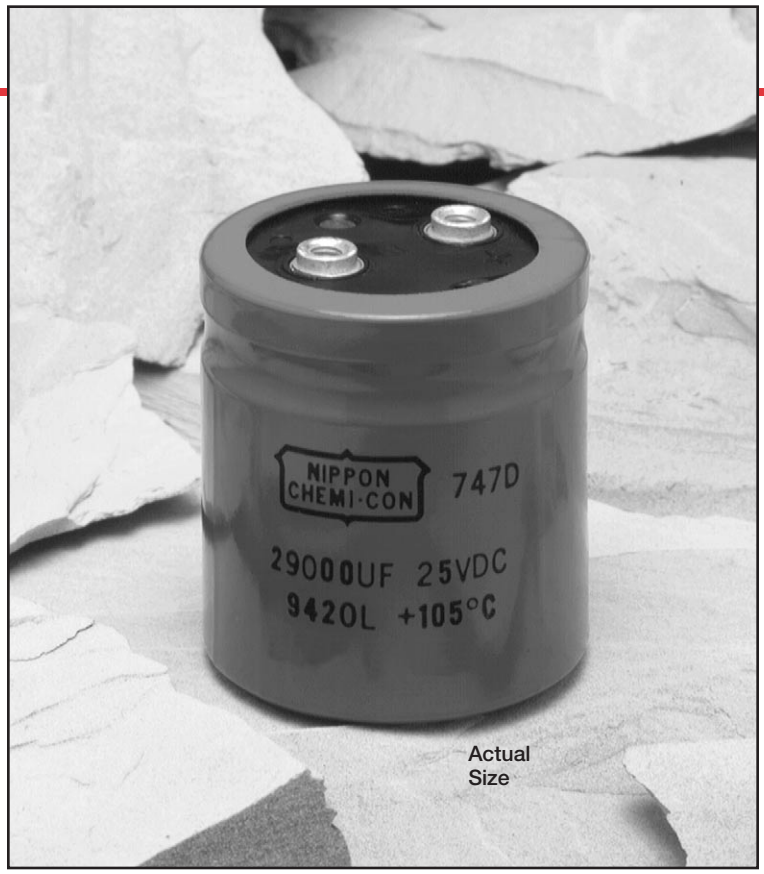
747D Series

- Large Can
- Screw Terminal
- High Frequency Applications
- Low Impedance
- −55°C to +105°C Temperature Range



The 747D series offers a low impedance over an extended temperature range of −55°C to +105°C. With the high ripple current capability and the low impedance, the 747D is ideal for high frequency SMPS output filtering applications. The 747D series capacitors also offer a long life under normal operating conditions.

Summary of Specifications

- Screw terminals, high, low English and Metric.
- Capacitance range: 4,800 to 310,000µF.
- Voltage range: 6.3 to 35VDC.
- Operating temperature range: −55°C to +105°C.
- Leakage current in µA: $I = K\sqrt{CV}$: K = 4.0 at +25°C after 5 minutes.
- Standard capacitance tolerance: ±20%
- Nominal case size (D×L): 1.375”×1.625” to 2.000”×5.625”
- Rated lifetime: 2,000 hours at +105°C.

