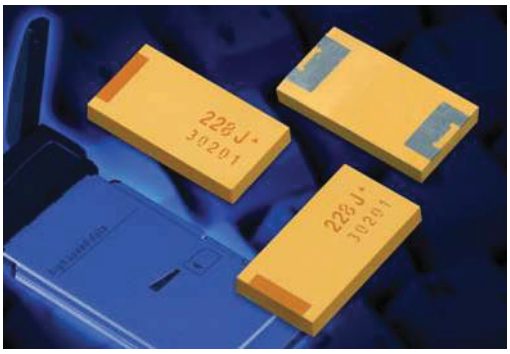
TLN PulseCap™ Series

High Capacitance Tantalum Solid Electrolytic Chip Capacitors
Undertab Series



FEATURES

- Large Case Size for Maximum Capacitance
- 3x Reflow 260°C Compatible
- 100% Surge Current Tested
- Low Profile Solution
- Consumer Applications
  (e.g. PCMCIA/USB Wireless Express Cards etc.)
- CV Range: 1000-3300µF / 4-10V
- 2 Case Sizes Available

APPLICATIONS

- Data Transfer Modems
- SSD Backup Circuits

LEAD-FREE
LEAD-FREE COMPATIBLE COMPONENT

RoHS COMPLIANT

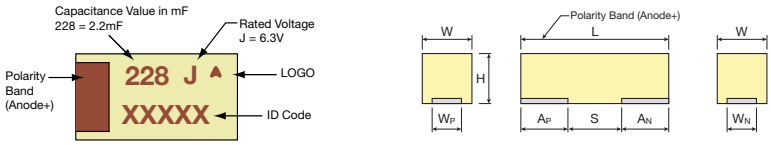
CASE DIMENSIONS:

millimeters (inches)

Code	EIA Code	EIA Metric	L±0.20 (0.008)	W+0.20 (0.008) -0.10 (0.004)	H max.	W_P±0.10 (0.004)	W_N±0.10 (0.004)	A_P±0.10 (0.004)	A_N±0.10 (0.004)	S Min.
4	2924	7361-20	7.30 (0.287)	6.10 (0.240)	2.00 (0.079)	4.75 (0.187)	4.75 (0.187)	2.00 (0.079)	3.20 (0.126)	2.10 (0.083)
6	5831	14878-20	14.80 (0.583)	7.80 (0.307)	2.00 (0.079)	5.50 (0.217)	5.50 (0.217)	2.45 (0.096)	2.45 (0.096)	9.90 (0.390)

MARKING

4, 6 CASE



HOW TO ORDER

TLN	6	228	M	006	R	0055
Type	**Case Size** See table above	**Capacitance Code** pF code: 1st two digits represent significant figures, 3rd digit represents multiplier	**Tolerance** M = ±20%	**Rated DC Voltage** 004 = 4Vdc 006 = 6.3Vdc 010 = 10Vdc	**Packaging** R = Pure Tin 7" Reel	**ESR in mΩ**

TECHNICAL SPECIFICATIONS

Technical Data:		All technical data relate to an ambient temperature of +25°C			
Capacitance Range:		1000 µF to 3300 µF			
Capacitance Tolerance:		±20%			
Leakage Current DCL:		0.01CV			
Rated Voltage (V_R)	-55°C ≤ +40°C:	4	6.3	10	
Category Voltage (V_C)	at 85°C:	2	3.2	5	
Category Voltage (V_C)	at 125°C:	0.8	1.3	2	
Temperature Range:		-55°C to +125°C with category voltage			
Reliability:		0.2% per 1000 hours at 85°C, 0.5xV_R with 0.1Ω/V series impedance with 60% confidence level			

CAPACITANCE AND RATED VOLTAGE RANGE (LETTER DENOTES CASE SIZE)

Capacitance		Voltage Rating DC (VR) to 85°C		
µF	Code	4V (G)	6.3V (J)	10V (A)
680	687			
1000	108			4(100)/6(55)
1500	158		4(100)	6(55)
2200	228		6(55)	
3300	338	6(55)		

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.

