

# Tantalum Chip - Low ESR

## Series: TCLE



Epoxy resin molding chip

Ultra low ESR

### FEATURES

Suitable for surface mounting.

Precise dimensions allow high density packaging. Symmetrical construction of positive and negative terminals provides "Self Alignment".

Soldering: 260°C for 10 second by re-flow or flow soldering.

This type is suitable for medium to high frequency circuit as high speed PC, switching regulators, DC/DC convertor for high quality voltage source, etc.

### CAUTIONS

This capacitor is polarized, do not apply reverse voltage.

The sum of peak value of AC and DC voltage should not exceed the rated voltage.

This catalog is designed for providing general information. Please inquire of our Sales Department to confirm specifications prior to use.

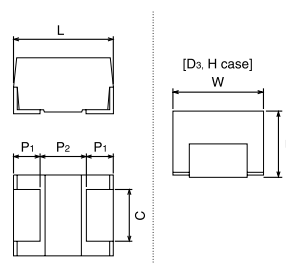
### CHARACTERISTICS

Failure rate level	1%/1000h
Operating temperature range	-55~+85°C to 125°C with voltage derating
Rated voltage	4-6.3-10-16-20-25-35VDC
Capacitance range	4.7-330μF
Capacitance tolerance	±10%, ±20%

### DIMENSIONS

Case code	EIA code	L±0.2	W±0.2	T±0.2	P <sub>1</sub> ±0.2	P <sub>2</sub> min.	C±0.1
C	6032	6.0	3.2	2.5	1.3	3.0	2.2
D	7343	7.3	4.4	2.8	1.3	4.0	2.4
E	7343H	7.3	4.4	4.1	1.3	4.0	2.4

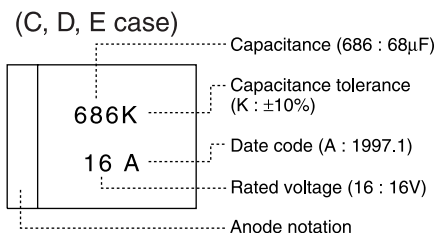
D Case is in conformity with EIA-535BAAC.



### STANDARD RATINGS

R.V.	4	6.3	10	16	20	25	35
Cap.							
4.7							D
6.8							D
10							D
15						D	E
22					D	D,E	E
33				D	D,E	E	
47			D	D,E			
68		D	D,E		E		
100	D	D	D,E	E		C	
150	D	D	D,E				
220	D	D,E	E				
330	D	E					

