

Specification of Conductive Polymer Tantalum Solid Electrolytic Capacitor

Part No.: PXTB006M227E035STU

SUPPLIER	
PREPARED	CHECKED

CUSTOMER	
APPROVAL	SIGNATURE

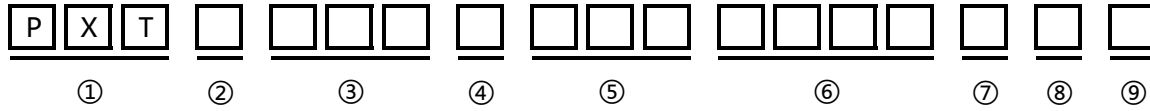
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1. Scope

These specifications are applied to conductive polymer tantalum solid capacitors for electronic equipment. Please contact us before using.

2. Part No.

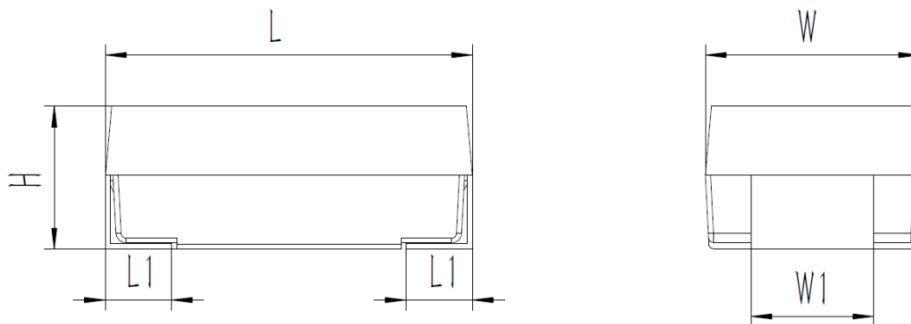


- ① Series : PXT series
- ② Dimensions : refer to 3.1
- ③ Rated voltage : refer to 3.2
- ④ Capacitance tolerance : refer to 3.3
- ⑤ Capacitance : refer to 3.4
- ⑥ ESR : refer to 3.5
- ⑦ Quantity of pellets : refer to 3.6
- ⑧ Termination finish : refer to 3.7
- ⑨ Special label : refer to 3.8

3. Characteristic

3.1 Dimensions (mm)

CASE CODE	L	W	H	L1	W1
B	3.5±0.3	2.8±0.3	1.9±0.3	0.8±0.2	2.2±0.2



3.2 Rated voltage

Code	Voltage
006	6.3V

3.3 Capacitance tolerance

Code	Tolerance
M	-20% ~ +20%

3.4 Capacitance

Code	Capacitance
227	220 μ F

3.5 ESR

Code	ESR
E035	0.035 Ω

3.6 Quantity of pellets

Code	Pellet
S	Single

3.7 Termination finish

Code	Lead Plating
T	Sn

3.8 Special label

Code	Definition
U	Universal

4. Part No. & packaging

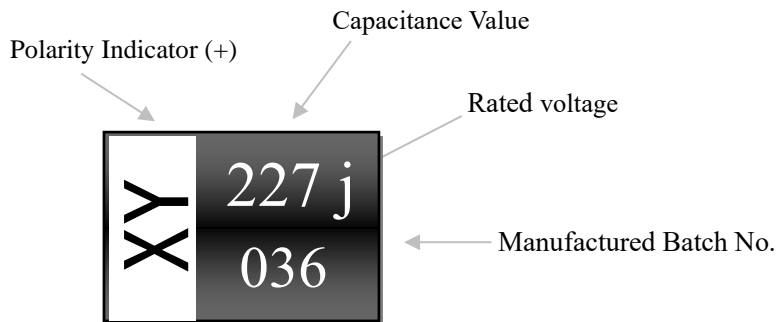
4.1 Part No. & specifications

Part Number	Case Size	Rated Temp. (°C)	Rated Voltage (V.DC)	Cap. (μF)	Cap Tol. (%)	ESR(mΩ) 100KHz/ +25°C	DF (%)	DCL (μA)	Ripple Current (mA _{rms}) 100KHz /+45°C	MSL (≤260°C Reflow)
PXTB006M2 27E035STU	B	85	6.3	220	±20	35	8	138.6	1400	3

4.2 Packaging information

Case Size	Specification	Minimum Packaging Quantity(pcs)
B	Tape & Reel	2000

5. Marking (Example)



Voltage code 1 digit:

Voltage (V)	2.5	4	6.3	8	10	16	25	35	50
Code	e	g	j	k	A	C	E	V	H

Manufacture date

Year 1 digit:

