

T495 Surge Robust Commercial Off-The-Shelf (COTS), Low ESR MnO₂ DLA Drawing 95158

Overview

The low ESR, surge-robust commercial-off-the-shelf (COTS) T495 COTS is designed for demanding applications that require high surge current and high ripple current capability. This T495 is approved for DLA Drawing 95158, incorporating an intensive testing and screening protocol that is customizable depending on specific customer requirements. This series offer several advantages such as

low ESR, high ripple current capability, excellent capacitance stability, and improved resistance to high in-rush currents. These benefits are achieved through a combination of proprietary design, materials, and process parameters, as well as high-stress, low impedance electrical conditioning performed prior to screening.

Benefits

- Approved for DLA Drawing 95158
- Meets or exceeds EIA standard 535BAAC
- Taped and reeled per EIA 481
- High surge current capability
- Optional gold-plated terminations
- High ripple current capability
- 100% surge current test
- 100% steady-state accelerated aging
- Capacitance values of 4.7 to 220 μ F
- Tolerances of $\pm 10\%$ and $\pm 20\%$
- Voltage rating of 6 – 50 VDC
- Operating temperature range of -55°C to $+125^{\circ}\text{C}$



Applications

Typical applications include decoupling and filtering in defense applications, such as DC/DC converters, portable electronics, telecommunications, and control units requiring high ripple current capability.

K-SIM

For a detailed analysis of specific part numbers, please visit ksim.kemet.com to access KEMET's K-SIM software. KEMET K-SIM is designed to simulate behavior of components with respect to frequency, ambient temperature, and DC bias levels.

Ordering Information

T	495	X	107	M	010	A	H	4095	
Capacitor Class	Series	Case Size	Capacitance Code (pF)	Capacitance Tolerance	Rated Voltage (VDC)	Failure Rate/Design	Termination Finish	Customer Specification	Packaging (C-Spec)
T = Tantalum	Surge robust low ESR	C D X	First two digits represent significant figures. Third digit specifies number of zeros.	K = ±10% M = ±20%	006 = 6.3 010 = 10 016 = 16 020 = 20 025 = 25 035 = 35 050 = 50	A = N/A	H = Standard solder-coated (SnPb 5% Pb minimum) B = Gold-plated N = Non-magnetic 100% tin (Sn) M = Non-magnetic (SnPb)	Tested to meet the Established Reliability	Blank = 7" reel 7280 = 13" reel 7610 = Bulk bag 7640 = Bulk plastic box WAFL = Waffle pack

Ordering Information – DLA Drawing 95158

95158-	07	M	H
Drawing Number	Dash Number	Capacitance Tolerance	Termination Finish
Capacitor, Fixed, Tantalum Chip, Low ESR	See Part Number List	K = ±10% M = ±20%	H = Solder plated B = Gold-plated

Performance Characteristics

Item	Performance Characteristics
Operating Temperature	-55°C to 125°C
Rated Capacitance Range	4.7 – 220 µF at 120 Hz/25° C
Capacitance Tolerance	K tolerance (10%), M tolerance (20%)
Rated Voltage Range	6 – 50 V
DF (120 Hz)	Refer to Part Number Electrical Specification Table
ESR (100 kHz)	Refer to Part Number Electrical Specification Table
Leakage Current	Refer to Part Number Electrical Specification Table

Qualification

Test	Condition	Characteristics				
Endurance	85°C at rated voltage, 2,000 hours 125°C at 2/3 rated voltage, 2,000 hours	Δ C/C	Within ±10% of initial value			
		DF	Within initial limits			
		DCL	Within 1.25 x initial limit			
		ESR	Within initial limits			
Moisture Resistance	65°C to -10°C, 100% RH, 20 cycles, no load	Δ C/C	Within +/-15% of initial value			
		DF	Within 150 x initial limit			
		DCL	Within 200 x initial limit			
Thermal Shock	MIL-STD-202, Method 107, Condition B, mounted, -55°C to 125°C, 1,000 cycles	Δ C/C	Within ±5% of initial value			
		DF	Within initial limits			
		DCL	Within 1.25 x initial limit			
		ESR	Within initial limits			
Temperature Stability	Extreme temperature exposure at a succession of continuous steps at +25°C, -55°C, +25°C, +85°C, +125°C, +25°C	+25°C	-55°C	+85°C	+125°C	
		Δ C/C	IL*	±10%	±10%	±20%
		DF	IL	IL	1.5 x IL	1.5 x IL
Resistance to Solder Heat	MIL-STD-202, Method 210, 1 cycle	DCL	10 x IL			
		Δ C/C	Within ±5% of initial value			
		DF	Within initial limits			
Surge Voltage	25°C and 85°C, 1.32 x rated voltage 1,000 cycles (125°C, 1.2 x rated voltage)	DCL	Within initial limits			
		ESR	Within initial limits			
		Δ C/C	Within ±5% of initial value			
		DF	Within initial limits			
Resistance to Solvents	MIL-STD-202, Method 215, Aqueous wash chemical or equivalent	DCL	Within initial limits			
		DF	Within initial limits			
		Δ C/C	Within ±10 of initial value			
Mechanical Shock/ Vibration	MIL-STD-202, Method 213, Condition I, 100 G peak MIL-STD-202, Method 204, Condition D, 10 Hz to 2,000 Hz, 20 G peak	DCL	Within initial limits			
		DF	Within initial limits			
		Δ C/C	Within ±10% of initial value			

