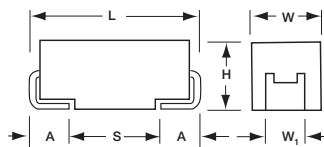


TCD SERIES

DLA 04051 & COTS-Plus



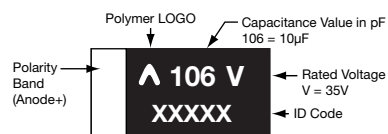
The TCD family is a DLA 04051 / COTS-Plus conductive polymer series designed for use in demanding applications requiring very low ESR with stable, high frequency CAP retention and longer life performance. The series exhibits improved basic reliability of 0.5%/1000hrs at 85°C, and capacitors are designed to withstand biased humidity testing at 85°C/85% R.H. for at least 500 hours, Capacitors are rated for operation up to 125°C and additional surge current screening at -55°C and 85°C optional upon request.

FEATURES

- Statistical electrical screening
- Surge testing level options
- Humidity 85°C/85%R.H., Vr, 500 hours
- -55°C to 125°C operation temperature
- DCL 0.1 CV
- Testing Option A, B
- Life Test at 125°C for 2000 hours
- Vibration
- Surge Voltage & RTSH

MARKING

B, D CASE



CASE DIMENSIONS: millimeters (inches)

Code	EIA Code	EIA Metric	L±0.20 (0.008)	W+0.20 (0.008) -0.10 (0.004)	H+0.20 (0.008) -0.10 (0.004)	W1±0.20 (0.008)	A+0.30 (0.012) -0.20 (0.008)	S Min.
B	1210	3528-21	3.50(0.138)	2.80 (0.110)	1.90 (0.075)	2.20 (0.087)	0.80 (0.031)	1.40 (0.055)
D	2917	7343-31	7.30 (0.287)	4.30 (0.169)	2.90 (0.114)	2.40 (0.094)	1.30 (0.051)	4.40 (0.173)

CAPACITANCE AND RATED VOLTAGE, LETTER DENOTES CASE SIZE

Capacitance		Rated Voltage DC (Vr) to 105°C						
µF	Code	4V	6.3V	10V	16V	20V	25V	50V
10	106							D (100, 125)
15	156						D (75, 100)	
22	226			B (80)		D (75)		
33	336		B (80)	B (80)		D (75)		
47	476		B (80)		D (65)	D (75)		
68	686		B (80)		D (75)			
100	107	B (80)		D (55)				
150	157			D (55)				
330	337		D (40)					
470	477	D (40)						

Released Ratings (ESR ratings in mOhms in parentheses)

Note: Voltage ratings are minimum values. KYOCERA AVX reserves the right to supply higher voltage ratings in the same case size to the same reliability standards

TCD SERIES

DLA 04051 & COTS-Plus

DLN PN INFORMATION:

04051	-XXX	*	#	+	
Drawing Number	Dash Number See Rating Table	Capacitance Tolerance K = ±10% M = ±20%	Additional Testing option* Z = No Additional Testing A/B = See Features Above	Surge current option Blank = 4 cycles, +25°C Before Aging A = 10 cycles, +25°C B = 10 cycles, -55°C & +85°C	Not RoHS Compliant

*Note: Contact factory regarding availability of additional testing options

HOW TO ORDER KAVX COTS-PLUS PART NUMBER:

TCD	D	107	*	010	C	□	#	Z	0	^	++
Type	Case Size See table above	Capacitance Code pF code: 1st two digits represent significant figures 3rd digit represents multiplier (number of zeros to follow)	Tolerance K = ±10% M = ±20%	Rated DC Voltage 004=4Vdc 006=6.3Vdc 010=10Vdc 016=16Vdc 020=20Vdc 025=25Vdc 050=50Vdc	ESR C = Std ESR L = Low ESR	Packaging B = Bulk R=7" T&R S=13" T&R W=Waffle	Inspection Level S=Std. Conformance L=Group A D=DSCC	Reliability Grade Z = Non-ER	Qualification Level 0 = N/A	Termination Finish H=Solder Plated 7 = 100% Tin	Surge Test Option 00 = Standard 23=10 Cycles, +25°C 24=10 Cycles, -55°C & +85°C

For RoHS compliant products, please select correct termination style.

