

U33D Series



- Large Can
- Screw Terminals
- High Ripple
- 25 to 550VDC Voltage Range
- High Capacitance
- RoHS Compliant
- +105°C Maximum Temperature
- 2,000 Hours Lifetime at +105°C



The U33D series is a high voltage screw mount series that is ideal for inverter applications requiring high ripple current capabilities. The U33D series has a wide voltage range of 25 to 550 volts and an endurance rating of 2,000 hours at +105°C with the rated ripple current applied. These capacitors are available with a variety of high current English or Metric thread terminals. Mounting options include a three-footed clamp or bottom threaded stud. Custom designs are available upon request.

Summary of Specifications

- Screw terminals: high and low post, English and Metric thread.
- Capacitance range: 560 to 1,000,000µF.
- Voltage range: 25 to 550VDC.
- Category temperature range: –40°C to +105°C.
- Leakage current: 0.02CV(µA) or 5mA, whichever is smaller, after 5 minutes at +25°C.
- Standard capacitance tolerance: ±20%
- Nominal case size (D×L): D = 50.8mm (2.000") to 89mm (3.500"); L = 79mm (3.125") to 219mm (8.625").
- Rated lifetime: 2,000 hours at +105°C with rated ripple current applied.

U33D Series

U33D Specifications - Screw Terminals

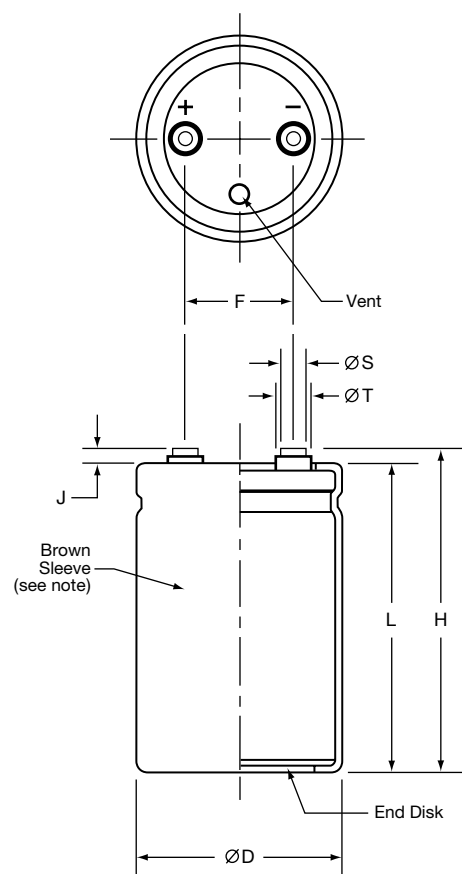
Item	Characteristics																																															
Category Temperature Range	− 40 to +105°C																																															
Rated Voltage Range	25 to 550VDC																																															
Capacitance Range	560 to 1,000,000μF at +25°C, 120Hz																																															
Capacitance Tolerance	± 20% (M) at +25°C, 120Hz																																															
Leakage Current	I = 0.02CV (μA) or 5mA, whichever is smaller, after 5 minutes at +25°C. Where I = Max. leakage current (μA), C = Nominal capacitance (μF) and V = Rated voltage (V)																																															
Rated Ripple Current Multipliers	Ambient Temperature (°C) <table><tr><td>≤ +65°C</td><td>+85°C</td><td>+105°C</td></tr><tr><td>2.20</td><td>1.73</td><td>1.00</td></tr></table> Frequency (Hz) <table><tr><td>DC Rated Voltage</td><td>50Hz</td><td>120Hz</td><td>300Hz</td><td>1kHz</td><td>10kHz</td><td>100kHz</td></tr><tr><td>25-550V</td><td>0.70</td><td>1.00</td><td>1.16</td><td>1.30</td><td>1.41</td><td>1.43</td></tr></table>	≤ +65°C	+85°C	+105°C	2.20	1.73	1.00	DC Rated Voltage	50Hz	120Hz	300Hz	1kHz	10kHz	100kHz	25-550V	0.70	1.00	1.16	1.30	1.41	1.43																											
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25-550V	0.70	1.00	1.16	1.30	1.41	1.43																																										
Endurance (Load Life)	The following specifications shall be satisfied when the capacitors are restored to +25°C after subjecting them to DC voltage for 2,000 hours at +105°C with the rated ripple current applied. The sum of the DC voltage and peak AC voltage must not exceed the full rated voltage of the capacitors. Capacitance change: ≤ 20% from initial measurement ESR change : ≤ 200% of initial specified limit Leakage current : ≤ initial specified limit																																															
Shelf Life	The following specifications shall be satisfied when the capacitors are restored to +25°C after exposing them for 500 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: ≤ 20% from initial measurement ESR change : ≤ 200% of initial specified limit Leakage current : ≤ initial specified limit																																															
Vibration Rating	10-55Hz, 10g sinusoidal in three axes, 2 hours per axis.																																															
Maximum Tightening Torque	<table><tr><td>Terminal Code</td><td>HP</td><td>HL</td><td>CD</td><td>CP</td><td>CH</td><td>CA</td><td>CS</td></tr><tr><td>Thread Size</td><td>10-32 NF-2B</td><td>M5x0.8-6H</td><td></td><td>1/4-28 NF-2B</td><td></td><td>M6x1-6H</td><td></td></tr><tr><td>3 Threads Engaged</td><td colspan="3">2.0 N·m (18.0 in·lb)</td><td colspan="4">4.0 N·m (35.0 in·lb)</td></tr><tr><td>6 Threads Engaged</td><td colspan="3">2.8 N·m (25.0 in·lb)</td><td colspan="4">6.2 N·m (55.0 in·lb)</td></tr></table>	Terminal Code	HP	HL	CD	CP	CH	CA	CS	Thread Size	10-32 NF-2B	M5x0.8-6H		1/4-28 NF-2B		M6x1-6H		3 Threads Engaged	2.0 N·m (18.0 in·lb)			4.0 N·m (35.0 in·lb)				6 Threads Engaged	2.8 N·m (25.0 in·lb)			6.2 N·m (55.0 in·lb)																		
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Typical Inductance (nH) at 1MHz	<table><tr><td rowspan="2">Case Diameter (mm)</td><td colspan="7">Terminal Code</td></tr><tr><td>HP</td><td>HL</td><td>CD</td><td>CP</td><td>CH</td><td>CA</td><td>CS</td></tr><tr><td>ø50.8</td><td>—</td><td>—</td><td>NA</td><td>NA</td><td>NA</td><td>NA</td><td>NA</td></tr><tr><td>ø63.5</td><td>—</td><td>—</td><td>—</td><td>—</td><td>—</td><td>—</td><td>—</td></tr><tr><td>ø76.2</td><td>30</td><td>30</td><td>25</td><td>20</td><td>25</td><td>20</td><td>25</td></tr><tr><td>ø89.0</td><td>30</td><td>30</td><td>25</td><td>20</td><td>25</td><td>20</td><td>25</td></tr></table>	Case Diameter (mm)	Terminal Code							HP	HL	CD	CP	CH	CA	CS	ø50.8	—	—	NA	NA	NA	NA	NA	ø63.5	—	—	—	—	—	—	—	ø76.2	30	30	25	20	25	20	25	ø89.0	30	30	25	20	25	20	25
Case Diameter (mm)	Terminal Code																																															
	HP	HL	CD	CP	CH	CA	CS																																									
ø50.8	—	—	NA	NA	NA	NA	NA																																									
ø63.5	—	—	—	—	—	—	—																																									
ø76.2	30	30	25	20	25	20	25																																									
ø89.0	30	30	25	20	25	20	25																																									
Custom Designs	Custom CV values per case size and termination type may be available upon request. Contact appropriate representative with specific requirements.																																															