747D Series

747D Specifications

Item	Characteristics
Operating Temperature Range	−55 to +105°C
Rated Voltage Range	6.3 to 35VDC
Capacitance Range	4,800 to 310,000μF at +25°C, 120Hz
Capacitance Tolerance	±20% (M) at +25°C, 120Hz
Leakage Current	$I = K\sqrt{CV}$: K = 4.0 at +25°C after 5 minutes. Where I = Leakage current (μA), C = Nominal capacitance (μF) and V = Rated voltage (V)
Low Temperature Characteristics	Capacitance change: At 120Hz, capacitance at −55°C shall not be less than 80% of the specified value at +25°C. Impedance (Z) change: At 120Hz, impedance at −55°C shall not exceed 3 times the specified value at +25°C. At 20k-100kHz, impedance at −55°C shall not exceed 30 times the specified value at +25°C.
Ripple Current Multipliers *Refer to Section 4 of the Mini-Glossary for explanation of Ripple Current Multipliers.*	Ambient Temperature (°C) +25°C: 2.0 / +45°C: 1.7 / +65°C: 1.4 / +85°C: 1.0 / +105°C: 0.5 Frequency (Hz) 120Hz: 0.90 / 400Hz: 0.95 / 1kHz: 0.98 / 5k-100kHz: 1.00
Life Validation Test	The following specifications shall be satisfied when the capacitors are restored to +25°C after subjecting them to the DC rated voltage for 2,000 hours at +105°C. Capacitance change: ≤ 20% from initial measurement ESR change : ≤ 1.5 × initial specified limit Leakage current : ≤ initial specified limit
Shelf Test	The following specifications shall be satisfied when the capacitors are restored to +25°C after exposing them for 1,000 hours at +105°C without voltage applied. The rated voltage shall be applied to the capacitors for a minimum of 30 minutes, at least 24 hours and not more than 48 hours before the measurements. Capacitance change: ≤ 15% from initial measurement ESR change : ≤ 1.3 × initial specified limit Leakage current : ≤ 2 × initial specified limit

Part Numbering System for 747D Series

When ordering, always specify complete catalog number for 747D Series.

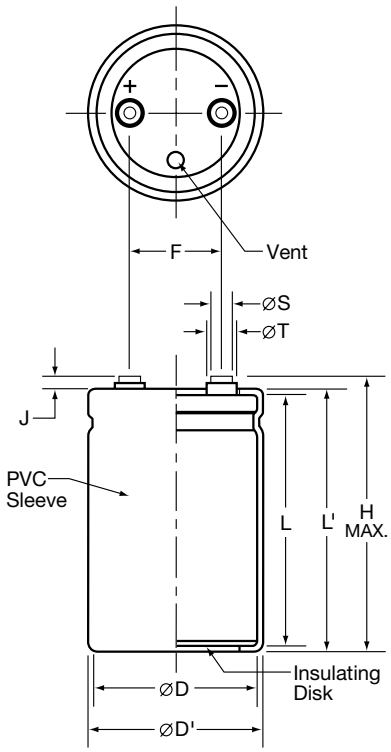
747D 293 M 025 BA 2 A

- **A** — Lead Code: A = Low Post 10-32 Screw Thread (Standard). B = High Post 10-32 Screw Thread. I = High Post M5 Screw Thread.
- **2** — Case Style: 2 = PVC Sleeve.
- **BA** — Case Code: See Case Sizes in Tables.
- **025** — DC Rated Voltage: Expressed in Volts. Zero proceeds the voltage rating when less than 100 volts. An R indicates a decimal point (e.g. 6R3 = 6.3V).
- **M** — Capacitance Tolerance: M = ±20%
- **293** — Capacitance Value: Expressed in Microfarads. The first two digits are significant figures, the third digit indicates the number of zeros.
- **747D** — Series Name: Indicates Basic Capacitor Design.

Diagram of Dimensions

Large Can / Screw Terminals

Unit: inches and mm



Terminal Specifications in Inches

Terminal Code	Thread	Thread Depth	J ± 0.032 Height	ØS ± 0.010 Diameter	ØT ± 0.010 Diameter	H Max. Height
A	10 - 32 NF-2B	0.219	0.063	0.313	—	L + 0.276
B	10 - 32 NF-2B	0.375	0.250	0.313	0.438	L + 0.472
I	M5	0.375	0.250	0.313	—	L + 0.472

Terminal Specifications in Millimeters

Terminal Code	Thread	Thread Depth	J ± 0.8 Height	ØS ± 0.25 Diameter	ØT ± 0.25 Diameter	H Max. Height
A	10 - 32 NF-2B	5.6	1.6	8.0	—	L + 7
B	10 - 32 NF-2B	9.5	6.4	8.0	11.1	L + 12
I	M5	9.5	6.4	8.0	—	L + 12

Refer to the Mounting Hardware page at the beginning of the Large Can section for mounting brackets and accessories.