### MARKING



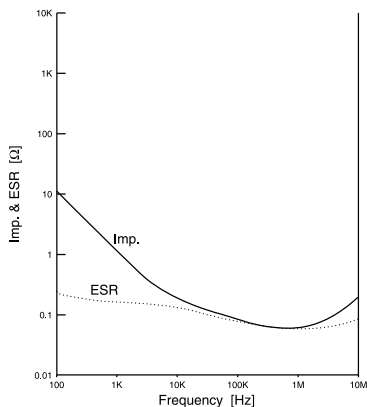
## RATINGS AND CATALOG NUMBERS

Rated/Surge Voltage	Catalog number	cap. (µF)	case code	Ripple Current / 100kHz(mArms)			Max DC Lct. (µA)			Max Dissipation factor				Max ESR(Ω) 100kHz
				25°C	85°C	125°C	25°C	85°C	125°C	-55°C	25°C	85°C	125°C	
4VDC/5VDC	TCLE107□04DT	100	D	866	775	548	4.0	40	50	0.10	0.08	0.08	0.08	0.200
	TCLE157□04DT	150	D	1225	1095	775	6.0	60	75	0.10	0.08	0.08	0.08	0.100
	TCLE227□04DT	220	D	1225	1095	775	8.8	88	110	0.15	0.08	0.08	0.10	0.100
	TCLE337□04DT	330	D	1225	1095	775	13	132	165	0.18	0.10	0.10	0.12	0.100
6.3VDC/8VDC	TCLE686□06DT	68	D	866	775	548	4.3	43	54	0.08	0.06	0.06	0.06	0.200
	TCLE107□06DT	100	D	1225	1095	775	6.3	63	79	0.10	0.08	0.08	0.08	0.100
	TCLE157□06DT	150	D	1225	1095	775	9.5	95	118	0.15	0.08	0.08	0.10	0.100
	TCLE227□06DT	220	D	1225	1095	775	14	139	173	0.15	0.08	0.08	0.10	0.100
	TCLE227□06ET	220	E	1285	1149	812	14	139	173	0.15	0.08	0.08	0.10	0.100
	TCLE337□06ET	330	E	1285	1149	812	21	208	260	0.15	0.08	0.08	0.10	0.100
10VDC/13VDC	TCLE476□10DT	47	D	866	775	548	4.7	47	59	0.08	0.06	0.06	0.06	0.200
	TCLE686□10DT	68	D	926	828	586	6.8	68	85	0.08	0.06	0.06	0.08	0.175
	TCLE686□10ET	68	E	1049	938	663	6.8	68	85	0.08	0.06	0.06	0.06	0.150
	TCLE107□10DT	100	D	1225	1095	775	10	100	130	0.15	0.08	0.08	0.10	0.100
	TCLE107□10ET	100	E	1285	1149	812	10	100	125	0.10	0.08	0.08	0.08	0.100
	TCLE157□10DT	100	D	1225	1095	775	15	150	188	0.15	0.08	0.08	0.10	0.100
	TCLE157□10ET	150	E	1285	1149	812	15	150	188	0.15	0.08	0.08	0.10	0.100
	TCLE227□10ET	220	E	1285	1149	812	22	220	275	0.15	0.08	0.08	0.10	0.100
16VDC/20VDC	TCLE336□16DT	33	D	816	730	516	5.3	53	66	0.08	0.06	0.06	0.06	0.225
	TCLE476□16DT	47	D	1000	894	632	7.5	75	94	0.08	0.06	0.06	0.08	0.150
	TCLE476□16ET	47	E	1049	938	663	7.5	75	94	0.08	0.06	0.06	0.06	0.150
	TCLE107□16ET	100	E	1285	1149	812	16	160	200	0.15	0.08	0.08	0.10	0.100
20VDC/26VDC	TCLE226□20DT	22	D	816	730	516	4.4	44	55	0.08	0.06	0.06	0.06	0.225
	TCLE336□20DT	33	D	866	775	548	6.6	66	83	0.08	0.06	0.06	0.08	0.200
	TCLE336□20ET	33	E	908	812	574	6.6	66	83	0.08	0.06	0.06	0.06	0.200
	TCLE686□20ET	68	E	1049	938	663	14	136	170	0.08	0.06	0.06	0.08	0.150
25VDC/32VDC	TCLE156□25DT	15	D	739	661	467	3.8	38	47	0.08	0.06	0.06	0.06	0.275
	TCLE226□25DT	22	D	866	775	548	5.5	55	69	0.08	0.06	0.06	0.08	0.200
	TCLE226□25ET	22	E	908	812	574	5.5	55	69	0.08	0.06	0.06	0.06	0.200
	TCLE336□25ET	33	E	856	766	542	8.3	83	103	0.08	0.06	0.06	0.06	0.225
35VDC/44VDC	TCLE475□35DT	4.7	D	612	548	387	1.6	16	21	0.08	0.06	0.06	0.06	0.400
	TCLE685□35DT	6.8	D	655	586	414	2.4	24	30	0.08	0.06	0.06	0.06	0.350
	TCLE106□35DT	10	D	707	632	447	3.5	35	44	0.08	0.06	0.06	0.06	0.300
	TCLE156□35ET	15	E	856	766	542	5.3	55	66	0.08	0.06	0.06	0.06	0.225
	TCLE226□35ET	22	E	812	727	514	7.7	77	96	0.08	0.06	0.06	0.06	0.250

□ Capacitance tolerance code "K" (±10%) or "M" (±20%).  
 \*Please contact our Sales Department if you have requirements for lower ESR.

## FREQUENCY CHARACTERISTICS

E Case 10V 150µF



E Case 10V 220µF

