±0.5	13.5±1.5	2.0±0.5	R1.0

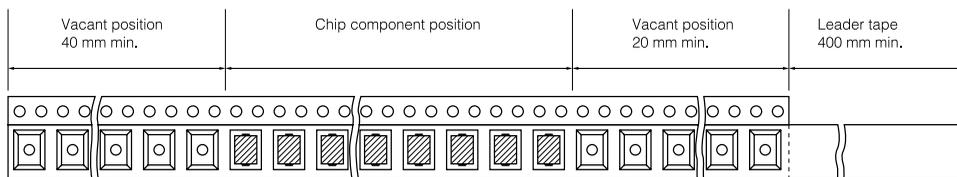
● Embossed taping

(W=12 mm)



Symbol	A	B	W	F	E	P ₁	P ₂	P ₀	φD ₀	t ₁	t ₂
Dim. (mm)	6.5 ±0.2	7.5 ±0.2	12.0 ±0.3	5.5 ±0.1	1.75 ±0.10	8.0 ±0.1	2.00 ±0.05	4.0 ±0.1	1.5 ±0.1	0.3 ±0.1	3.2 ±0.3

● Leader Part and Taped End



■ Rating and Characteristics

● High Voltage (Rated Voltage 1 to 4 kVDC)

Rated Voltage	Part Number	Capacitance (pF)	Cap. Tolerance (%)	Temp Char.
4 kVDC	ECC□3G100□G	10	±5 or ±10	SL/GP
	ECC□3G120□G	12	±5 or ±10	SL/GP
	ECC□3G150□G	15	±5 or ±10	SL/GP
	ECC□3G180□G	18	±5 or ±10	SL/GP
	ECC□3G220□G	22	±5 or ±10	SL/GP
	ECC□3G270□G	27	±5 or ±10	SL/GP
	ECC□3G330□G	33	±5 or ±10	SL/GP
	ECC□3G390□G	39	±5 or ±10	SL/GP
3 kVDC	ECC□3G470□G	47	±5 or ±10	SL/GP
	ECC□3F100□G	10	±5 or ±10	SL/GP
	ECC□3F120□G	12	±5 or ±10	SL/GP
	ECC□3F150□G	15	±5 or ±10	SL/GP
	ECC□3F180□G	18	±5 or ±10	SL/GP
	ECC□3F220□G	22	±5 or ±10	SL/GP
	ECC□3F270□G	27	±5 or ±10	SL/GP
	ECC□3F330□G	33	±5 or ±10	SL/GP
2 kVDC	ECC□3F390□G	39	±5 or ±10	SL/GP
	ECC□3F470□G	47	±5 or ±10	SL/GP
	ECC□3F560□G	56	±5 or ±10	SL/GP
	ECC□3D680□G	68	±5 or ±10	SL/GP
	ECK□3D101KB	100	±10	B/Y5P
	ECK□3D121KB	120	±10	B/Y5P
	ECK□3D151KB	150	±10	B/Y5P
	ECK□3D181KB	180	±10	B/Y5P
1 kVDC	ECK□3D221KB	220	±10	B/Y5P
	ECK□3D271KB	270	±10	B/Y5P
	ECK□3D331KB	330	±10	B/Y5P
	ECK□3A391KB	390	±10	B/Y5P
	ECK□3A471KB	470	±10	B/Y5P

└─ Capacitance Tolerance: "J" (±5%) or "K" (±10%)
 └─ Packaging Style: "S" (Bulk) or "T" (Taped type)

* Capacitance 9 pF or under is available on special order.

NEW

● Safety Regulations Type BC

Type, Rated Volt.	Part Number	Capacitance (pF)	Cap. Tolerance (%)	Temp. Char
Type BC 250 VAC	ECK□BC102ME	1000	±20	E/Y5U
	ECK□BC152ME	1500	±20	E/Y5U
	ECK□BC222ME	2200	±20	E/Y5U
	ECK□BC332MF	3300	±20	F/Y5V
	ECK□BC472MF	4700	±20	F/Y5V

└─ Packaging Style: "S" (Bulk) or "T" (Taped type)

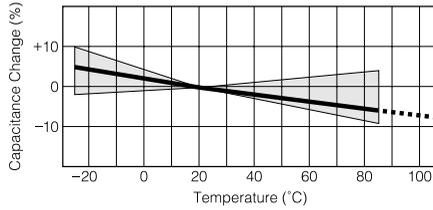
* Capacitance 100 to 680 pF (Char. B/Y5P) are available on special order.
 (It is in the application procedure to safety approval body).

■ Typical Characteristics

● Temperature Characteristics

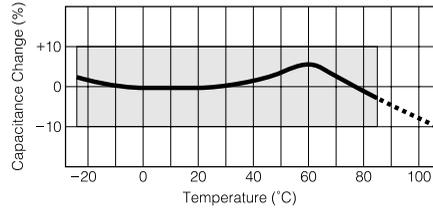
Char. SL/GP

(Temp.Coeff.:+350 to -1000 ppm/°C)



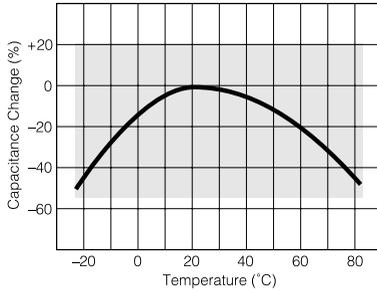
Char. B/Y5P

(Temp.Range:-25 to 85 °C
max.Cap.Change:±10 %)



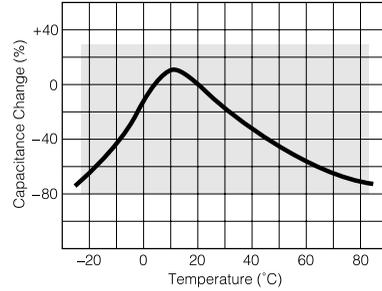
Char. E/Y5U

(Temp.Range:-25 to 85 °C
max.Cap.Change:+20, -55 %)



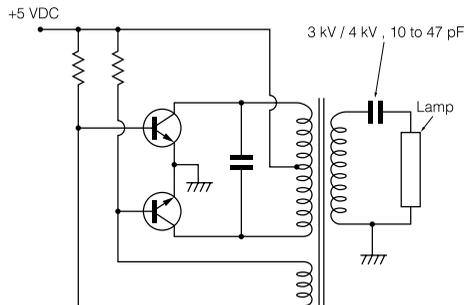
Char. F/Y5V

(Temp.Range:-25 to 85 °C
max.Cap.Change:+30, -80 %)



■ Application Examples

● LCD Backlighting Inverter



● Primary circuit and Snubber circuit of Switching Power Supply

