

PT6000/7000 Series Capacitor Recommendations

The selection of input and output capacitor types is determined by ripple current, transient response, equivalent series resistance (ESR), and temperature ratings. At temperatures below (0°C), we recommend tantalum and Oscon-type capacitors on the input bus. At these lower temperatures, aluminum electrolytic capacitors have significant capacitance degradation and do not provide adequate ripple filtering.

NOTE: The Oscon SS Series is not recommended for the output bus. Oscon SS and organic semiconductive electrolyte type capacitors have extremely low ESR and high ripple current capability which can cause output instability. These capacitors are recommended only for the input bus.

The minimum recommended input capacitors for the PT6000/7000 series are shown in Table 4A. The recommended low ESR capacitors are listed in Table 4B. For some products, parallel input caps are required to meet ripple current requirements.

Table 4A

PT6000/7000 SERIES INPUT/OUTPUT CAPACITANCE

Product Series	Input Capacitor		Output Capacitor (μF)
	Capacitor Value (μF)	Ripple Current (mArms)	
PT6500/6600	330	600	330
PT6620/PT6650	330/100	500	330
PT7601/7705	1200	1300	1200
PT7720	560	4000	1200
PT7750	560	8000	2000

Table 4B

PT6500/6600 SERIES ESR RECOMMENDED CAPACITORS

Supplier Series	Working Volts	Value (μF)	ESR (Ohms)	Max Ripple Current (mArms@85°C)
Panasonic FA	10	390	0.117	950
	10	1500	0.045	1400
	25	390	0.068	950
	35	150	0.117	555
	50	150	0.119	740
United Chemi-Con LXF/LFV	10	390	0.12	625
	10	1500	0.044	1440
	25	330	0.084	825
	35	120	0.12	625
	50	120	0.12	755
Nichicon PL	10	390	0.13	950
	10	1500	0.045	1440
	25	390	0.07	985
	35	120	0.15	550
	50	150	0.1	820
Oscon SS	10	330	0.025	>2450
	20	150	0.03	>2200
AVX Tantalum-TPS	6.3	330	0.1	>1149
	10	220	0.1	>2298
	25	33	0.3	>1989
Sprague Tantalum-593D	6.3	330	0.1	>1280
	10	220	0.1	>2560
	25	33	0.225	>2560

IMPORTANT NOTICE

Texas Instruments and its subsidiaries (TI) reserve the right to make changes to their products or to discontinue any product or service without notice, and advise customers to obtain the latest version of relevant information to verify, before placing orders, that information being relied on is current and complete. All products are sold subject to the terms and conditions of sale supplied at the time of order acknowledgment, including those pertaining to warranty, patent infringement, and limitation of liability.

TI warrants performance of its semiconductor products to the specifications applicable at the time of sale in accordance with TI's standard warranty. Testing and other quality control techniques are utilized to the extent TI deems necessary to support this warranty. Specific testing of all parameters of each device is not necessarily performed, except those mandated by government requirements.

Customers are responsible for their applications using TI components.

In order to minimize risks associated with the customer's applications, adequate design and operating safeguards must be provided by the customer to minimize inherent or procedural hazards.

TI assumes no liability for applications assistance or customer product design. TI does not warrant or represent that any license, either express or implied, is granted under any patent right, copyright, mask work right, or other intellectual property right of TI covering or relating to any combination, machine, or process in which such semiconductor products or services might be or are used. TI's publication of information regarding any third party's products or services does not constitute TI's approval, warranty or endorsement thereof.