IGBT Snubber Protection Capacitor

C31

Characteristics

- Plastic shell, flame-retardant epoxy encapsulation
- Tinned copper sheet extraction
- Resistance to high voltage, low dissipation factor
- Low ESL, low ESR, low temperature rise
- High pulse current, High dv/dt affordability

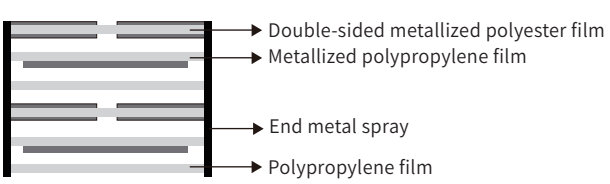
Application

- IGBT buffer absorption circuit protection; IGBT buffer absorption device
- Widely used in power electronic equipment UPS, inverter, induction heating, electric welding machine and other equipment peak voltage, peak current absorption protection

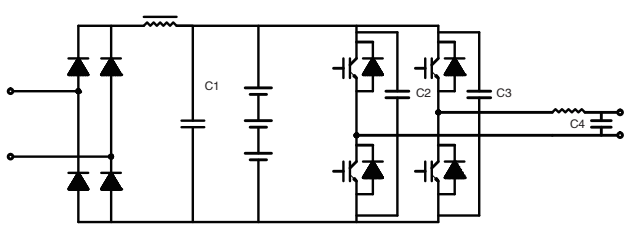
Technical Data

Reference Standard	IEC61071 .GB/T17702
Operating Temperature Range	-40°C~85°C Tmax+105°C
Capacitance Range	0.047μF -10μF
Rated Voltage	700 VDC -3000VDC
Capacity Tolerance	±5%(J); ±10%(K)
Withstand Voltage	1.5Un Dc/10S
Dissipation Factor	tgδ≤0.0005 C≤1μF f=10KHz at 20°C
	tgδ ≤ 0.0010 C≥1μF f=10KHz at 20°C
Insulation Resistance	C≤0.33μF Rs≥30000MΩ(at 20°C 100VDC 60S)
	C>0.33 μF RsC≥10000S (at 20°C 100VDC 60S)
Flame Retardation	UL94V-0
Life Expectancy	100000hrs (Un hotspot ≤ 85°C)

Construction Diagram



Typical Circuit



single-phase UPS/EPS power supply,
C2 and C3 are IGBT absorption capacitors.

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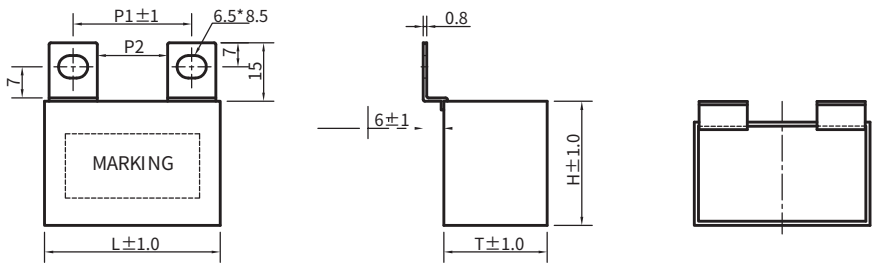
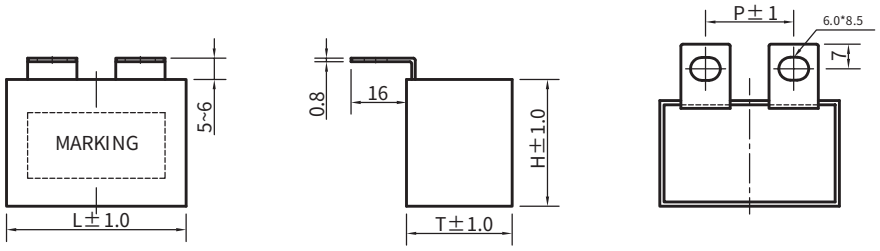
Product Shape