U33D Series

Diagram of Dimensions - Screw Terminals

Large Can/Screw Terminals

Unit: mm (inches)



Case Dimensions and Standard Box Quantities

Case Size Code	ØD +2.0 (0.080)	L ±1.0 (0.040)	F ±0.25 (0.010)	Standard Box Quantity
C79 C92 CA5 CB7 CD0 CE3	50.8 (2.000)	79 (3.125) 92 (3.625) 105 (4.125) 117 (4.625) 130 (5.125) 143 (5.625)	22.2 (0.875)	49
D79 DA5 DB7 DD0 DE3	63.5 (2.500)	79 (3.125) 105 (4.125) 117 (4.625) 130 (5.125) 143 (5.625)	28.6 (1.125)	20
E92 EA5 EB7 ED0 EE3 EM9	76.2 (3.000)	92 (3.625) 105 (4.125) 117 (4.625) 130 (5.125) 143 (5.625) 219 (8.625)	31.8 (1.250)	16 9
F92 FA5 FB7 FD0 FE3 FJ1 FM9	89.0 (3.500)	92 (3.625) 105 (4.125) 117 (4.625) 130 (5.125) 143 (5.625) 181 (7.125) 219 (8.625)	31.8 (1.250)	5

Note:

In some cases, the color of the sleeve may change slightly due to the operating conditions, however, the discoloration will not impair capacitor function.

Terminal Specifications

Terminal Code	Available Case Diameter		Thread Size	Minimum Thread Depth	J ±0.5 (0.020)	H ±2.0 (0.080)	ØS ±0.25 (0.010)	ØT ±0.25 (0.010)
	ØD Code	ØD mm (inches)						
HP	C	50.8 (2.000)	10-32 NF-2B	9.5 (0.375)	6.4 (0.250)	L+J	8.0 (0.313)	11.1 (0.438)
HL	C	50.8 (2.000)	M5x0.8-6H	9.5 (0.375)	6.4 (0.250)	L+J	8.0 (0.313)	11.1 (0.438)
CD	D-E	63.5 - 76.2 (2.500 - 3.000)	M5x0.8-6H	8.5 (0.335)	5.0 (0.200)	L+J	13.0 (0.512)	18.8 (0.740)
CP	D-F	63.5 - 89.0 (2.500 - 3.500)	1/4-28 NF-2B	8.7 (0.344)	2.4 (0.093)	L+J	17.5 (0.689)	—
CH	D-F	63.5 - 89.0 (2.500 - 3.500)	1/4-28 NF-2B	11.9 (0.468)	6.4 (0.250)	L+J	17.5 (0.689)	—
CA	D-F	63.5 - 89.0 (2.500 - 3.500)	M6x1-6H	8.7 (0.344)	2.4 (0.093)	L+J	17.5 (0.689)	—
CS	D-F	63.5 - 89.0 (2.500 - 3.500)	M6x1-6H	11.9 (0.468)	6.4 (0.250)	L+J	17.5 (0.689)	—

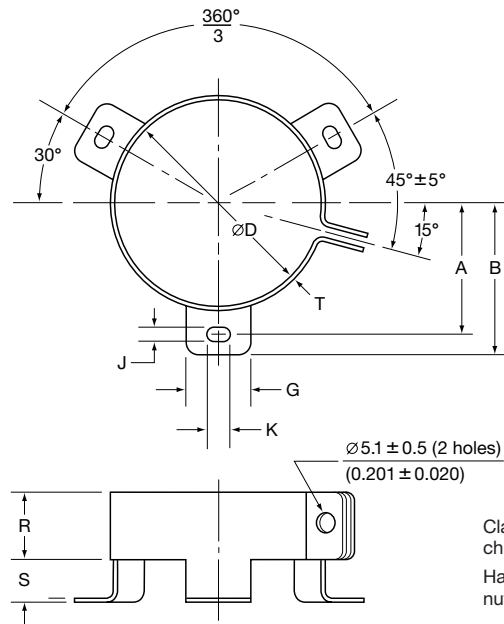
Mounting Hardware is optional. Refer to hardware specifications on the following page.

