

Notice for TAIYO YUDEN products

Please read this notice before using the TAIYO YUDEN products.

REMINDERS

- Product information in this catalog is as of October 2013. All of the contents specified herein are subject to change without notice due to technical improvements, etc. Therefore, please check for the latest information carefully before practical application or usage of the Products.

Please note that TAIYO YUDEN CO., LTD. shall not be responsible for any defects in products or equipment incorporating such products, which are caused under the conditions other than those specified in this catalog or individual specification.

- Please contact TAIYO YUDEN CO., LTD. for further details of product specifications as the individual specification is available.

- Please conduct validation and verification of products in actual condition of mounting and operating environment before commercial shipment of the equipment.

- All electronic components or functional modules listed in this catalog are developed, designed and intended for use in general electronics equipment.(for AV, office automation, household, office supply, information service, telecommunications, (such as mobile phone or PC) etc.). Before incorporating the components or devices into any equipment in the field such as transportation,(automotive control, train control, ship control), transportation signal, disaster prevention, medical, public information network (telephone exchange, base station) etc. which may have direct influence to harm or injure a human body, please contact TAIYO YUDEN CO., LTD. for more detail in advance.

Do not incorporate the products into any equipment in fields such as aerospace, aviation, nuclear control, submarine system, military, etc. where higher safety and reliability are especially required.

In addition, even electronic components or functional modules that are used for the general electronic equipment, if the equipment or the electric circuit require high safety or reliability function or performances, a sufficient reliability evaluation check for safety shall be performed before commercial shipment and moreover, due consideration to install a protective circuit is strongly recommended at customer's design stage.

- The contents of this catalog are applicable to the products which are purchased from our sales offices or distributors (so called "TAIYO YUDEN' s official sales channel").

It is only applicable to the products purchased from any of TAIYO YUDEN' s official sales channel.

- Please note that TAIYO YUDEN CO., LTD. shall have no responsibility for any controversies or disputes that may occur in connection with a third party's intellectual property rights and other related rights arising from your usage of products in this catalog. TAIYO YUDEN CO., LTD. grants no license for such rights.

- Caution for export

Certain items in this catalog may require specific procedures for export according to "Foreign Exchange and Foreign Trade Control Law" of Japan, "U.S. Export Administration Regulations", and other applicable regulations. Should you have any question or inquiry on this matter, please contact our sales staff.

THIN FILM TYPE POLYACENE CAPACITORS



Manual Soldering

FEATURES

- Polyacene Capacitors can store a large number of ions into its amorphous structure (doping), therefore Polyacene Capacitors has much larger capacitance than conventional electric double layer capacitors.
- Quick-charge with ampere measure is possible with its Low internal resistance.
- Possible to charge/discharge more than 100,000 times with less deterioration caused by charging/discharging compared to secondary battery which involves chemical reaction, and that enables to more than 100,000 times charge/discharge and large excellence of durability for over charge/discharge.
- Polyacene Capacitors is environmentally friendly power source, which does not contain any heavy metals such as Cd, Hg and Pb. (RoHS compliant)

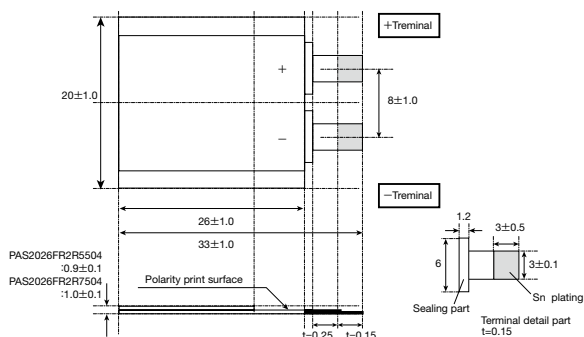
APPLICATIONS

- Back-up power source for CPU, microcomputer, and flash memory writing when shutting off the power.
- Load change leveling (life lengthening of main power source such as dry battery, Lithium primary battery)
- Power source storage combined with solar cell, fuel cell, generator, and so on.
- Main power source for small devices (Measuring equipments, toys and so on).
- Peak Current Assist for LED Flash.