RATINGS & PART NUMBER REFERENCE

Part Number	Case Size	Capacitance (µF)	Rated Voltage (V)	Rated Temperature (°C)	Category Voltage (V)	Category Temperature (°C)	DCL Max. (µA)	ESR Max. @ 100kHz (mΩ)	100kHz RMS Current (mA)			MSL
									25°C	85°C	125°C	
4 Volt @ 40°C												
TLN6338M004#0055	6	3300	4	40	0.8	125	132	55	2045	1840	818	3
6.3 Volt @ 40°C												
TLN4158M006#0100	4	1500	6.3	40	1.3	125	90	100	1285	1156	514	3
TLN6228M006#0055	6	2200	6.3	40	1.3	125	132	55	2045	1840	818	3
10 Volt @ 40°C												
TLN4108M010#0100	4	1000	10	40	2	125	100	100	1285	1156	514	3
TLN6108M010#0055	6	1000	10	40	2	125	100	55	2045	1840	818	3
TLN6158M010#0055	6	1500	10	40	2	125	150	55	2045	1840	818	3

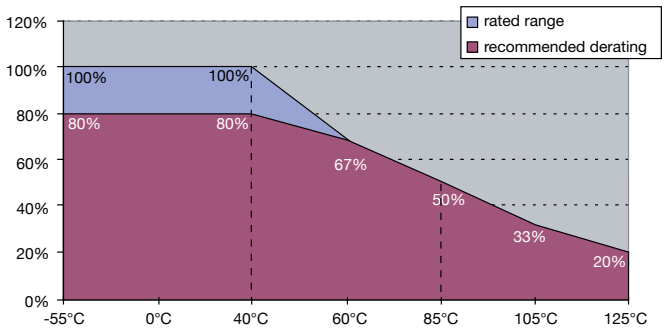
Moisture Sensitivity Level (MSL) is defined according to J-STD-020.
All technical data relates to an ambient temperature of +25°C. Capacitance and DF are measured at 120Hz, 0.5V RMS with a maximum DC bias of 2.2 volts.
DCL is measured at rated voltage after 5 minutes.
ESR allowed to move up to 1.25 times catalogue limit post mounting
DCL allowed to move up to 2.00 times catalogue limit post mounting
For typical weight and composition, see page 253.
NOTE: KYOCERA AVX reserves the right to supply higher voltage ratings or tighter tolerance part in the same case size, to the same reliability standards.