U33D Series

Mounting Hardware - Screw Terminals

Type C: Three-Footed Clamp

Unit: mm (inches)

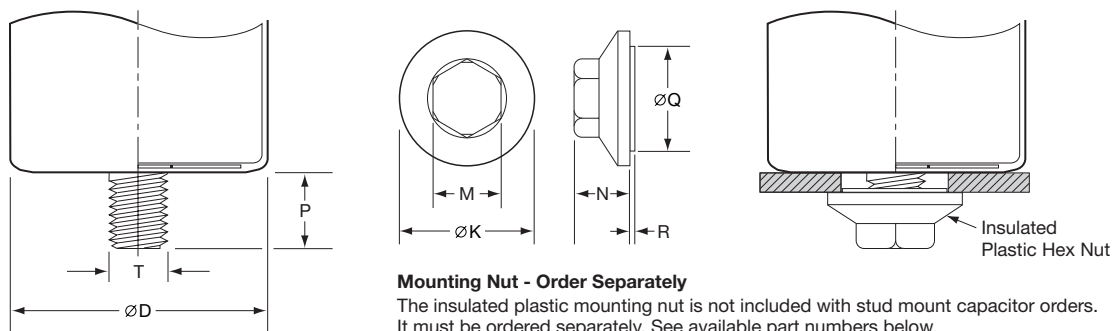


Clamp: Zinc with silver trivalent chromate post treatment.
Hardware: Screw, washer and hexagon nut included with each clamp.

Type C: Clamp Dimensions

Mounting Code	Case ØD	A ±1.0 (0.040)	B ±1.0 (0.040)	G ±1.0 (0.040)	J ±0.5 (0.020)	K ±0.5 (0.020)	R ±1.0 (0.040)	S ±1.0 (0.040)	T ±0.5 (0.020)
C	50.8 (2.000)	31.8 (1.250)	36.5 (1.437)	13.3 (0.524)	4.5 (0.177)	7.1 (0.280)	19.1 (0.751)	9.5 (0.374)	0.8 (0.032)
C	63.5 (2.500)	38.1 (1.500)	42.9 (1.689)	13.3 (0.524)	4.5 (0.177)	7.1 (0.280)	19.1 (0.751)	9.5 (0.374)	0.8 (0.032)
C	76.2 (3.000)	44.5 (1.750)	49.2 (1.937)	13.3 (0.524)	4.5 (0.177)	7.1 (0.280)	19.1 (0.751)	9.5 (0.374)	1.0 (0.040)
C	89.0 (3.500)	50.8 (2.000)	56.5 (2.224)	16.0 (0.630)	4.5 (0.177)	8.0 (0.313)	21.0 (0.827)	9.0 (0.354)	1.0 (0.040)

Type S: Stud Mounting



Mounting Nut - Order Separately

The insulated plastic mounting nut is not included with stud mount capacitor orders. It must be ordered separately. See available part numbers below.

Type S: Stud Dimensions

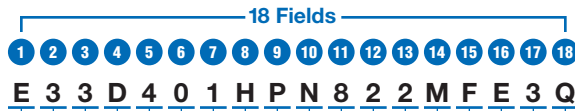
Mounting Code	P ±1.0 (0.040)	T Thread Size
S	16.0 (0.630)	M12

Mounting Nut Dimensions

Part Number	ØK ±2.0 (0.080)	M ±1.0 (0.040)	N ±1.0 (0.040)	ØQ ±1.0 (0.040)	R ±1.0 (0.040)
50-8D	30.0 (1.181)	19.0 (0.748)	18.0 (0.709)	22.0 (0.866)	1.40 (0.055)
50-8E	38.0 (1.496)	19.0 (0.748)	18.0 (0.709)	30.0 (1.181)	1.40 (0.055)

U33D Series

Part Numbering System for U33D Series When ordering, always specify complete 18-field global part number.



- 9 Supplement Code.** Field 18.
Q = PVC sleeve with PET end disk.
U = PVC sleeve with PPE end disk.
4 = UL746C compliant insulation for sleeve with end disk.
Other sleeve materials available as options upon request.
- 8 Case Size.** Fields 15, 16 and 17.
The single letter diameter code is inserted in field 15.
C = Ø50.8mm (Ø2.000")
D = Ø63.5mm (Ø2.500")
E = Ø76.2mm (Ø3.000")
F = Ø89.0mm (Ø3.500")

The double character length code is inserted in fields 16 and 17.
For lengths ≤99mm, insert the actual length rounded to nearest millimeter. For lengths of 100mm or more, insert the appropriate alpha numeric code as indicated below.
79 = 79mm (3.125")
92 = 92mm (3.625")
A5 = 105mm (4.125")
B7 = 117mm (4.625")
D0 = 130mm (5.125")
E3 = 143mm (5.625")
J1 = 181mm (7.125")
M9 = 219mm (8.625")
- 7 Capacitance Tolerance.** Field 14.
M = ±20%
- 6 Capacitance.** Fields 11, 12 and 13.
Expressed in Microfarads. The first two digits are significant figures inserted in fields 11 and 12, and the third digit inserted in field 13 indicates the number of zeros for capacitance of 10µF or more. R indicates the decimal point for capacitance less than 10µF (e.g. 8R2 = 8.2µF; 820 = 82µF; 821 = 820µF; 822 = 8,200µF; 823 = 82,000µF).
- 5 Mounting Hardware.** Field 10.
N = None.
C = Three-footed clamp.
S = Stud mount. *The mounting nut is not included with stud mount orders. It must be ordered separately.*
- 4 Terminal Type.** Fields 8 and 9.
HP = High post 10-32 NF-2B screw thread.
HL = High post M5x0.8 screw thread.
CD = Larger diameter M5x0.8 screw thread.
CP = Low post 1/4-28 NF-2B screw thread.
CH = High post 1/4-28 NF-2B screw thread.
CA = Low post M6x1 screw thread.
CS = High post M6x1 screw thread.
- 3 DC Rated Voltage.** Fields 5, 6 and 7.
Expressed in Volts. The first two digits are significant figures inserted in fields 5 and 6, and the third digit inserted in field 7 indicates the number of zeros for rated voltage of 10VDC or more. R indicates the decimal point for rated voltage less than 10VDC (e.g. 4R0 = 4.0VDC; 400 = 40VDC; 401 = 400VDC).
Rule Exception: Coding for rated voltage 315VDC = 3B1.
- 2 Series Name.** Fields 2, 3 and 4.
Enter the 3-letter/digit series name in fields 2, 3 and 4. If the series name is only 2 letters/digits, place a dash in field 4.
For a series name with more than 3 letters/digits, refer to the individual series for the appropriate 3-field series name.
- 1 Capacitor Type.** Field 1.
Aluminum Electrolytic Capacitor (Polar).