*IL = Initial limit

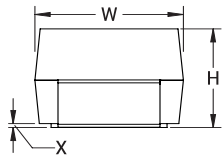
Certification

DLA Drawing 95158

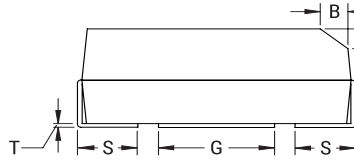
Dimensions – Millimeters (Inches)

Metric will govern

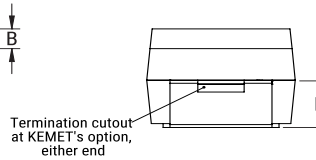
CATHODE (-) END VIEW



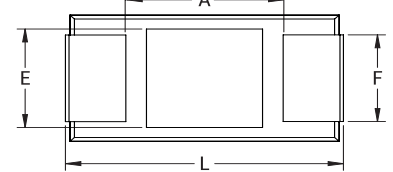
SIDE VIEW



ANODE (+) END VIEW



BOTTOM VIEW



Case Code	Component											
	L	W	H	K ±0.20 ±(.008) (Ref)	F ±0.1 ±(.004) (Ref)	S ±0.3 ±(.012) (Ref)	B ±0.15 ±(.006) (Ref)	X ±0.10 ±(.004) (Ref)	T (Ref)	A (Min)	G (Ref)	E (Ref)
C	6.0±0.3 (0.236±0.012)	3.2±0.3 (0.126±0.012)	2.5±0.3 (0.098±0.012)	1.4 (0.055)	2.2 (0.087)	1.3 (0.051)	0.5 (0.020)	0.10 (0.004)	0.13 (0.005)	3.1 (0.122)	2.8 (0.110)	2.4 (0.094)
D	7.3±0.3 (0.287±0.012)	4.3±0.3 (0.169±0.012)	2.8±0.3 (0.110±0.012)	1.5 (0.059)	2.4 (0.094)	1.3 (0.051)	0.5 (0.020)	0.10 (0.004)	0.13 (0.005)	3.8 (0.150)	3.5 (0.138)	3.5 (0.138)
X	7.3±0.3 (0.287±0.012)	4.3±0.3 (0.169±0.012)	4.0±0.3 (0.157±0.012)	2.3 (0.091)	2.4 (0.094)	1.3 (0.051)	0.5 (0.020)	0.10 (0.004)	0.13 (0.005)	3.8 (0.150)	3.5 (0.138)	3.5 (0.138)

Weight

Case Size	Typical Weight (mg)
C/6032	224.48
D/7343	446.84
X/7343	652.04

These weights are provided as reference. If exact weights are needed, please contact your KEMET Sales Representative