Dimensions in Inches and Millimeters

Case Code	Bare Can				With Insulating Sleeve				Terminal Spacing		Typical Weight (grams)
	inches		mm		inches		mm		inches	mm	
	ØD ± 0.032	L ± 0.063	ØD ± 0.813	L ± 1.60	ØD' Max.	L' Max.	ØD' Max.	L' Max.	F ± 0.016	F ± 0.40	
AN		1.625		41		1.750		44.5			43
AY		1.875		48		2.000		50.8			54
AA		2.125		54		2.250		57.2			63
AM		2.625		67		2.750		69.9			82
AB	1.375	3.125	35.0	79	1.453	3.250	36.9	82.6	0.500	12.7	105
AL		3.625		92		3.750		95.3			122
AC		4.125		105		4.250		108.0			129
AD		4.625		117		4.750		120.7			162
AE		5.125		130		5.250		133.4			179
AF		5.625		143		5.750		146.1			201
BA		2.125		54		2.250		57.2			133
BM		2.625		67		2.750		69.9			176
BB		3.125		79		3.250		82.6			213
BL	2.000	3.625	50.8	92	2.078	3.750	52.8	95.3	0.875	22.2	261
BC		4.125		105		4.250		108.0			381
BD		4.625		117		4.750		120.7			326
BE		5.125		130		5.250		133.4			337
BF		5.625		143		5.750		146.1			408