U33D Series

Standard Voltage Ratings - Screw Terminals

Rated Voltage (WVDC)	Capacitance (μF)	Global Part Number†	Nominal Case Size* D × L (mm)	Case Size Code	Maximum ESR (mΩ) at +25°C, 120Hz	Rated Ripple Current (A rms) at +105°C, 120Hz
25 Volts 32 Volts Surge	68,000	E33D250HPN683MC79Q	50.8 × 79	C79	19.7	11.2
	100,000	E33D250HPN104MC92Q	50.8 × 92	C92	13.4	14.3
	120,000	E33D250HPN124MCA5Q	50.8 × 105	CA5	11.2	16.4
	120,000	E33D250HPN124MCB7Q	50.8 × 117	CB7	11.2	17.1
	150,000	E33D250HPN154MCD0Q	50.8 × 130	CD0	8.9	19.8
	180,000	E33D250HPN184MCE3Q	50.8 × 143	CE3	7.4	22.4
	120,000	E33D250CPN124MD79Q	63.5 × 79	D79	13.7	15.1
	180,000	E33D250CPN184MDA5Q	63.5 × 105	DA5	9.1	20.3
	220,000	E33D250CPN224MDB7Q	63.5 × 117	DB7	7.5	23.3
	270,000	E33D250CPN274MDD0Q	63.5 × 130	DD0	6.1	27.0
	270,000	E33D250CPN274MDE3Q	63.5 × 143	DE3	6.1	27.8
	220,000	E33D250CPN224ME92Q	76.2 × 92	E92	7.6	23.7
	270,000	E33D250CPN274MEA5Q	76.2 × 105	EA5	6.2	27.4
	330,000	E33D250CPN334MEB7Q	76.2 × 117	EB7	5.1	31.3
	390,000	E33D250CPN394MED0Q	76.2 × 130	ED0	4.3	35.3
	390,000	E33D250CPN394MEE3Q	76.2 × 143	EE3	4.3	36.6
	680,000	E33D250CPN684MEM9Q	76.2 × 219	EM9	2.5	56.5
	330,000	E33D250CPN334MF92Q	89 × 92	F92	6.4	28.4
	390,000	E33D250CPN394MFA5Q	89 × 105	FA5	5.4	32.0
	470,000	E33D250CPN474MFB7Q	89 × 117	FB7	4.5	36.5
	560,000	E33D250CPN564MFD0Q	89 × 130	FD0	3.8	41.5
	560,000	E33D250CPN564MFE3Q	89 × 143	FE3	3.9	41.7
	820,000	E33D250CPN824MFJ1Q	89 × 181	FJ1	2.7	55.7
	1,000,000	E33D250CPN105MFM9Q	89 × 219	FM9	2.4	62.5
50 Volts 63 Volts Surge	27,000	E33D500HPN273MC79Q	50.8 × 79	C79	17.8	11.8
	39,000	E33D500HPN393MC92Q	50.8 × 92	C92	12.3	14.9
	47,000	E33D500HPN473MCA5Q	50.8 × 105	CA5	10.2	17.1
	47,000	E33D500HPN473MCB7Q	50.8 × 117	CB7	10.2	17.9
	56,000	E33D500HPN563MCD0Q	50.8 × 130	CD0	8.6	20.2
	68,000	E33D500HPN683MCE3Q	50.8 × 143	CE3	7.1	23.0
	47,000	E33D500CPN473MD79Q	63.5 × 79	D79	13.6	15.1
	82,000	E33D500CPN823MDA5Q	63.5 × 105	DA5	7.8	21.9
	82,000	E33D500CPN823MDB7Q	63.5 × 117	DB7	7.8	22.8
	100,000	E33D500CPN104MDD0Q	63.5 × 130	DD0	6.4	26.3
	120,000	E33D500CPN124MDE3Q	63.5 × 143	DE3	5.3	29.6
	100,000	E33D500CPN104ME92Q	76.2 × 92	E92	8.0	23.1
	120,000	E33D500CPN124MEA5Q	76.2 × 105	EA5	6.7	26.5
	120,000	E33D500CPN124MEB7Q	76.2 × 117	EB7	6.7	27.4
	150,000	E33D500CPN154MED0Q	76.2 × 130	ED0	5.3	31.7
	180,000	E33D500CPN184MEE3Q	76.2 × 143	EE3	4.4	36.0
	270,000	E33D500CPN274MEM9Q	76.2 × 219	EM9	3.0	51.6
	120,000	E33D500CPN124MF92Q	89 × 92	F92	7.3	26.6
	150,000	E33D500CPN154MFA5Q	89 × 105	FA5	5.9	30.8
	180,000	E33D500CPN184MFB7Q	89 × 117	FB7	4.9	35.0
	220,000	E33D500CPN224MFD0Q	89 × 130	FD0	4.0	40.4
	220,000	E33D500CPN224MFE3Q	89 × 143	FE3	4.0	41.3
	330,000	E33D500CPN334MFJ1Q	89 × 181	FJ1	2.7	55.9
	390,000	E33D500CPN394MFM9Q	89 × 219	FM9	2.4	63.0
63 Volts 79 Volts Surge	22,000	E33D630HPN223MC79Q	50.8 × 79	C79	16.4	12.3
	27,000	E33D630HPN273MC92Q	50.8 × 92	C92	13.3	14.3
	33,000	E33D630HPN333MCA5Q	50.8 × 105	CA5	10.9	16.6
	33,000	E33D630HPN333MCB7Q	50.8 × 117	CB7	10.9	17.3
	39,000	E33D630HPN393MCD0Q	50.8 × 130	CD0	9.2	19.4
	47,000	E33D630HPN473MCE3Q	50.8 × 143	CE3	7.7	22.1
	33,000	E33D630CPN333MD79Q	63.5 × 79	D79	14.5	14.7
	56,000	E33D630CPN563MDA5Q	63.5 × 105	DA5	8.6	20.9

† For terminal, mounting and construction options, refer to the part numbering system for descriptions and codes.

* Refer to diagram of dimensions for detailed case size specifications.