TECHNICAL SPECIFICATIONS

Technical Data:	Unless otherwise specified, all technical data relate to an ambient temperature of 25°C							
Capacitance Range:	10 µF to 470 µF							
Capacitance Tolerance:	±10%, ±20%							
Rated Voltage (VR) ≤ 105°C	4	6.3	10	16	20	25	50	
Category Voltage (Vc) ≤ 125°C	2.7	4.2	6.6	10.6	13.4	16.7	33.5	
Surge Voltage (Vs) ≤ 105°C	5.3	8.3	13.2	21.1	26.4	33.0	66.0	
Temperature Range:	-55°C to +125°C							

TCD SERIES

DLA 04051 & COTS-Plus

RATING & PART NUMBER REFERENCE			Parametric Specifications by Rating per MIL-PRF-55365									Typical RMS Ripple Data by Rating				
			Cap @ 120Hz	DC Rated Voltage	ESR @ 100kHz	DCL max			DF Max			Power Dissipation	-55°C to 105°C Ripple Current	125°C Ripple Current	-55°C to 105°C Ripple Voltage	125°C Ripple Voltage
						+25°C	+85°C	+125°C	+25°C	+85°C	+125°C					
04051 Dash No	KAVX COTS-Plus P/N	Case	µF @ 25°C	V @ +105°C	Ohms @ +25°C	(µA)	(µA)	(µA)	(%)	(%)	(%)	W	A (100kHz)	A (100kHz)	V (100kHz)	V (100kHz)
012	TCDB107*004C□#Z0^++	B	100	4	0.08	40	400	400	8	9.6	12	0.125	1.0	0.3	0.08	0.024
016	TCDD477*004C□#Z0^++	D	470	4	0.04	188	1880	1880	10	12	15	0.225	1.9	0.6	0.076	0.024
017	TCDB336*006C□#Z0^++	B	33	6.3	0.08	21	210	210	8	9.6	12	0.125	1.0	0.3	0.08	0.024
019	TCDB476*006C□#Z0^++	B	47	6.3	0.08	30	300	300	8	9.6	12	0.125	1.0	0.3	0.08	0.024
020	TCDB686*006C□#Z0^++	B	68	6.3	0.08	43	430	430	8	9.6	12	0.125	1.0	0.3	0.08	0.024
024	TCDD337*006C□#Z0^++	D	330	6.3	0.04	208	2080	2080	10	12	15	0.225	1.9	0.6	0.076	0.024
025	TCDB226*010C□#Z0^++	B	22	10	0.08	22	220	220	8	9.6	12	0.125	1.0	0.3	0.08	0.024
027	TCDB336*010C□#Z0^++	B	33	10	0.08	33	330	330	8	9.6	12	0.125	1.0	0.3	0.08	0.024
029	TCDD107*010C□#Z0^++	D	100	10	0.055	100	1000	1000	10	12	15	0.225	1.7	0.5	0.094	0.028
031	TCDD157*010C□#Z0^++	D	150	10	0.055	150	1500	1500	10	12	15	0.225	1.7	0.5	0.094	0.028
034	TCDD476*016C□#Z0^++	D	47	16	0.065	76	760	760	10	12	15	0.225	1.5	0.5	0.098	0.033
035	TCDB686*016C□#Z0^++	D	68	16	0.075	109	1090	1090	10	12	15	0.225	1.4	0.5	0.105	0.038
037	TCDD226*020C□#Z0^++	D	22	20	0.075	44	440	440	10	12	15	0.225	1.4	0.5	0.105	0.038
038	TCDB336*020C□#Z0^++	D	33	20	0.075	66	660	660	10	12	15	0.225	1.4	0.5	0.105	0.038
039	TCDD476*020C□#Z0^++	D	47	20	0.075	94	940	940	10	12	15	0.225	1.4	0.5	0.105	0.038
040	TCDD156*025L□#Z0^++	D	15	25	0.075	38	380	380	10	12	15	0.225	1.4	0.5	0.105	0.038
041	TCDD156*025C□#Z0^++	D	15	25	0.1	38	380	380	10	12	15	0.225	1.2	0.4	0.12	0.04
046	TCDD106*050L□#Z0^++	D	10	50	0.1	50	500	500	10	12	15	0.225	1.2	0.4	0.12	0.04
047	TCDD106*050C□#Z0^++	D	10	50	0.125	50	500	500	10	12	15	0.225	1.1	0.4	0.138	0.05

All technical data relates to an ambient temperature of +25°C. Capacitance and DF are measured at 120Hz, 0.5V RMS with a maximum DC bias of 2.2 volts. DCL is measured at rated voltage after 5 minutes.

NOTE: KYOCERA AVX reserves the right to supply a higher voltage rating or tighter tolerance part in the same case size, to the same reliability standards.

RECOMMENDED DERATING FACTOR

Voltage and temperature derating as percentage of Vr.

Rated voltage	Operating Temperature		
	≤85°C	105°C	125°C
≤10V	90%	90%	60%
≥16V	80%	80%	54%