747D Series

Standard Voltage Ratings - Screw Terminals

Rated Voltage (WVDC)	Capacitance (µF)	Catalog Part Number	Nominal Case Size* D×L (inches)	ESR (mΩ) at +25°C 120Hz Max.	ESR (mΩ) at +25°C 20k-100kHz ±30%	Maximum Ripple Current (A rms) at +85°C 120Hz	Maximum Ripple Current (A rms) at +85°C 20k-100kHz
6.3 Volts 8 Volts Surge	23,000	747D233M6R3AN2A	1.375 × 1.625	16.9	9.0	8.4	9.5
	31,000	747D313M6R3AY2A	1.375 × 1.875	13.0	7.0	10.1	11.4
	38,000	747D383M6R3AA2A	1.375 × 2.125	10.7	5.9	11.6	13.1
	54,000	747D543M6R3AM2A	1.375 × 2.625	8.1	4.4	14.5	16.3
	69,000	747D693M6R3AB2A	1.375 × 3.125	6.6	3.8	17.2	19.1
	85,000	747D853M6R3AL2A	1.375 × 3.625	5.7	3.3	19.7	21.8
	100,000	747D104M6R3AC2A	1.375 × 4.125	5.1	3.0	22.0	24.3
	110,000	747D114M6R3AD2A	1.375 × 4.625	4.7	2.8	24.3	26.6
	130,000	747D134M6R3AE2A	1.375 × 5.125	4.3	2.6	26.4	28.9
	140,000	747D144M6R3AF2A	1.375 × 5.625	4.0	2.4	28.4	31.0
	87,000	747D873M6R3BA2A	2.000 × 2.125	6.3	3.8	19.3	21.1
	100,000	747D104M6R3BM2A	2.000 × 2.625	5.5	3.4	22.2	24.2
	130,000	747D134M6R3BB2A	2.000 × 3.125	4.6	2.8	26.0	28.2
	170,000	747D174M6R3BL2A	2.000 × 3.625	4.0	2.5	29.5	31.8
	200,000	747D204M6R3BC2A	2.000 × 4.125	3.6	2.3	32.6	35.1
	240,000	747D244M6R3BD2A	2.000 × 4.625	3.3	2.2	35.6	38.1
	270,000	747D274M6R3BE2A	2.000 × 5.125	3.1	2.1	38.3	40.8
	310,000	747D314M6R3BF2A	2.000 × 5.625	3.0	2.0	40.9	43.5
10 Volts 13 Volts Surge	18,000	747D183M010AN2A	1.375 × 1.625	17.9	9.0	8.1	9.5
	24,000	747D243M010AY2A	1.375 × 1.875	13.7	7.0	9.8	11.3
	31,000	747D313M010AA2A	1.375 × 2.125	11.3	5.9	11.3	13.0
	43,000	747D433M010AM2A	1.375 × 2.625	8.5	4.4	14.2	16.2
	56,000	747D563M010AB2A	1.375 × 3.125	7.0	3.8	16.8	19.0
	68,000	747D683M010AL2A	1.375 × 3.625	6.0	3.3	19.2	21.7
	81,000	747D813M010AC2A	1.375 × 4.125	5.3	3.0	21.5	24.2
	93,000	747D933M010AD2A	1.375 × 4.625	4.9	2.8	23.8	26.5
	100,000	747D104M010AE2A	1.375 × 5.125	4.5	2.6	25.9	28.7
	110,000	747D114M010AF2A	1.375 × 5.625	4.2	2.4	27.9	30.9
	70,000	747D703M010BA2A	2.000 × 2.125	6.6	3.8	18.9	21.1
	84,000	747D843M010BM2A	2.000 × 2.625	5.8	3.4	21.7	24.1
	100,000	747D104M010BB2A	2.000 × 3.125	4.7	2.8	25.6	28.2
	140,000	747D144M010BL2A	2.000 × 3.625	4.1	2.5	29.0	31.7
	160,000	747D164M010BC2A	2.000 × 4.125	3.7	2.3	32.2	35.0
	190,000	747D194M010BD2A	2.000 × 4.625	3.4	2.2	35.1	38.0
	220,000	747D224M010BE2A	2.000 × 5.125	3.2	2.1	37.8	40.8
	250,000	747D254M010BF2A	2.000 × 5.625	3.1	2.0	40.4	43.4
16 Volts 20 Volts Surge	12,000	747D123M016AN2A	1.375 × 1.625	20.3	9.0	7.6	9.4
	16,000	747D163M016AY2A	1.375 × 1.875	15.5	7.0	9.2	11.2
	20,000	747D203M016AA2A	1.375 × 2.125	12.7	5.9	10.7	12.9
	29,000	747D293M016AM2A	1.375 × 2.625	9.5	4.4	13.4	16.1
	38,000	747D383M016AB2A	1.375 × 3.125	7.7	3.8	15.9	18.9
	46,000	747D463M016AL2A	1.375 × 3.625	6.6	3.3	18.3	21.6
	55,000	747D553M016AC2A	1.375 × 4.125	5.9	3.0	20.6	24.0
	63,000	747D633M016AD2A	1.375 × 4.625	5.3	2.8	22.7	26.4
	72,000	747D723M016AE2A	1.375 × 5.125	4.9	2.6	24.8	28.6
	80,000	747D803M016AF2A	1.375 × 5.625	4.6	3.2	26.7	30.7
	47,000	747D473M016BA2A	2.000 × 2.125	7.2	3.8	18.0	21.0
	57,000	747D573M016BM2A	2.000 × 2.625	6.3	3.4	20.8	24.0
	76,000	747D763M016BB2A	2.000 × 3.125	5.1	2.8	24.6	28.1
	95,000	747D953M016BL2A	2.000 × 3.625	4.4	2.5	28.0	31.6
	110,000	747D114M016BC2A	2.000 × 4.125	4.0	2.3	31.1	34.9
	130,000	747D134M016BD2A	2.000 × 4.625	3.7	2.2	34.0	37.9
	150,000	747D154M016BE2A	2.000 × 5.125	3.4	2.1	36.8	40.7
	160,000	747D164M016BF2A	2.000 × 5.625	3.2	2.0	39.3	43.3

