

U787D Series

UNITED
CHEMI-CON

U787D
LARGE TUBULARS 150°C

- Large Tubulars
- Very High +150°C Temperature
- Designed For Automotive 36V and 42V Systems
- Vibration Resistant
- Optional Low Profile Mounting



The U787D series, the industry's first 150°C aluminum electrolytic, offers a voltage range of 6.3 to 80VDC, high capacitance and high ripple current capability. The U787D series is the optimum solution for reducing the size, weight and cost of high performance automotive 36V and 42V systems. These capacitors maintain a continuous 2,000 hour, 150°C load life (8,000 hours at 125°C with the 150°C rated ripple current applied) and are high vibration resistant. The U787D capacitors are available in either the standard three lead (keyed polarity) radial vertical mounting or the optional low profile three formed lead horizontal mounting style. Custom designs are available upon request.

The U787D capacitors are *not* solvent proof. Refer to guidelines and precautions on the website for usage and installation conditions recommended for United Chemi-Con products.

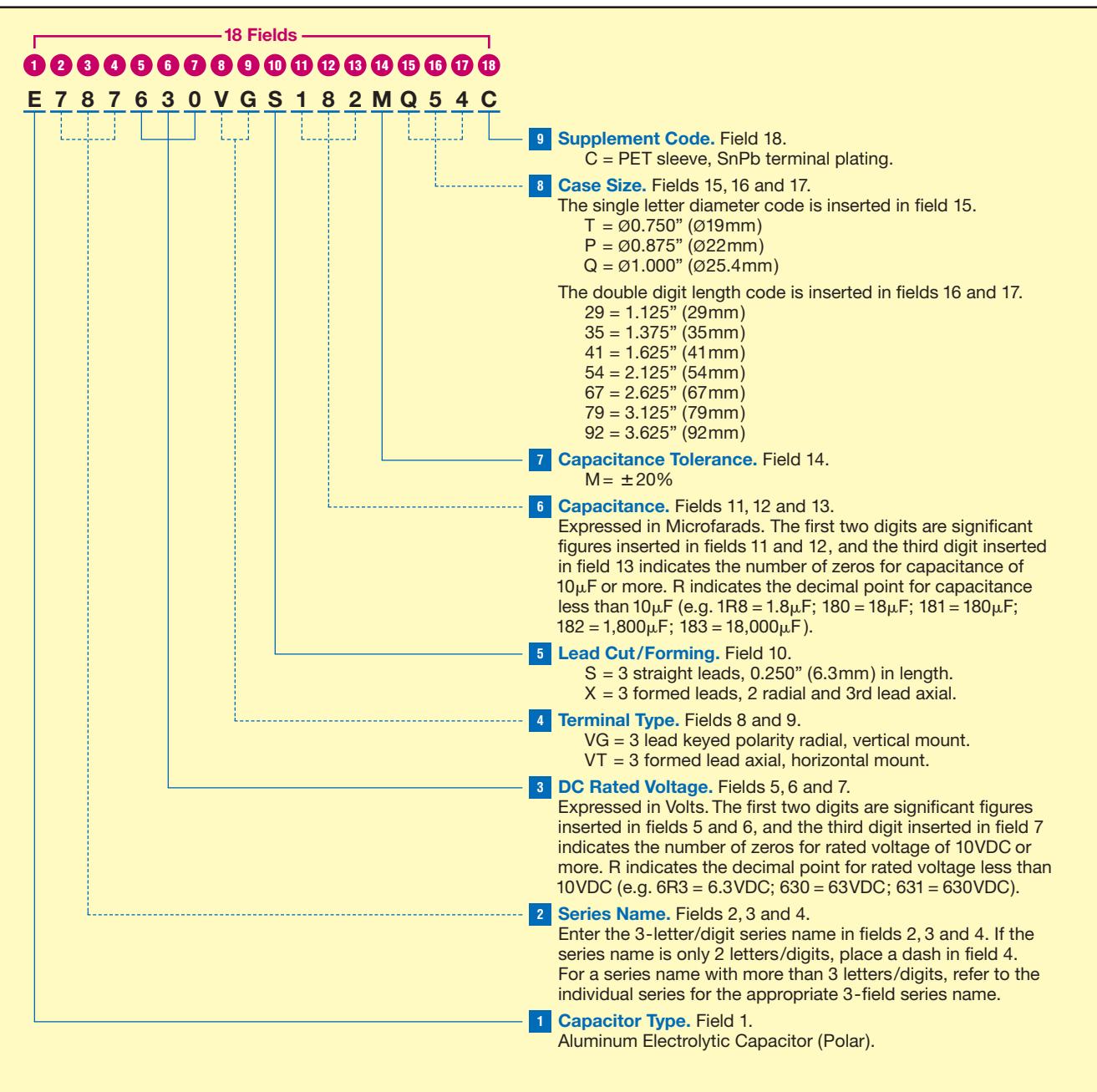
Summary of Specifications

- 3 radial leads for vertical mount; optional 3 formed leads for horizontal mount.
- Capacitance range: 180 to 47,000 μ F.
- Voltage range: 6.3 to 80VDC.
- Category temperature range: -55°C to +150°C.
- Leakage current in μ A: $I = K\sqrt{CV}$: K = 0.5 at +25°C, 6.5 at +150°C after 5 minutes.
- Standard capacitance tolerance: $\pm 20\%$
- Nominal case size (D x L): 19 x 29mm to 25 x 92mm.
- Rated lifetime: 2,000 hours at +150°C with rated ripple current applied and 8,000 hours at +125°C with +150°C rated ripple current applied.

U787D Specifications - Large Tubulars

Item	Characteristics																	
Category Temperature Range	−55 to +150°C																	
Rated Voltage Range	6.3 to 80VDC																	
Capacitance Range	180 to 47,000µF at +25°C, 120Hz																	