U33D Series

Standard Voltage Ratings - Screw Terminals

Rated Voltage (WVDC)	Capacitance (µF)	Global Part Number†	Nominal Case Size* D × L (mm)	Case Size Code	Maximum ESR (mΩ) at +25°C, 120Hz	Rated Ripple Current (A rms) at +105°C, 120Hz
63Volts 79Volts Surge	56,000	E33D630CPN563MDB7Q	63.5 × 117	DB7	8.6	21.7
	68,000	E33D630CPN683MDD0Q	63.5 × 130	DD0	7.1	25.0
	82,000	E33D630CPN823MDE3Q	63.5 × 143	DE3	5.9	28.3
	68,000	E33D630CPN683ME92Q	76.2 × 92	E92	8.8	22.0
	82,000	E33D630CPN823MEA5Q	76.2 × 105	EA5	7.3	25.3
	82,000	E33D630CPN823MEB7Q	76.2 × 117	EB7	7.3	26.1
	100,000	E33D630CPN104MED0Q	76.2 × 130	ED0	6.0	29.9
	120,000	E33D630CPN124MEE3Q	76.2 × 143	EE3	5.0	34.0
	180,000	E33D630CPN184MEM9Q	76.2 × 219	EM9	3.3	48.7
	82,000	E33D630CPN823MF92Q	89 × 92	F92	8.3	25.0
	100,000	E33D630CPN104MFA5Q	89 × 105	FA5	6.8	28.6
	120,000	E33D630CPN124MFB7Q	89 × 117	FB7	5.7	32.5
	150,000	E33D630CPN154MFD0Q	89 × 130	FD0	4.5	37.9
	150,000	E33D630CPN154MFE3Q	89 × 143	FE3	4.5	38.8
	220,000	E33D630CPN224MFJ1Q	89 × 181	FJ1	3.1	51.9
	270,000	E33D630CPN274MFM9Q	89 × 219	FM9	2.5	61.0
100 Volts 125 Volts Surge	8,200	E33D101HPN822MC79Q	50.8 × 79	C79	31.7	8.8
	12,000	E33D101HPN123MC92Q	50.8 × 92	C92	21.7	11.2
	15,000	E33D101HPN153MCA5Q	50.8 × 105	CA5	17.3	13.2
	15,000	E33D101HPN153MCB7Q	50.8 × 117	CB7	17.3	13.7
	18,000	E33D101HPN183MCD0Q	50.8 × 130	CD0	14.4	15.5
	22,000	E33D101HPN223MCE3Q	50.8 × 143	CE3	11.8	17.8
	15,000	E33D101CPN153MD79Q	63.5 × 79	D79	17.9	13.2
	22,000	E33D101CPN223MDA5Q	63.5 × 105	DA5	12.2	17.5
	27,000	E33D101CPN273MDB7Q	63.5 × 117	DB7	9.9	20.2
	33,000	E33D101CPN333MDD0Q	63.5 × 130	DD0	8.1	23.3
	33,000	E33D101CPN333MDE3Q	63.5 × 143	DE3	8.1	24.0
	27,000	E33D101CPN273ME92Q	76.2 × 92	E92	11.9	19.0
	33,000	E33D101CPN333MEA5Q	76.2 × 105	EA5	9.7	22.0
	39,000	E33D101CPN393MEB7Q	76.2 × 117	EB7	8.2	24.7
	47,000	E33D101CPN473MED0Q	76.2 × 130	ED0	6.8	28.1
	56,000	E33D101CPN563MEE3Q	76.2 × 143	EE3	5.7	31.8
	82,000	E33D101CPN823MEM9Q	76.2 × 219	EM9	3.9	45.0
	39,000	E33D101CPN393MF92Q	89 × 92	F92	10.3	22.5
	47,000	E33D101CPN473MFA5Q	89 × 105	FA5	8.5	25.5
	56,000	E33D101CPN563MFB7Q	89 × 117	FB7	7.1	29.0
	68,000	E33D101CPN683MFD0Q	89 × 130	FD0	5.9	33.3
	68,000	E33D101CPN683MFE3Q	89 × 143	FE3	5.9	34.0
	100,000	E33D101CPN104MFJ1Q	89 × 181	FJ1	4.0	45.6
	120,000	E33D101CPN124MFM9Q	89 × 219	FM9	3.3	53.0
200 Volts 250 Volts Surge	3,300	E33D201HPN332MC79Q	50.8 × 79	C79	40.0	7.8
	4,700	E33D201HPN472MC92Q	50.8 × 92	C92	28.1	9.9
	4,700	E33D201HPN472MCA5Q	50.8 × 105	CA5	28.1	10.3
	5,600	E33D201HPN562MCB7Q	50.8 × 117	CB7	23.6	11.8
	6,800	E33D201HPN682MCD0Q	50.8 × 130	CD0	19.4	13.4
	8,200	E33D201HPN822MCE3Q	50.8 × 143	CE3	16.1	15.3
	5,600	E33D201CPN562MD79Q	63.5 × 79	D79	26.4	10.9
	8,200	E33D201CPN822MDA5Q	63.5 × 105	DA5	18.0	14.4
	10,000	E33D201CPN103MDB7Q	63.5 × 117	DB7	14.8	16.6
	12,000	E33D201CPN123MDD0Q	63.5 × 130	DD0	12.3	18.9
	12,000	E33D201CPN123MDE3Q	63.5 × 143	DE3	12.3	19.5
	10,000	E33D201CPN103ME92Q	76.2 × 92	E92	18.4	15.3
	12,000	E33D201CPN123MEA5Q	76.2 × 105	EA5	15.3	17.5
	15,000	E33D201CPN153MEB7Q	76.2 × 117	EB7	12.3	20.2
	18,000	E33D201CPN183MED0Q	76.2 × 130	ED0	10.2	22.9
	18,000	E33D201CPN183MEE3Q	76.2 × 143	EE3	10.2	23.8
	33,000	E33D201CPN333MEM9Q	76.2 × 219	EM9	5.6	37.6

†For terminal, mounting and construction options, refer to the part numbering system for descriptions and codes.

*Refer to diagram of dimensions for detailed case size specifications.