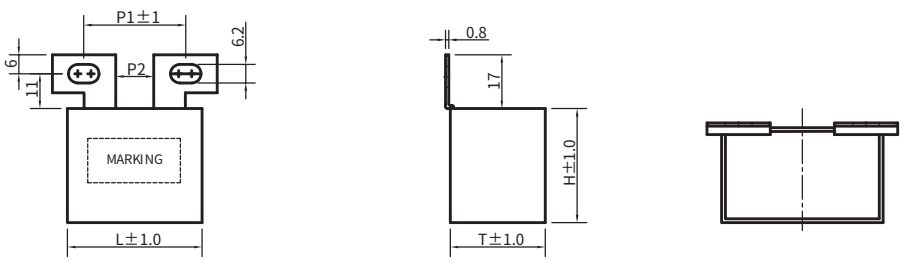
Style C1
Style C2



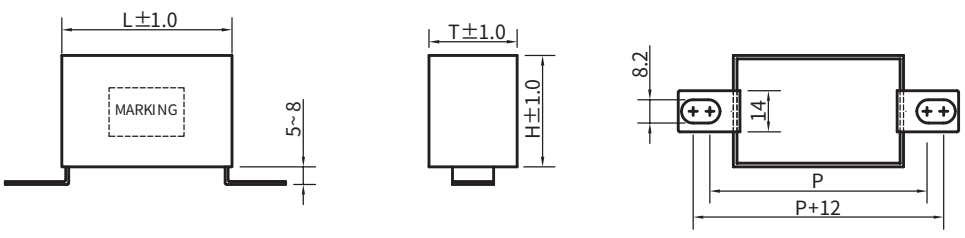
Style D1
Style D2



Style E1
Style E2
Style E3



Style F1



Fixing pitch and distance between lugs(mm)

Style	C1		C2		D1		D2		E1		E2		E3		F1
L	P1	P2	P1	P2	P1	P2	P1	P2	P1	P2	P1	P2	P1	P2	P
42.5	23~28	11	20~23	8	23~28	11	20~23	8	29~39	11	33~45	15			50
57.5	23~28	11	36~41	24	23~28	11	36~41	24	29~39	11	33~45	15	46~58	28	65

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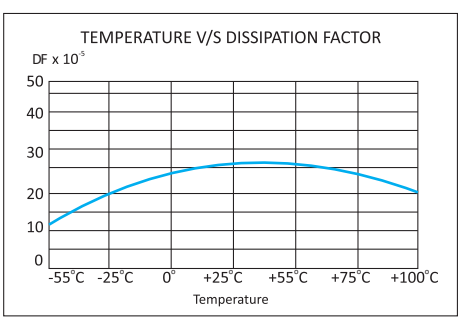
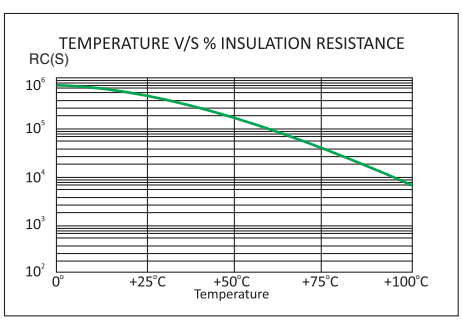
Product Coding

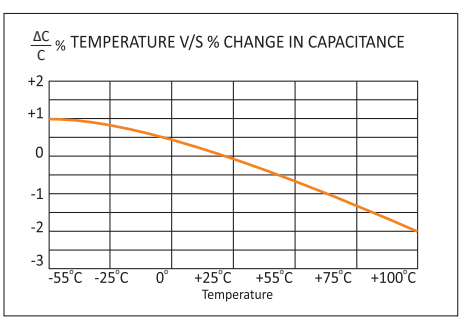
01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16
C	3	1	X	X	N	X	X	N	□	P	□	□	–	□	□

- 01 02 03: Product model
- 04 05 06: Rated voltage — XX*10^n (V)
- 07 08 09: Nominal capacity — XX*10^n (pF)
- 10: Capacity deviation — J: ±5%; K: ±10%
- 11: Extraction electrode — P: Solder
- 12 13: Elicited form of weld sheet — C1、C2、D1、D2、E1、E2、E3、F1 (See the product Outline Introduction in detail)
- 14 15 16: Serial number — 01、02…