ORDERING CODE

P	A	S	2	0	2	6	F	R	2	R	5	5	0	4
① Type			② Dimensions/ W [mm]		③ Dimensions/ L [mm]		④ Shape		⑤ Maximum Usable Voltage [V]		⑥ Nominal Capacitance [F]			
PAS Polyacene Capacitors			20 20.0		26 26.0		FR Thin Film Type		2R5 2.5		504 0.5F			
※R=decimal point														

EXTERNAL DIMENSIONS



Part Number	W	L	T
PAS2026FR2R5504	20.0	26.0	0.9

Unit : mm

PART NUMBERS

Part Number	Maximum Usable Voltage (V)	Nominal Capacitance (F)	Internal Resistance (mΩ)
PAS2026FR2R5504	2.5	0.5	55

SPECIFICATIONS

Part Number	Operation Temp. Range (°C)	Max. Usable Voltage (V)	Initial Capacitance (F)	Initial Internal Resistance (mΩ)
PAS2026FR2R5504	-25~+60	2.5	0.5±20%	55

RELIABILITY DATA

Items	Specifications	Test Conditions, Remark
	PAS2026FR2R5504	
1. Operating Temperature range	-25~+60°C	
2. Max. Usable Voltage	2.5V	
3. Floating Charge Characteristics	Capacitance (F) : 0.28~0.6 Internal Resistance (mΩ) : Under 120 Appearance : No leakage/Thickness within 1.1mm	Apply the max. Usable voltage to the capacitors for 500hours at max. operating temp. and measure the floating charge characteristics after returning to normal temperature and humidity.
4. Charge/Discharge Cycle Characteristics	Capacitance (F) : 0.28~0.6 Internal Resistance (mΩ) : Under 120 Appearance : No leakage/Thickness within 1.1mm	Temperature : 25±5°C Charge/Discharge Cycle : 10,000times Cycle Condition Charge : max. Usable voltage 5sec MAX 1A Discharge : c1A (Cutoff 1.5V)
5. Thermal Durability	Capacitance (F) : 0.4~0.6 Internal Resistance (mΩ) : Under 96 Appearance : No leakage/Thickness within 1.1mm	Leave in the atmosphere of max. operating temp. ±2°C and -25°C±2°C for 96 hours each and return to normal temp. and pressure.
6. Humidity Durability	Capacitance (F) : 0.4~0.6 Internal Resistance (mΩ) : Under 96 Appearance : No leakage/Thickness within 1mm	Leave in the atmosphere of temp. 40±2°C humidity 90~95%RH for 500h and return to normal temperature.
7. Solder Heat Resistance	Capacitance : Within 0.4~0.6F Internal Resistance : Within 2 times of initial spec. Appearance : No leakage/Thickness within 1.1mm	Manual Soldering : Heating condition : After 380 °C×5sec×2times, return to normal temp. and pressure.

► This catalog contains the typical specification only due to the limitation of space. When you consider the purchase of our products, please check our specification. For details of each product (characteristics graph, reliability information, precautions for use, and so on), see our Web site (<http://www.ty-top.com/>).