Capacitance Tolerance	± 20% (M) at +25°C, 120Hz																	
Vibration Rating	10-1,000Hz, 20g, sinusoidal (10-2,000Hz, 40g, sinusoidal available upon request)																	
Leakage Current	$I = K\sqrt{CV}$: K = 0.5 at +25°C, 6.5 at +150°C after 5 minutes. Where I = Max. leakage current (µA), C = Nominal capacitance (µF) and V = Rated voltage (V)																	
Rated Ripple Current Multipliers	<p>Ambient Temperature (°C)</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <td>+85°C</td> <td>+105°C</td> <td>+125°C</td> <td>+150°C</td> </tr> <tr> <td>1.50</td> <td>1.25</td> <td>1.00</td> <td>0.45</td> </tr> </table> <p>Frequency (Hz)</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <td>300Hz</td> <td>1kHz</td> <td>20k-100kHz</td> </tr> <tr> <td>0.75</td> <td>0.82</td> <td>1.00</td> </tr> </table>				+85°C	+105°C	+125°C	+150°C	1.50	1.25	1.00	0.45	300Hz	1kHz	20k-100kHz	0.75	0.82	1.00
+85°C	+105°C	+125°C	+150°C															
1.50	1.25	1.00	0.45															
300Hz	1kHz	20k-100kHz																
0.75	0.82	1.00																
Endurance (Load Life)	<p>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 +150°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.</p> <p>Capacitance change: ≤ 15% from initial measurement ESR change : ≤ 200% of initial specified limit Impedance change : ≤ 200% of initial specified limit Leakage current : ≤ initial specified limit</p>																	
Shelf Life	<p>The following specifications shall be satisfied when the capacitors are restored to +25°C after exposing them for 1,000 hours at +150°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.</p> <p>Capacitance change: ≤ 10% from initial measurement ESR change : ≤ 150% of initial specified limit Leakage current : ≤ initial specified limit</p>																	

Part Numbering System for U787D Series When ordering, always specify complete 18-field global part number.