U33D Series

Standard Voltage Ratings - Screw Terminals

Rated Voltage (WVDC)	Capacitance (μF)	Global Part Number†	Nominal Case Size* D × L (mm)	Case Size Code	Maximum ESR (mΩ) at +25°C, 120Hz	Rated Ripple Current (A rms) at +105°C, 120Hz
200 Volts 250 Volts Surge	15,000	E33D201CPN153MF92Q	89 × 92	F92	12.3	20.5
	18,000	E33D201CPN183MFA5Q	89 × 105	FA5	10.2	23.3
	22,000	E33D201CPN223MFB7Q	89 × 117	FB7	8.4	26.8
	22,000	E33D201CPN223MFD0Q	89 × 130	FD0	8.4	27.9
	27,000	E33D201CPN273MFE3Q	89 × 143	FE3	6.8	31.6
	39,000	E33D201CPN393MFJ1Q	89 × 181	FJ1	4.7	42.0
	47,000	E33D201CPN473MFM9Q	89 × 219	FM9	3.9	48.9
250 Volts 300 Volts Surge	2,200	E33D251HPN222MC79Q	50.8 × 79	C79	50.9	6.9
	2,700	E33D251HPN272MC92Q	50.8 × 92	C92	41.5	8.1
	3,300	E33D251HPN332MCA5Q	50.8 × 105	CA5	33.9	9.4
	3,900	E33D251HPN392MCB7Q	50.8 × 117	CB7	28.7	10.7
	4,700	E33D251HPN472MCD0Q	50.8 × 130	CD0	23.8	12.1
	4,700	E33D251HPN472MCE3Q	50.8 × 143	CE3	23.8	12.5
	3,900	E33D251CPN392MD79Q	63.5 × 79	D79	30.8	10.1
	5,600	E33D251CPN562MDA5Q	63.5 × 105	DA5	21.4	13.2
	6,800	E33D251CPN682MDB7Q	63.5 × 117	DB7	17.6	15.2
	6,800	E33D251CPN682MDD0Q	63.5 × 130	DD0	17.6	15.8
	8,200	E33D251CPN822MDE3Q	63.5 × 143	DE3	14.6	17.9
	6,800	E33D251CPN682ME92Q	76.2 × 92	E92	19.4	14.9
	8,200	E33D251CPN822MEA5Q	76.2 × 105	EA5	16.1	17.1
	10,000	E33D251CPN103MEB7Q	76.2 × 117	EB7	13.2	19.5
	12,000	E33D251CPN123MED0Q	76.2 × 130	ED0	11.0	22.1
	12,000	E33D251CPN123MEE3Q	76.2 × 143	EE3	11.0	22.9
	18,000	E33D251CPN183MEM9Q	76.2 × 219	EM9	8.2	31.0
	8,200	E33D251CPN822MF92Q	89 × 92	F92	13.7	19.5
	10,000	E33D251CPN103MFA5Q	89 × 105	FA5	11.2	22.3
	12,000	E33D251CPN123MFB7Q	89 × 117	FB7	9.3	25.4
	15,000	E33D251CPN153MFD0Q	89 × 130	FD0	7.5	29.6
	18,000	E33D251CPN183MFE3Q	89 × 143	FE3	6.2	33.1
	22,000	E33D251CPN223MFJ1Q	89 × 181	FJ1	5.1	40.5
	27,000	E33D251CPN273MFM9Q	89 × 219	FM9	4.1	47.5
315 Volts 365 Volts Surge	1,800	E33D3B1HPN182MC79Q	50.8 × 79	C79	55.6	6.7
	2,200	E33D3B1HPN222MC92Q	50.8 × 92	C92	45.5	7.7
	2,700	E33D3B1HPN272MCA5Q	50.8 × 105	CA5	37.0	9.0
	2,700	E33D3B1HPN272MCB7Q	50.8 × 117	CB7	37.0	9.4
	3,300	E33D3B1HPN332MCD0Q	50.8 × 130	CD0	30.3	10.7
	3,900	E33D3B1HPN392MCE3Q	50.8 × 143	CE3	25.6	12.1
	2,200	E33D3B1CPN222MD79Q	63.5 × 79	D79	47.3	8.1
	3,300	E33D3B1CPN332MDA5Q	63.5 × 105	DA5	31.5	10.9
	3,900	E33D3B1CPN392MDB7Q	63.5 × 117	DB7	26.7	12.3
	4,700	E33D3B1CPN472MDD0Q	63.5 × 130	DD0	22.1	14.1
	5,600	E33D3B1CPN562MDE3Q	63.5 × 143	DE3	18.6	15.9
	3,900	E33D3B1CPN392ME92Q	76.2 × 92	E92	28.7	12.2
	4,700	E33D3B1CPN472MEA5Q	76.2 × 105	EA5	23.8	14.0
	5,600	E33D3B1CPN562MEB7Q	76.2 × 117	EB7	20.0	15.8
	6,800	E33D3B1CPN682MED0Q	76.2 × 130	ED0	16.5	18.0
	8,200	E33D3B1CPN822MEE3Q	76.2 × 143	EE3	13.7	20.6
	15,000	E33D3B1CPN153MEM9Q	76.2 × 219	EM9	7.5	32.5
	6,800	E33D3B1CPN682MF92Q	89 × 92	F92	16.5	17.7
	8,200	E33D3B1CPN822MFA5Q	89 × 105	FA5	13.7	20.2
	8,200	E33D3B1CPN822MFB7Q	89 × 117	FB7	13.7	21.0
	10,000	E33D3B1CPN103MFD0Q	89 × 130	FD0	11.2	24.1
	12,000	E33D3B1CPN123MFE3Q	89 × 143	FE3	9.3	27.0
	15,000	E33D3B1CPN153MFJ1Q	89 × 181	FJ1	7.5	33.4
	18,000	E33D3B1CPN183MFM9Q	89 × 219	FM9	6.2	38.8

† For terminal, mounting and construction options, refer to the part numbering system for descriptions and codes.

* Refer to diagram of dimensions for detailed case size specifications.