THIN FILM TYPE PAS CAPACITOR

RELIABILITY DATA

1. Operating Temperature range		
Specified Value	−25~+60℃	
2. Max. Usable Voltage		
Specified Value	2.5V	
3. Floating Charge Characteristics		
Specified Value	Capacitance(F)	: 0.28~ 0.6
	Internal Resistance(mΩ)	: Under 120
	Appearance	:No leakage/Thickness within 1.1mm
Test Methods and Remarks	Apply the max. Usable voltage to the capacitors for 500hours at max. operating temp. and measure the floating charge characteristics after returning to normal temperature and humidity.	
4. Charge/Discharge Cycle Characteristics		
Specified Value	Capacitance(F)	:0.28~0.6
	Internal Resistance(mΩ)	: Under 120
	Appearance	:No leakage/Thickness within 1.1mm
Test Methods and Remarks	Temperature	:25±5℃
	Charge/Discharge Cycle	:10,000times
	Cycle Condition	
	Charge	:2.5V-5sec MAX 1A
	Discharge	:c1A (Cutoff 1.5V)
5. Thermal Durability		
Specified Value	Capacitance(F)	: 0.4~ 0.6
	Internal Resistance(mΩ)	: Under 96
	Appearance	: No leakage/Thickness within 1.1mm
Test Methods and Remarks	Leave in the atmosphere of 60±2℃ and −25℃±2℃ for 96 hours each and return to normal temp. and pressure.	
6. Humidity Durability		
Specified Value	Capacitance(F)	: 0.4~ 0.6
	Internal Resistance(mΩ)	: Under 96
	Appearance	: No leakage/Thickness within 1mm
Test Methods and Remarks	Leave in the atmosphere of temp. 40±2 °C humidity 90~95 %RH for 500h and return to normal temperature.	
7. Solder Heat Resistance		
Specified Value	Capacitance	: Within 0.4~0.6F
	Internal Resistance	: Within 2 times of initial spec.
	Appearance	: No leakage/Thickness within 1.1mm
Test Methods and Remarks	Manual Soldering : Heating condition : After 380 °C ×10sec×2times, return to normal temp. and pressure.	

THIN FILM TYPE PAS CAPACITOR

■ PRECAUTIONS

1. Use under the maximum usable voltage.
When voltage which exceed the maximum usable voltage is applied, it might cause abnormal current flow, which shorten lifetime, and leakage, and sometimes damages PAS capacitors.
 2. Use under maximum operating temperature.
A capacitor using in over max operating temperature may lead to shorter life, leakage, and electrical damage by increasing internal pressure.
 3. Limited life time.
Lifetime of PAS capacitor is greatly affected by surrounding temperature. 10°C drop in temperature extends its expected lifetime approximately twice as much.
Design a circuit under consideration of deterioration of electrical characteristics after long time usage, decreasing in capacitance and increasing in internal resistance.
 4. PAS capacitor's electrical characteristics might change depending on the surrounding temperature.
PAS Capacitor's electrical characteristics might change depending on the surrounding temperature aside from aged deterioration.
Therefore, be sure to confirm the temperature performance before use product.
 5. PAS capacitor has polarity.
PAS capacitor has polarity. Please check the polarity before use.
If a reverse voltage is applied, causing damage to the product.
 6. Mind voltage drop when back-up.
When back-up (discharging) starts, voltage will drop because of active current and internal resistance.
 7. Environment of usage.
In case PAS capacitor is used in high humidity, alkaline or acid air, it may cause deteriorating of its performance and short circuit by corrosion of outer can or lead terminal. In addition, used in sudden temperature change or high humidity, it may cause deteriorating of its performance and electrolyte leak by dew condensation.
 8. Don't apply shock and vibration or pressure.
PAS capacitor is sensitive to shock. Don't drop PAS capacitor and not apply strong pressure to a body, terminals and lead. Soldering part or lead terminal might be damaged if applying vibration, shock and stress such as pinch, tip, push and twist after installed.
 9. Soldering
If next each item is not minded, it may cause deteriorating of its performance, leakage, shortening lifetime.
Don't solder over solder conditions in the spec. sheet.
 10. Cleaning condition when cleaning circuit-board after soldering.
Cleaning may affect PAS capacitor. Consult us about cleaning conditions beforehand.
Some cleaning conditions cause detrimental influence.
 11. Storage.
Keep following cautions for storage of PAS capacitor.
 - Don't store in the high temperature, the high humidity condition and a place where receiving direct sunlight. Storing PAS capacitor in the room condition of 10°C – 35°C and less than 65% relative humidity is recommended. Sudden temperature change or high humidity may cause deteriorating of its characteristics and Soldering.
 - Don't store PAS capacitor near water, salt water or oil, and it the dew condensation, gasified oil or salinity filled place.
 - Don't store PAS capacitor in the hazardous gas (hydrogen sulfide, sulfurous, chlorine, ammonia, bromine, methyl bromine and etc).
 - Don't fumigate by halogen fumigant.
 - Don't store PAS capacitor near acid or alkaline solvent.
 - Don't store PAS capacitor in a place where exposed to ozone, ultraviolet or x-ray.
 - Don't store PAS capacitor in a place where vibration and shock might occur in.
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