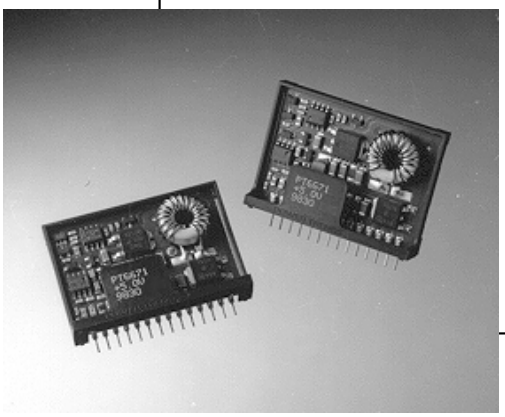
For assistance or to order, call **(800) 531-5782**

PT6670 Series

ADVANCED INFORMATION - AVAILABLE 3Q98

3.3V INPUT 20W BOOST INTEGRATED SWITCHING REGULATOR

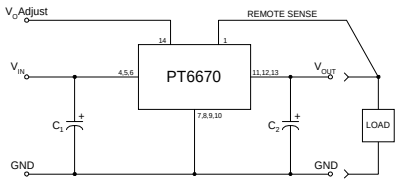
Revised 11/18/98



- Input Voltage Range: 3.0 to 3.6V
- Adjustable Output Voltage
- 85% Efficiency
- Remote Sense Capability
- Soft Start

The PT6670 series is a new addition to the Power Trends high performance family of 14-Pin SIP (Single In-line Package) Integrated Switching Regulators (ISRs), designed for 3.3V bus applications needing 5 to 12 volts for auxilliary circuits at up to 20W of output power.

Standard Application



C_1 = Required 560µF electrolytic
C_2 = Required 560µF electrolytic

Pin-Out Information

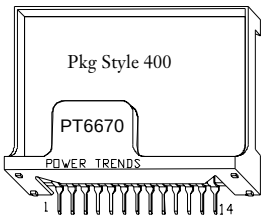
Pin	Function
1	Remote Sense
2	Do not connect
3	Do not connect
4	V_{in}
5	V_{in}
6	V_{in}
7	GND
8	GND
9	GND
10	GND
11	V_{out}
12	V_{out}
13	V_{out}
14	V_{out} Adjust

Ordering Information

PT6671☐ = +5.0 Volts
PT6672☐ = +9.0 Volts
PT6673☐ = +12.0 Volts

PT Series Suffix (PT1234X)

Case/Pin Configuration	*Heat Spreader*
Vertical Through-Hole	**P**
Horizontal Through-Hole	**D**
Horizontal Surface Mount	**E**



Note: Back surface of product is conducting metal.

Preliminary Specifications

Characteristics (T_a = 25°C unless noted)	Symbols	Conditions		PT6670 SERIES Min	Typ	Max	Units
Output Current	I_o	T_a = 60°C, 200 LFM, pkg P		0.1	—	TBD	A
		T_a = 25°C, natural convection	V_o= +5V	0.1	—	4.0	A
			V_o= +9V	0.1	—	2.2	A
			V_o= +12V	0.1	—	1.7	A
Input Voltage Range	V_{in}	Over V_o and I_o range		3.0	—	3.6	V
Inrush Current	I_{ir}	On start-up		—	—	TBD	A
Output Voltage Tolerance	ΔV_o	V_{in} = +3.3V, I_o = I_{omax} T_a = 0°C to 65°C		—	1.5	—	%V_o
Output Voltage Adjust Range	V_{oadj}	Pin 14 to V_o or ground	V_o= +5V	—	TBD	—	V
			V_o= +9V	—	TBD	—	
			V_o= +12V	—	TBD	—	
Line Regulation	Reg_{line}	Over V_{in} range, I_o = I_{omax}		—	±0.25	±0.5	%V_o
Load Regulation	Reg_{load}	V_{in} = +3.3V, 0.1 ≤ I_o ≤ I_{omax}		—	±0.25	±0.5	%V_o
V_o Ripple/Noise	V_n	V_{in} = +3.3V, I_o = I_{omax}		—	3	—	%V_o
Transient Response	t_{tr}	I_o step between ½I_{omax} and I_{omax}		—	500	—	µSec
with C_1= C_2= 560µF	V_{os}	V_o over/undershoot		—	5	—	%V_o
Efficiency	h	V_{in} = +3.3V, I_o = ½I_{omax}	V_o = +5V	—	87	—	%
			V_o = +9V	—	86	—	%
			V_o = +12V	—	87	—	%
		V_{in} = +3.3V, I_o = I_{omax}	V_o = +5V	—	84	—	%
			V_o = +9V	—	80	—	%
			V_o = +12V	—	82	—	%