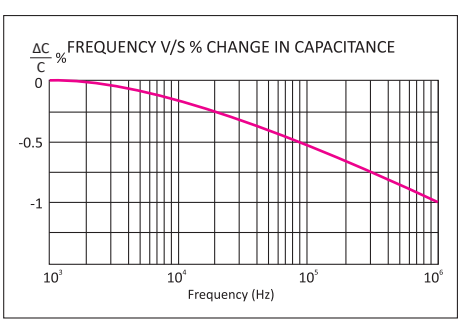
Frequency Characteristics

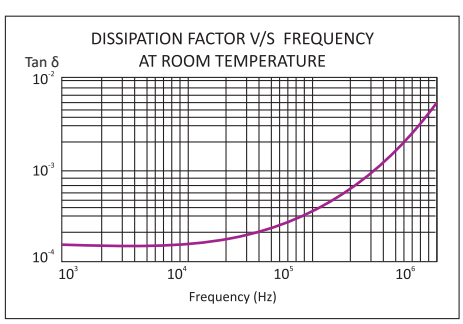




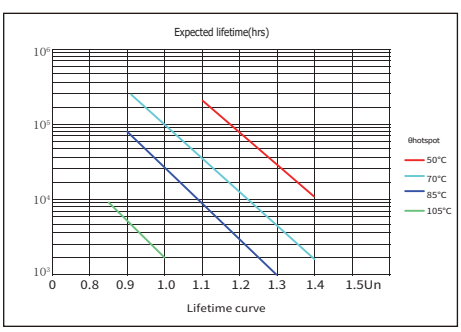


Temperature Characteristics





Life Expectancy



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Article Table

Part Number	CAP μF	Dimension(mm) L	T	H	dv/dt (V/μs)	Ipeak (A)	Irms @100KHz70℃ (A)	ESL (nH)	ESR @100KHz20℃ (mΩ)
U_N 700VDC Urms 380VAC Upk 1000VDC									
C31701105JP•••••	1.0	42.5	24.5	27.5	450	450	12	24	8.0
C31701125JP•••••	1.2	42.5	24.5	27.5	450	540	13	25	7.5
C31701155JP•••••	1.5	42.5	24.5	27.5	430	645	14	25	7.0
C31701205JP•••••	2.0	42.5	28.0	37.0	420	840	15	24	6.5
C31701225JP•••••	2.2	42.5	28.0	37.0	400	880	17	23	6.0
C31701255JP•••••	2.5	42.5	28.0	37.0	400	1000	18	23	6.0
C31701305JP•••••	3.0	42.5	33.0	45.0	380	1140	20	22	5.5
C31701335JP•••••	3.3	42.5	33.0	45.0	350	1155	21	22	5.3
C31701355JP•••••	3.5	42.5	33.0	45.0	350	1225	25	22	5.1
C31701405JP•••••	4.0	57.5	30.0	45.0	280	1120	24	26	5.0
C31701475JP•••••	4.7	57.5	35.0	50.0	280	1316	25	28	5.0
C31701565JP•••••	5.6	57.5	35.0	50.0	250	1400	26	30	4.0
C31701685JP•••••	6.8	57.5	35.0	50.0	220	1496	28	32	3.2
C31701106JP•••••	10.0	57.5	42.5	56.0	200	2000	33	33	2.5
U_N 1000VDC Urms 480VAC Upk 1400VDC									
C31102684JP•••••	0.68	42.5	24.5	27.5	800	544	12	25	8.0
C31102105JP•••••	1.0	42.5	28.0	37.0	800	800	13	24	6.5
C31102125JP•••••	1.2	42.5	33.5	35.5	700	840	15	24	6.0
C31102155JP•••••	1.5	42.5	33.5	35.5	700	1050	15	24	6.0
C31102205JP•••••	2.0	42.5	33.0	45.0	700	1400	20	22	5.2
C31102225JP•••••	2.2	57.5	30.0	45.0	600	1320	21	28	5.0
C31102255JP•••••	2.5	57.5	30.0	45.0	600	1500	22	30	5.0
C31102305JP•••••	3.0	57.5	35.0	50.0	550	1650	25	30	4.0
C31102335JP•••••	3.3	57.5	30.0	45.0	500	1650	25	30	3.5
C31102475JP•••••	4.7	57.5	42.5	56.0	420	1974	30	25	3.0
U_N 1200VDC Urms 500VAC Upk 1600VDC									
C31122224JP•••••	0.22	42.5	24.5	27.5	1500	330	5.0	28	20
C31122334JP•••••	0.33	42.5	24.5	27.5	1500	495	7.0	26	15
C31122474JP•••••	0.47	42.5	24.5	27.5	1200	564	10	24	11
C31122564JP•••••	0.56	42.5	24.5	27.5	1200	672	11	23	8.0
C31122684JP•••••	0.68	42.5	33.5	35.5	1100	748	12	23	7.0
C31122824JP•••••	0.82	42.5	33.5	35.5	1000	820	13	23	6.5
C31122105JP•••••	1.0	42.5	33.5	35.5	1000	1000	14	22	6.0
C31122125JP•••••	1.2	42.5	33.0	45.0	800	960	14	21	5.5
C31122155JP•••••	1.5	42.5	33.0	45.0	800	1200	15	20	5.0
C31122205JP•••••	2.0	57.5	30.0	45.0	750	1500	20	30	4.0
C31122225JP•••••	2.2	57.5	35.0	50.0	750	1650	22	28	4.0
C31122255JP•••••	2.5	57.5	35.0	50.0	700	1750	25	28	4.0
C31122305JP•••••	3.0	57.5	35.0	50.0	600	1800	25	27	4.0
C31122475JP•••••	4.7	57.5	42.5	56.0	420	1974	32	23	3.2