Year	2018	2019	2020	2021	2022	2023	2024	2025	2026
Code	8	9	0	1	2	3	4	5	6
Year	2027	2028	2029	2030	2031	2032	2033	2034	2035
Code	7	8	9	0	1	2	3	4	5

Weeks 2 digits:

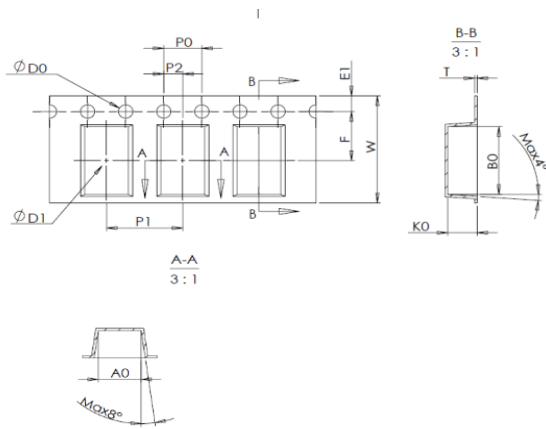
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6. Performance Characteristics

Item		Performance				Test Conditions
Operating Temperature		-55°C ~ 85°C				
Rated Voltage		6.3V				
Surge Voltage		1.15×Rated Voltage				
Capacitance		220 μF				Frequency: 120Hz Temp.: 25(±2)°C
Capacitance Tolerance		±20%				
Tanδ		≤8%				
DCL		≤138.6μA				rated voltage after 300s
ESR		≤35mohms				100KHz
Ripple Current		≤1400mArms				100KHz,45(±2)°C
		ΔC/C	tanδ	ESR	LC	
Surge Voltage		Within ±5% of the initial value	Within 1.5×IL	Within 1.5×IL	Within 3×IL	
Temperature Characteristics	+25°C	-	Within IL	Within IL	Within IL	
	-55°C	Within ±20% compare with +25°C	Within IL	Within IL	-	
	+105°C	Within ±30% compare with +25°C	Within 1.5×IL	-	Within 10×IL	
Endurance		Within ±20% of the initial value	Within 2×IL	-	Within 2×IL	1000Hrs @ 85°C & Vr
Humidity Resistance		Within +40%、-20% of the initial value	Within 1.5×IL	-	Within 3×IL	Temperature:60(±3)°C Humidit:90%~95%RH Time:500 Hrs

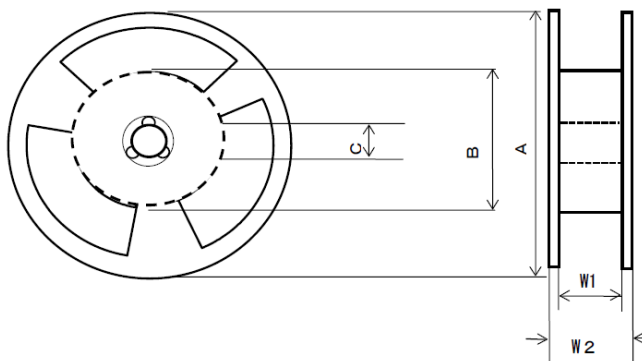
7. Tape & reel packaging information

7.1 Tape



Dimensions	B Size/mm
W	(+0.30,-0.10) 8.00
P ₁	±0.10 4.00
E ₁	±0.10 1.75
F	±0.10 3.50
D ₀	±0.10 1.50
P ₀	±0.10 4.00
P ₀₁₀	±0.10 40.00
P ₂	±0.10 2.00
A ₀	±0.10 3.20
B ₀	±0.10 3.83
K ₀	±0.10 2.17
T	±0.10 0.229

7.2 Reel



A	B	C	W1	W2
φ 330±2	φ 80±2	φ 13±0.2	13.5±0.5	17.5±1.0
φ 180 +0/-3	φ 60±2	φ 13±0.2	13.5±0.5	17.5±1.0
φ 180 +0/-3	φ 60±2	φ 13±0.2	9.0±0.5	11.4±1.0

(mm)

8 Application Guidelines

8.1 Measurement of Electrical performance at room temperature

8.1.1 Measurement of Capacitance (C) and Dissipation factor ($\tan\delta$)

Applied Voltage: DC voltage: $U_{DC}=2.2_{-1.0}^0 V$; Range of AC bias (effective value): $U_{AC}=1.0_{-0.5}^0 V$

Polarity: Please make sure the positive and negative terminations of capacitors are contacted correctly so as to avoid reading mistake.

8.1.2 Measurement of leakage current (I)

Charging: when charging at rated voltage, must be series a 1000Ω protective resistor. After 5 minutes charging, read a stable leakage current reading.