QUALIFICATION TABLE

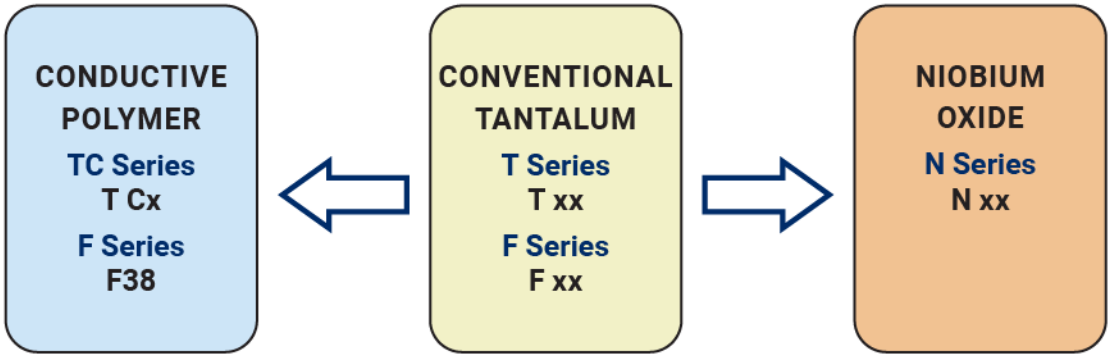
TEST	TLN PulseCap™ series (Temperature range -55°C to +125°C)		
	Condition	Characteristics	
Endurance	Apply rated voltage (Ur) at 40°C and / or category voltage (Uc) at 85°C for 2000 hours through a circuit impedance of ≤0.1Ω/V. Stabilize at room temperature for 1-2 hours before measuring.	Visual examination	no visible damage
		DCL	2 x initial limit
		ΔC/C	within +5/-30% of initial value
		ESR	1.25 x initial limit
Humidity	Store at 65°C and 90-95% relative humidity for 500 hours, with no applied voltage. Stabilize at room temperature and humidity for 1-2 hours before measuring.	Visual examination	no visible damage
		DCL	2 x initial limit
		ΔC/C	within ±10% of initial value
		ESR	1.25 x initial limit
Temperature Stability	Step 1: +20°C, 15 min Step 2: -55°C, 15 min Step 3: +20°C, 15 min Step 4: +85°C, 15 min Step 5: +125°C, 15 min Step 6: +20°C, 15 min		+20°C / -55°C / +20°C / +85°C / +125°C / +20°C
		DCL	2 x IL* / n/a / 2 x IL* / 20 x IL* / 25 x IL* / 2 x IL*
		ΔC/C	n/a / +5/-20% / ±10% / +20/-0% / +25/-0% / ±10%
		ESR	1.25xIL* / 2.5 x IL* / 1.25 x IL* / 1.25 x IL* / 1.25 x IL* / 1.25xIL*
Surge Voltage	Apply 1.3x rated voltage (Ur) at 40°Cfor 1000 cycles of duration 6 min (30 sec charge, 5 min 30 sec discharge) through a charge / discharge resistance of 1000Ω	Visual examination	no visible damage
		DCL	2 x initial limit
		ΔC/C	within ±5% of initial value
		ESR	1.25 x initial limit
Mechanical Shock	MIL-STD-202, Method 213, Condition C	Visual examination	no visible damage
		DCL	initial limit
		ΔC/C	within ±5% of initial value
		DF	initial limit
		ESR	initial limit
Vibration	MIL-STD-202, Method 204, Condition D	Visual examination	no visible damage
		DCL	initial limit
		ΔC/C	within ±5% of initial value
		DF	initial limit
		ESR	initial limit

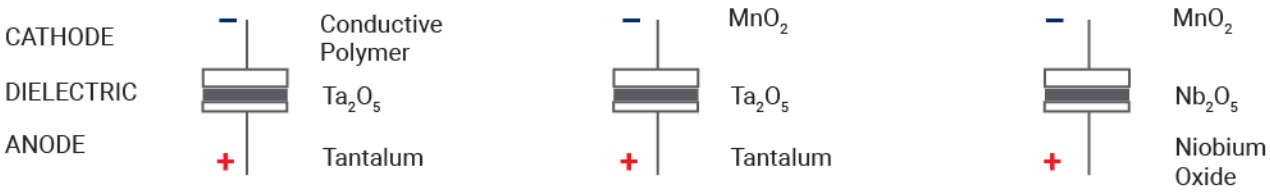
*Initial Limit

Voltage vs Temperature Rating

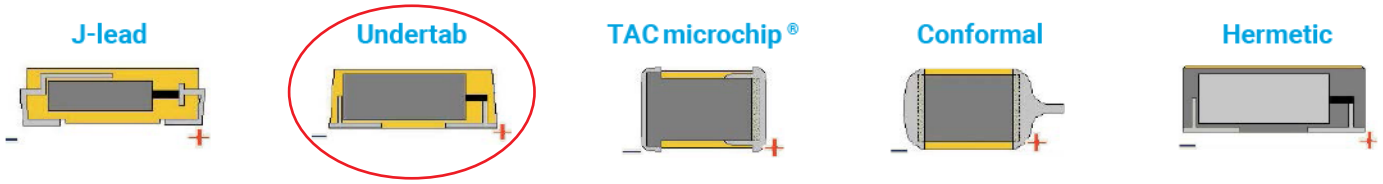


SOLID ELECTROLYTIC CAPACITOR ROADMAP





FIVE CAPACITOR CONSTRUCTION STYLES



SERIES LINE UP : CONVENTIONAL SMD MnO_2