The above table / graphics are for reference only, subject to the actual product (unit: mm)

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Part Number	CAP μF	Dimension(mm) L	T	H	dv/dt (V/μs)	Ipeak (A)	Irms @100KHz70℃ (A)	ESL (nH)	ESR @100KHz20℃ (mΩ)
U_N 1600VDC Urms 500VAC Upk 2000VDC									
C31162334JP•••••	0.33	42.5	24.5	27.5	1300	429	9.0	25	12
C31162474JP•••••	0.47	42.5	33.5	35.5	1300	611	10	24	10
C31162564JP•••••	0.56	42.5	33.5	35.5	1300	728	11	23	9.0
C31162684JP•••••	0.68	42.5	33.5	35.5	1300	884	12	23	8.0
C31162824JP•••••	0.82	42.5	33.5	35.5	1200	984	13.5	22	7.5
C31162105JP•••••	1.0	42.5	33.5	35.5	1200	1200	15	22	7.0
C31162125JP•••••	1.2	57.5	30.0	45.0	1200	1440	16	22	6.5
C31162155JP•••••	1.5	57.5	35.0	50.0	1200	1800	18	31	6.0
C31162205JP•••••	2.0	57.5	42.5	56.0	1200	2400	25	30	5.0
U_N 2000VDC Urms 630VAC Upk 2500VDC									
C31202104JP•••••	0.1	42.5	24.5	27.5	1800	180	6.0	30	25
C31202154JP•••••	0.15	42.5	24.5	27.5	1800	270	8.0	28	20
C31202224JP•••••	0.22	42.5	24.5	27.5	1500	330	10	25	15
C31202334JP•••••	0.33	42.5	33.5	35.5	1500	495	12	24	12
C31202474JP•••••	0.47	42.5	33.0	45.0	1400	658	15	23	11
C31202564JP•••••	0.56	42.5	33.0	45.0	1200	672	16	22	9.5
C31202684JP•••••	0.68	57.5	30.0	45.0	1200	816	18	22	8.0
C31202824JP•••••	0.82	57.5	30.0	45.0	1100	902	22	28	7.0
C31202105JP•••••	1.0	57.5	35.0	50.0	1100	1100	25	28	6.0
U_N 3000VDC Urms 750VAC Upk 3500VDC									
C31302473JP•••••	0.047	42.5	24.5	27.5	3000	141	6.0	40	35
C31302683JP•••••	0.068	42.5	24.5	27.5	3000	204	10	35	27
C31302104JP•••••	0.1	42.5	33.5	35.5	2500	250	18	30	23
C31302154JP•••••	0.15	42.5	33.5	35.5	2500	375	25	28	18
C31302224JP•••••	0.22	42.5	33.0	45.0	2200	484	28	27	15
C31302334JP•••••	0.33	57.5	30.0	45.0	1800	594	20	24	12
C31302474JP•••••	0.47	57.5	42.0	56.5	1500	705	22	23	11

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