U33D Series

Standard Voltage Ratings - Screw Terminals

Rated Voltage (WVDC)	Capacitance (µF)	Global Part Number†	Nominal Case Size* D × L (mm)	Case Size Code	Maximum ESR (mΩ) at +25°C, 120Hz	Rated Ripple Current (A rms) at +105°C, 120Hz
350 Volts 400 Volts Surge	1,500	E33D351HPN152MC79Q	50.8 × 79	C79	64.0	6.2
	1,800	E33D351HPN182MC92Q	50.8 × 92	C92	53.3	7.2
	2,200	E33D351HPN222MCA5Q	50.8 × 105	CA5	43.6	8.3
	2,700	E33D351HPN272MCB7Q	50.8 × 117	CB7	35.6	9.6
	3,300	E33D351HPN332MCD0Q	50.8 × 130	CD0	29.1	11.0
	3,300	E33D351HPN332MCE3Q	50.8 × 143	CE3	29.1	11.4
	2,200	E33D351CPN222MD79Q	63.5 × 79	D79	45.5	8.3
	3,300	E33D351CPN332MDA5Q	63.5 × 105	DA5	30.3	11.1
	3,900	E33D351CPN392MDB7Q	63.5 × 117	DB7	25.6	12.6
	4,700	E33D351CPN472MDD0Q	63.5 × 130	DD0	21.3	14.4
	5,600	E33D351CPN562MDE3Q	63.5 × 143	DE3	17.9	16.2
	3,900	E33D351CPN392ME92Q	76.2 × 92	E92	27.7	12.4
	4,700	E33D351CPN472MEA5Q	76.2 × 105	EA5	23.0	14.3
	5,600	E33D351CPN562MEB7Q	76.2 × 117	EB7	19.3	16.1
	6,800	E33D351CPN682MED0Q	76.2 × 130	ED0	15.9	18.4
	8,200	E33D351CPN822MEE3Q	76.2 × 143	EE3	13.2	20.9
	12,000	E33D351CPN123MEM9Q	76.2 × 219	EM9	9.0	29.6
	5,600	E33D351CPN562MF92Q	89 × 92	F92	20.0	16.1
	6,800	E33D351CPN682MFA5Q	89 × 105	FA5	16.5	18.4
	8,600	E33D351CPN862MFB7Q	89 × 117	FB7	13.0	21.5
	10,000	E33D351CPN103MFD0Q	89 × 130	FD0	11.2	24.1
	10,000	E33D351CPN103MFE3Q	89 × 143	FE3	11.2	24.7
	15,000	E33D351CPN153MFJ1Q	89 × 181	FJ1	7.5	33.4
	18,000	E33D351CPN183MFM9Q	89 × 219	FM9	6.2	38.8
400 Volts 450 Volts Surge	1,200	E33D401HPN122MC79Q	50.8 × 79	C79	80.0	5.5
	1,500	E33D401HPN152MC92Q	50.8 × 92	C92	64.0	6.5
	1,800	E33D401HPN182MCA5Q	50.8 × 105	CA5	53.3	7.5
	2,200	E33D401HPN222MCB7Q	50.8 × 117	CB7	43.6	8.6
	2,700	E33D401HPN272MCD0Q	50.8 × 130	CD0	35.6	9.9
	2,700	E33D401HPN272MCE3Q	50.8 × 143	CE3	35.6	10.3
	1,800	E33D401CPN182MD79Q	63.5 × 79	D79	55.6	7.5
	2,700	E33D401CPN272MDA5Q	63.5 × 105	DA5	37.0	10.1
	3,300	E33D401CPN332MDB7Q	63.5 × 117	DB7	30.3	11.6
	3,900	E33D401CPN392MDD0Q	63.5 × 130	DD0	25.6	13.1
	4,700	E33D401CPN472MDE3Q	63.5 × 143	DE3	21.3	14.8
	3,300	E33D401CPN332ME92Q	76.2 × 92	E92	32.7	11.4
	3,900	E33D401CPN392MEA5Q	76.2 × 105	EA5	27.7	13.0
	4,700	E33D401CPN472MEB7Q	76.2 × 117	EB7	23.0	14.8
	5,600	E33D401CPN562MED0Q	76.2 × 130	ED0	19.3	16.7
	6,800	E33D401CPN682MEE3Q	76.2 × 143	EE3	15.9	19.1
	12,000	E33D401CPN123MEM9Q	76.2 × 219	EM9	9.0	29.6
	4,700	E33D401CPN472MF92Q	89 × 92	F92	23.8	14.7
	5,600	E33D401CPN562MFA5Q	89 × 105	FA5	20.0	16.7
	6,800	E33D401CPN682MFB7Q	89 × 117	FB7	16.5	19.1
	8,200	E33D401CPN822MFD0Q	89 × 130	FD0	13.7	21.9
	8,200	E33D401CPN822MFE3Q	89 × 143	FE3	13.7	22.3
	12,000	E33D401CPN123MFJ1Q	89 × 181	FJ1	9.3	29.9
	15,000	E33D401CPN153MFM9Q	89 × 219	FM9	7.5	35.4
450 Volts 500 Volts Surge	1,000	E33D451HPN102MC79Q	50.8 × 79	C79	96.0	5.1
	1,200	E33D451HPN122MC92Q	50.8 × 92	C92	80.0	5.8
	1,500	E33D451HPN152MCA5Q	50.8 × 105	CA5	64.0	6.8
	1,800	E33D451HPN182MCB7Q	50.8 × 117	CB7	53.3	7.8
	2,200	E33D451HPN222MCD0Q	50.8 × 130	CD0	43.6	8.9
	2,700	E33D451HPN272MCE3Q	50.8 × 143	CE3	35.6	10.3
	1,500	E33D451CPN152MD79Q	63.5 × 79	D79	64.0	7.0
	2,700	E33D451CPN272MDA5Q	63.5 × 105	DA5	35.6	10.3

† For terminal, mounting and construction options, refer to the part numbering system for descriptions and codes.

* Refer to diagram of dimensions for detailed case size specifications.