Standard Voltage Ratings - Large Tubulars

Rated Voltage (WVDC)	Capacitance (μF)	Global Part Number†	Nominal Case Size* D × L (inches)	Case Size Code	Maximum ESR (mΩ) at +25°C 20k-100kHz	Maximum Impedance (mΩ) at +25°C, 100kHz	Rated Ripple Current (A rms) at +125°C, 20kHz
63 Volts 79 Volts Surge	270	E787630VGS271MT29C	0.750 × 1.125	T29	105.0	147.0	4.2
	470	E787630VGS471MT35C	0.750 × 1.375	T35	88.0	123.0	5.1
	560	E787630VGS561MT41C	0.750 × 1.625	T41	70.0	98.0	6.0
	820	E787630VGS821MT54C	0.750 × 2.125	T54	51.8	72.8	7.8
	1,200	E787630VGS122MT67C	0.750 × 2.625	T67	32.2	45.2	9.0
	1,500	E787630VGS152MT79C	0.750 × 3.125	T79	24.9	35.0	9.6
	390	E787630VGS391MP29C	0.875 × 1.125	P29	69.0	96.6	5.8
	680	E787630VGS681MP35C	0.875 × 1.375	P35	52.7	73.8	7.1
	820	E787630VGS821MP41C	0.875 × 1.625	P41	36.4	51.0	8.4
	1,200	E787630VGS122MP54C	0.875 × 2.125	P54	28.0	39.2	10.8
	1,800	E787630VGS182MP67C	0.875 × 2.625	P67	20.3	28.4	12.4
	2,200	E787630VGS222MP79C	0.875 × 3.125	P79	15.8	22.1	13.2
	560	E787630VGS561MQ29C	1.000 × 1.125	Q29	53.1	74.2	6.6
	1,000	E787630VGS102MQ35C	1.000 × 1.375	Q35	41.0	57.4	8.2
	1,200	E787630VGS122MQ41C	1.000 × 1.625	Q41	28.8	40.6	9.8
	1,800	E787630VGS182MQ54C	1.000 × 2.125	Q54	22.4	31.4	12.6
	2,700	E787630VGS272MQ67C	1.000 × 2.625	Q67	17.9	25.1	14.4
	3,300	E787630VGS332MQ79C	1.000 × 3.125	Q79	14.0	19.6	15.4
	3,900	E787630VGS392MQ92C	1.000 × 3.625	Q92	11.8	16.8	18.0
80 Volts 100 Volts Surge	180	E787800VGS181MT29C	0.750 × 1.125	T29	117.0	161.7	4.0
	270	E787800VGS271MT35C	0.750 × 1.375	T35	98.2	135.3	4.8
	390	E787800VGS391MT41C	0.750 × 1.625	T41	78.0	107.8	5.7
	560	E787800VGS561MT54C	0.750 × 2.125	T54	57.8	80.1	7.4
	820	E787800VGS821MT67C	0.750 × 2.625	T67	35.9	49.7	8.5
	1,000	E787800VGS102MT79C	0.750 × 3.125	T79	27.8	38.5	9.1
	270	E787800VGS271MP29C	0.875 × 1.125	P29	77.0	106.3	5.5
	470	E787800VGS471MP35C	0.875 × 1.375	P35	59.0	81.2	6.7
	560	E787800VGS561MP41C	0.875 × 1.625	P41	40.6	56.1	8.0
	820	E787800VGS821MP54C	0.875 × 2.125	P54	31.0	43.1	10.2
	1,200	E787800VGS122MP67C	0.875 × 2.625	P67	22.5	31.2	11.7
	1,500	E787800VGS152MP79C	0.875 × 3.125	P79	17.4	24.3	12.5
	390	E787800VGS391MQ29C	1.000 × 1.125	Q29	59.3	81.6	6.2
	680	E787800VGS681MQ35C	1.000 × 1.375	Q35	45.6	63.1	7.7
	820	E787800VGS821MQ41C	1.000 × 1.625	Q41	32.1	44.7	9.3
	1,200	E787800VGS122MQ54C	1.000 × 2.125	Q54	25.0	34.5	11.9
	1,800	E787800VGS182MQ67C	1.000 × 2.625	Q67	20.0	27.6	13.6
	2,200	E787800VGS222MQ79C	1.000 × 3.125	Q79	15.6	21.6	14.6
	2,700	E787800VGS272MQ92C	1.000 × 3.625	Q92	13.2	18.5	17.0

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

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