Note: *The PT6670 Series requires two 560µF electrolytic capacitors (input and output) for proper operation in all applications. Please note that this product does not include short circuit protection.*

Preliminary Specifications (continued)

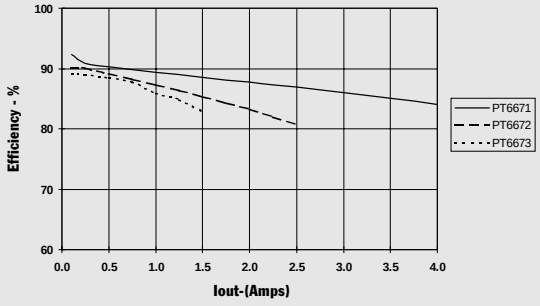
Characteristics (T_a = 25°C unless noted)	Symbols	Conditions	PT6670 SERIES Min	Typ	Max	Units
Switching Frequency	f_o	3.0V ≤ V_{in} ≤ 3.6V 0.1A ≤ I_o ≤ I_{omax}	—	300	—	kHz
Absolute Maximum Operating Temperature Range	T_a		-40	—	+85	°C
Recommended Operating Temperature Range	T_a	Free Air Convection (40-60 LFM) Over V_{in} and I_o ranges with heat tab	-40	—	+65	°C
Thermal Resistance	θ_{ja}	Free Air Convection (40-60 LFM)	—	TBD	—	°C/W
Storage Temperature	T_s	—	-40	—	+125	°C
Mechanical Shock	—	Per Mil-STD-883D, Method 2002.3	—	500	—	G's
Mechanical Vibration	—	Per Mil-STD-883D, Method 2007.2, 20-2000 Hz, soldered in a PC board	—	7.5	—	G's
Weight	—	—	—	14	—	grams

Note: *The PT6670 Series requires two 560µF electrolytic capacitors (input and output) for proper operation in all applications. Please note that this product does not include short circuit protection.*

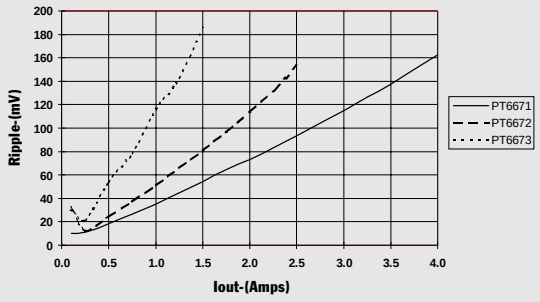
CHARACTERISTIC DATA

PT6670 Series (@ V_{in}=+3.3V) (See Note 1)

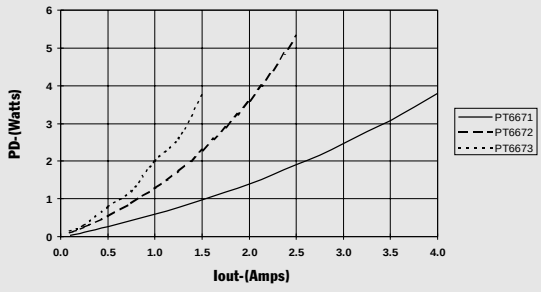
Efficiency vs Output Current



Ripple vs Output Current



Power Dissipation vs Output Current



Note 1: *All data listed in the above graphs has been developed from actual products tested at 25°C. This data is considered typical data for the ISR.*

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