***The case sizes in table are with no sleeve, refer to diagram for case sizes with sleeve.**

747D Series

Standard Voltage Ratings - Screw Terminals

Rated Voltage (WVDC)	Capacitance (µF)	Catalog Part Number	Nominal Case Size* D×L (inches)	ESR (mΩ) at +25°C		Maximum Ripple Current (A rms) at +85°C	
				120Hz Max.	20k-100kHz ±30%	120Hz	20k-100kHz
25 Volts 32 Volts Surge	7,700	747D772M025AN2A	1.375 × 1.625	21.8	9.0	7.4	9.3
	10,000	747D103M025AY2A	1.375 × 1.875	16.6	7.0	8.9	11.2
	12,000	747D123M025AA2A	1.375 × 2.125	13.6	5.9	10.3	12.9
	18,000	747D183M025AM2A	1.375 × 2.625	10.1	4.4	13.0	16.0
	23,000	747D233M025AB2A	1.375 × 3.125	8.2	3.8	15.5	18.8
	28,000	747D283M025AL2A	1.375 × 3.625	7.0	3.3	17.8	21.5
	33,000	747D333M025AC2A	1.375 × 4.125	6.2	3.0	20.0	23.9
	38,000	747D383M025AD2A	1.375 × 4.625	5.6	2.8	22.1	26.3
	44,000	747D443M025AE2A	1.375 × 5.125	5.1	2.6	24.1	28.5
	49,000	747D493M025AF2A	1.375 × 5.625	4.8	2.4	26.1	30.6
	29,000	747D293M025BA2A	2.000 × 2.125	7.6	3.8	17.6	20.9
	35,000	747D353M025BM2A	2.000 × 2.625	6.6	3.4	20.3	24.0
	46,000	747D463M025BB2A	2.000 × 3.125	5.3	2.8	24.1	28.0
	58,000	747D583M025BL2A	2.000 × 3.625	4.6	2.5	27.4	31.6
	70,000	747D703M025BC2A	2.000 × 4.125	4.1	2.3	30.5	34.8
	82,000	747D823M025BD2A	2.000 × 4.625	3.8	2.2	33.4	37.8
	93,000	747D933M025BE2A	2.000 × 5.125	3.5	2.1	36.1	40.6
	100,000	747D104M025BF2A	2.000 × 5.625	3.3	2.0	38.7	43.2
35 Volts 44 Volts Surge	4,800	747D482M035AN2A	1.375 × 1.625	26.6	9.0	6.7	9.3
	6,500	747D652M035AY2A	1.375 × 1.875	20.2	7.0	8.1	11.1
	8,100	747D812M035AA2A	1.375 × 2.125	16.4	5.9	9.4	12.8
	11,000	747D113M035AM2A	1.375 × 2.625	12.1	4.5	11.9	15.9
	14,000	747D143M035AB2A	1.375 × 3.125	9.8	3.8	14.2	18.7
	17,000	747D173M035AL2A	1.375 × 3.625	8.3	3.3	16.4	21.4
	21,000	747D213M035AC2A	1.375 × 4.125	7.3	3.9	18.5	23.8
	24,000	747D243M035AD2A	1.375 × 4.625	6.5	2.8	20.5	26.2
	27,000	747D273M035AE2A	1.375 × 5.125	6.0	2.6	22.4	28.4
	30,000	747D303M035AF2A	1.375 × 5.625	5.5	2.4	24.3	30.5
	18,000	747D183M035BA2A	2.000 × 2.125	8.8	3.8	16.3	20.8
	22,000	747D223M035BM2A	2.000 × 2.625	7.6	3.4	18.9	23.9
	29,000	747D293M035BB2A	2.000 × 3.125	6.1	2.9	22.5	27.9
	36,000	747D363M035BL2A	2.000 × 3.625	5.2	2.5	25.8	31.5
	44,000	747D443M035BC2A	2.000 × 4.125	4.6	2.3	28.8	34.7
	51,000	747D513M035BD2A	2.000 × 4.625	4.2	2.2	31.6	37.7
	58,000	747D583M035BE2A	2.000 × 5.125	3.9	2.1	34.3	40.5
	66,000	747D663M035BF2A	2.000 × 5.625	3.7	2.0	36.9	43.2

***The case sizes in table are with no sleeve, refer to diagram for case sizes with sleeve.**