U33D Series

Standard Voltage Ratings - Screw Terminals

Rated Voltage (WVDC)	Capacitance (µF)	Global Part Number†	Nominal Case Size* D × L (mm)	Case Size Code	Maximum ESR (mΩ) at +25°C, 120Hz	Rated Ripple Current (A rms) at +105°C, 120Hz
450 Volts 500 Volts Surge	2,700	E33D451CPN272MDB7Q	63.5 × 117	DB7	35.6	10.7
	3,300	E33D451CPN332MDD0Q	63.5 × 130	DD0	29.1	12.3
	3,900	E33D451CPN392MDE3Q	63.5 × 143	DE3	24.6	13.8
	3,300	E33D451CPN332ME92Q	76.2 × 92	E92	31.5	11.7
	3,900	E33D451CPN392MEA5Q	76.2 × 105	EA5	26.7	13.3
	3,900	E33D451CPN392MEB7Q	76.2 × 117	EB7	26.7	13.7
	4,700	E33D451CPN472MED0Q	76.2 × 130	ED0	22.1	15.6
	5,600	E33D451CPN562MEE3Q	76.2 × 143	EE3	18.6	17.6
	10,000	E33D451CPN103MEM9Q	76.2 × 219	EM9	10.4	27.6
	3,900	E33D451CPN392MF92Q	89 × 92	F92	28.7	13.4
	4,700	E33D451CPN472MFA5Q	89 × 105	FA5	23.8	15.3
	5,600	E33D451CPN562MFB7Q	89 × 117	FB7	20.0	17.3
	6,800	E33D451CPN682MFD0Q	89 × 130	FD0	16.5	19.9
	8,200	E33D451CPN822MFE3Q	89 × 143	FE3	13.7	22.3
	10,000	E33D451CPN103MFJ1Q	89 × 181	FJ1	11.2	27.3
	12,000	E33D451CPN123MFM9Q	89 × 219	FM9	9.3	31.7
500 Volts 550 Volts Surge	680	E33D501HPN681MC79Q	50.8 × 79	C79	129.4	4.4
	820	E33D501HPN821MC92Q	50.8 × 92	C92	107.3	5.0
	1,000	E33D501HPN102MCA5Q	50.8 × 105	CA5	88.0	5.8
	1,200	E33D501HPN122MCB7Q	50.8 × 117	CB7	73.3	6.7
	1,500	E33D501HPN152MCD0Q	50.8 × 130	CD0	58.7	7.7
	1,500	E33D501HPN152MCE3Q	50.8 × 143	CE3	58.7	8.0
	1,200	E33D501CPN122MD79Q	63.5 × 79	D79	76.7	6.4
	1,800	E33D501CPN182MDA5Q	63.5 × 105	DA5	51.1	8.6
	2,200	E33D501CPN222MDB7Q	63.5 × 117	DB7	41.8	9.8
	2,200	E33D501CPN222MDD0Q	63.5 × 130	DD0	41.8	10.3
	2,700	E33D501CPN272MDE3Q	63.5 × 143	DE3	34.1	11.7
	2,200	E33D501CPN222ME92Q	76.2 × 92	E92	45.5	9.7
	2,700	E33D501CPN272MEA5Q	76.2 × 105	EA5	37.0	11.3
	2,700	E33D501CPN272MEB7Q	76.2 × 117	EB7	37.0	11.6
	3,300	E33D501CPN332MED0Q	76.2 × 130	ED0	30.3	13.3
	3,900	E33D501CPN392MEE3Q	76.2 × 143	EE3	25.6	15.0
	6,800	E33D501CPN682MEM9Q	76.2 × 219	EM9	14.7	23.2
	3,300	E33D501CPN332MF92Q	89 × 92	F92	31.5	12.8
	3,900	E33D501CPN392MFA5Q	89 × 105	FA5	26.7	14.4
	3,900	E33D501CPN392MFB7Q	89 × 117	FB7	26.7	15.0
	4,700	E33D501CPN472MFD0Q	89 × 130	FD0	22.1	17.2
	5,600	E33D501CPN562MFE3Q	89 × 143	FE3	18.6	19.2
	6,800	E33D501CPN682MFJ1Q	89 × 181	FJ1	15.3	23.3
	10,000	E33D501CPN103MFM9Q	89 × 219	FM9	10.4	30.0
550 Volts 600 Volts Surge	560	E33D551HPN561MC79Q	50.8 × 79	C79	157.1	4.0
	680	E33D551HPN681MC92Q	50.8 × 92	C92	129.4	4.6
	820	E33D551HPN821MCA5Q	50.8 × 105	CA5	107.3	5.3
	1,000	E33D551HPN102MCB7Q	50.8 × 117	CB7	88.0	6.1
	1,200	E33D551HPN122MCD0Q	50.8 × 130	CD0	73.3	6.9
	1,200	E33D551HPN122MCE3Q	50.8 × 143	CE3	73.3	7.2
	1,000	E33D551CPN102MD79Q	63.5 × 79	D79	92.0	5.8
	1,500	E33D551CPN152MDA5Q	63.5 × 105	DA5	61.3	7.8
	1,800	E33D551CPN182MDB7Q	63.5 × 117	DB7	51.1	8.9
	1,800	E33D551CPN182MDD0Q	63.5 × 130	DD0	51.1	9.3
	2,200	E33D551CPN222MDE3Q	63.5 × 143	DE3	41.8	10.6
	1,800	E33D551CPN182ME92Q	76.2 × 92	E92	55.6	8.8
	2,200	E33D551CPN222MEA5Q	76.2 × 105	EA5	45.5	10.2
	2,200	E33D551CPN222MEB7Q	76.2 × 117	EB7	45.5	10.5
	2,700	E33D551CPN272MED0Q	76.2 × 130	ED0	37.0	12.0
	3,300	E33D551CPN332MEE3Q	76.2 × 143	EE3	30.3	13.8
	5,600	E33D551CPN562MEM9Q	76.2 × 219	EM9	17.9	21.0

† For terminal, mounting and construction options, refer to the part numbering system for descriptions and codes.

* Refer to diagram of dimensions for detailed case size specifications.

U33D Series

Standard Voltage Ratings - Screw Terminals

Rated Voltage (WVDC)	Capacitance (μF)	Global Part Number†	Nominal Case Size* D × L (mm)	Case Size Code	Maximum ESR (mΩ) at +25°C, 120Hz	Rated Ripple Current (A rms) at +105°C, 120Hz
550 Volts 600 Volts Surge	2,200	E33D551CPN222MF92Q	89 × 92	F92	47.3	10.5
	2,700	E33D551CPN272MFA5Q	89 × 105	FA5	38.5	12.0
	3,300	E33D551CPN332MFB7Q	89 × 117	FB7	31.5	13.8
	3,900	E33D551CPN392MFD0Q	89 × 130	FD0	26.7	15.6
	4,700	E33D551CPN472MFE3Q	89 × 143	FE3	22.1	17.6
	5,600	E33D551CPN562MFJ1Q	89 × 181	FJ1	18.6	21.2
	8,200	E33D551CPN822MFM9Q	89 × 219	FM9	12.7	27.2

† For terminal, mounting and construction options, refer to the part numbering system for descriptions and codes.

* Refer to diagram of dimensions for detailed case size specifications.