Polarity: it is FORBIDDEN to charge electrolytic capacitors reversely in leakage current measurements. The capacitor must be scraped once it is charged or contacted reversely, even if the electrical performance may still good.

Discharging: after the measurement, the capacitor should be discharged completely via a $1K\Omega$ resistor more than 5 seconds and shorted by a conductive wire more than 30 seconds.

8.1.3 ESR Measurement

Measurement frequency: 100KHz with AC bias (rms) $U_{AC}=1.0_{-0.5}^0 V$.

Note: ESR measurement is effected by measurement loop significantly, professional fixture is needed to measure the ESR correctly, and the instruments/meters should be calibrated before measurement.

8.2 Cautions for Circuit Designs

8.2.1 Reverse Voltage

Conductive polymer tantalum solid electrolytic capacitors are polarized, any reverse voltage is NOT allowed, also is NOT allowed to used in pure AC circuit either.

8.2.2 Applied Voltage

More than 90% failure modes of the tantalum capacitors are short circuit and/or leakage current parametric shift. It is more reliable to fully consider the applied rules in the circuit designs.

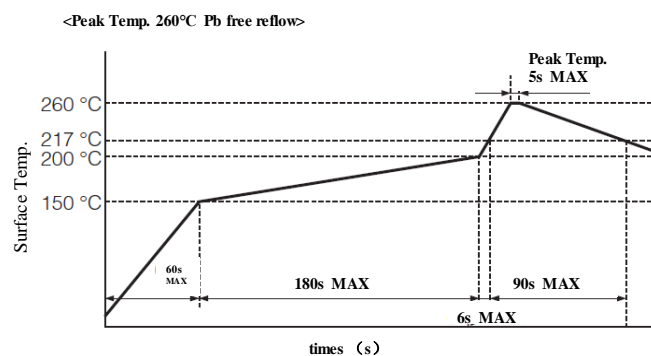
8.3 Soldering

8.3.1 Soldering and cleaning

When soldering with a soldering iron, the soldering iron power should be below 30W, the tip temperature of the soldering iron should be less than 350 °C, and the duration is less than 3 seconds. (Caution, please do NOT touch the capacitor body with a soldering iron tip or apply a excessive force to it.)

When using reflow or wave soldering, please refer to the recommended soldering profile.

The recommended soldering profile for PX-Cap conductive polymer tantalum capacitor is shown in below Figure



3. Please not use active and strong acidic flux in manual soldering or reflow soldering. The reliability may be deteriorated once flux penetrates and diffuses into parts resulted by incomplete rinse. Rinse-free flux is recommended. Isopropyl is recommended also, the time shall not exceed 5 minutes. Ultrasonic cleaning is not recommended. Please not to apply excessive force to the capacitor during insertion as well as after soldering. The excessive force may result in damage to electrode terminals and/or degradation of electrical performance.

8.3.2 Recommended soldering methods

(1) vapor phase reflow soldering; (2) infrared reflow soldering; (3) wave soldering; (4) hot-plate reflow soldering; (5) manual soldering.

8.4 Cautions in use

Please not measure DC resistance of the circuit with tantalum capacitor and capacitor itself with multimeter .Please cut off power supply once smelling or smoking; Please also not close to product if burning. Please replace by a new capacitor once any capacitor is subjected by excessive voltage or reverse voltage or mechanical/thermal stress.

8.5 Storage condition and MSL

Storage conditions: Capacitors should be stored in sealed package at room temperature (5 ~ 35 °C) (relative humidity below 75%), must not expose to sunshine or dust. If store capacitors in high temperature and humidity environment for long time, the solderability of terminations and electrical performance will be degraded. Term of warranty for this product is two years after packaging in a moisture-proof bag, the expired products shall be reinspected and confirmed before using.

MSL: According to 《IPC/JEDEC J-STD-020D.1Moisture/Reflow Sensitivity Classification for Non-hermetic Solid State Surface Mount Devices》 and 《IPC/JEDEC J-STD-033C moisture/reflow sensitive surface mount devices operation, packaging, transportation and use》, the PX-cap conductive polymer tantalum capacitor meets moisture sensitivity level (MSL) 3. The PX-Cap conductive polymer tantalum capacitor has been baked out and vacuum packed with a desiccant and humidity indicator before shipping. Please check package integrity and desiccant color changing before using; if package are damaged or desiccant color changes from blue to pink ,please pre-dry parts for 168h under 40 °C and humidity $\leq 10\%$ before mounted.

Once the package is opened, the cumulative exposure time under the condition of humidity $\leq 60\%$ should not exceed 1 week. Otherwise, it should be packed in a vacuum bag again or put in a drying cabinet with humidity $\leq 10\%$,The storage_life should not exceed one year. If the storage life is exceeded, please pre-dry parts before mounted.