Table 1 – Ratings & Part Number Reference

Rated Voltage	Rated Cap	Case Code/ Case Size	KEMET Part Number	DLA (DSCC) 95158/1	DC Leakage	DF	ESR	Maximum Allowable Ripple Current			Maximum Operating Temp	MSL
								mA @ +25°C 100 kHz	mA @ +85°C 100 kHz	mA @ +125°C 100 kHz		
VDC @ 85°C	µF	KEMET/EIA	(See below for part options)	Drawing Number	µA +25°C Max/5 Min	% @ +25°C 120 Hz Max	mΩ @ 25°C 100 kHz Max	mA @ +25°C 100 kHz	mA @ +85°C 100 kHz	mA @ +125°C 100 kHz	°C	Reflow Temp ≤ 260°C
6.3	68	D/7343-31	T495D686(1)006A(2)4095	95158-01(1)(2)	3.3	4.0	175	926	833	370	125	1
6.3	150	X/7343-43	T495X157(1)006A(2)4095	95158-02(1)(2)	7.2	6.0	125	1149	1034	460	125	1
6.3	220	X/7343-43	T495X227(1)006A(2)4095	95158-03(1)(2)	13.2	8.0	100	1285	1157	514	125	1
6.3	220	D/7343-31	T495D227(1)006A(2)4095	95158-25(1)(2)	13.2	8.0	100	1225	1103	490	125	1
10	47	D/7343-31	T495D476(1)010A(2)4095	95158-04(1)(2)	3.8	4.0	200	866	779	346	125	1
10	68	X/7343-43	T495X686(1)010A(2)4095	95158-05(1)(2)	5.4	4.0	150	1049	944	420	125	1
10	100	D/7343-31	T495D107(1)010A(2)4095	95158-06(1)(2)	10.0	8.0	100	1225	1103	490	125	1
10	100	X/7343-43	T495X107(1)010A(2)4095	95158-07(1)(2)	8.0	6.0	100	1285	1157	514	125	1
10	150	X/7343-43	T495X157(1)010A(2)4095	95158-08(1)(2)	15.0	8.0	100	1285	1157	514	125	1
10	150	D/7343-31	T495D157(1)010A(2)4095	95158-26(1)(2)	15.0	8.0	100	1225	1103	490	125	1
10	220	X/7343-43	T495X227(1)010A(2)4095	95158-28(1)(2)	15.0	8.0	100	1285	1157	514	125	1
16	33	D/7343-31	T495D336(1)016A(2)4095	95158-09(1)(2)	4.2	4.0	250	775	698	310	125	1
16	47	D/7343-31	T495D476(1)016A(2)4095	95158-10(1)(2)	7.5	6.0	200	866	779	346	125	1
16	100	X/7343-43	T495X107(1)016A(2)4095	95158-11(1)(2)	16.0	8.0	125	1149	1034	460	125	1
20	15	D/7343-31	T495D156(1)020A(2)4095	95158-12(1)(2)	2.4	4.0	275	739	665	296	125	1
20	22	D/7343-31	T495D226(1)020A(2)4095	95158-13(1)(2)	3.5	4.0	275	739	665	296	125	1
20	47	X/7343-43	T495X476(1)020A(2)4095	95158-14(1)(2)	7.5	4.0	150	1049	944	420	125	1
20	68	X/7343-43	T495X686(1)020A(2)4095	95158-15(1)(2)	13.6	6.0	150	1049	944	420	125	1
25	15	D/7343-31	T495D156(1)025A(2)4095	95158-16(1)(2)	3.8	6.0	275	739	665	296	125	1
25	15	X/7343-43	T495X156(1)025A(2)4095	95158-17(1)(2)	3.0	4.0	200	908	817	363	125	1
25	22	X/7343-43	T495X226(1)025A(2)4095	95158-18(1)(2)	4.4	4.0	225	856	770	342	125	1
25	33	X/7343-43	T495X336(1)025A(2)4095	95158-19(1)(2)	6.6	4.0	175	971	874	388	125	1
35	4.7	C/6032-28	T495C475(1)035A(2)4095	95158-29(1)(2)	1.7	6.0	600	428	385	171	125	1
35	6.8	X/7343-43	T495X685(1)035A(2)4095	95158-20(1)(2)	1.9	4.0	300	742	668	297	125	1
35	10	D/7343-31	T495D106(1)035A(2)4095	95158-27(1)(2)	3.5	4.0	300	707	636	283	125	1
35	10	X/7343-43	T495X106(1)035A(2)4095	95158-21(1)(2)	2.8	4.0	250	812	731	325	125	1
35	15	X/7343-43	T495X156(1)035A(2)4095	95158-22(1)(2)	5.3	6.0	225	856	770	342	125	1
35	22	X/7343-43	T495X226(1)035A(2)4095	95158-23(1)(2)	7.7	6.0	300	742	668	297	125	1
50	4.7	X/7343-43	T495X475(1)050A(2)4095	95158-24(1)(2)	1.9	4.0	300	742	668	297	125	1
VDC @ 85°C	µF	KEMET/EIA	(See below for part options)	Drawing Number	µA +25°C Max/5 Min	% @ +25°C 120 Hz Max	mΩ @ 25°C 100 kHz Max	mA @ +25°C 100 kHz	mA @ +85°C 100 kHz	mA @ +125°C 100 kHz	°C	Reflow Temp ≤ 260°C
Rated Voltage	Rated Cap	Case Code/ Case Size	KEMET Part Number	DLA (DSCC) 95158/1	DC Leakage	DF	ESR	Maximum Allowable Ripple Current			Maximum Operating Temp	MSL

(1) To complete KEMET part number, insert M for ±20% or K for ±10%. Designates Capacitance tolerance.

(2) To complete KEMET part number, insert B = Gold Plated, H = Standard Solder coated (SnPb 5% Pb minimum),

N = Non-Magnetic 100% Tin (Sn) or M = Non-Magnetic (SnPb). Designates Termination Finish.

Refer to Ordering Information for additional detail.