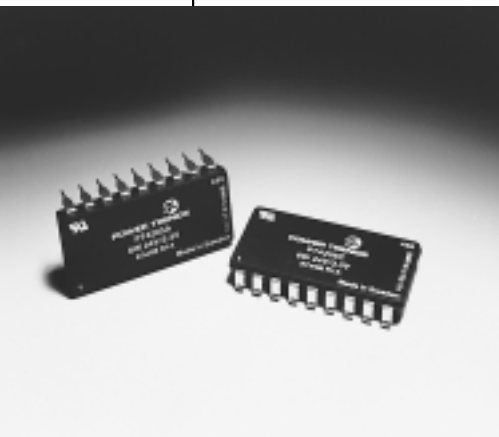


PT4205 Series

**3-7 WATT 24V INPUT
 ISOLATED DC-DC CONVERTER**

Revised 5/15/98

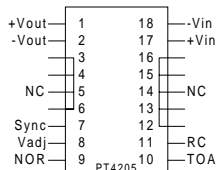


- Wide Input Voltage Range: 18V to 36V
- 84% Efficiency
- 1,500 VDC Isolation
- 18 Pin - DIP Package
- 3.5 Million Hour MTBF
- Meets FCC/EN55022 Class A
- UL and CSA approved
- No External Components Required
- Adjustable Output Voltage

Power Trends' PT4205 series of isolated DC to DC converters advance the state-of-the-art for board-mounted converters by employing high switching frequencies, thick-film technology and a high degree of silicon integration. The high reliability and very low package height makes these converters ideal for Telecom and Datacom applications requiring input-to-output isolation with board spacing down to 0.6".

The PT4205 series is offered in a unique molded through-hole or SMD-DIP package with single output voltages of 3.3V and 5V.

Standard Application



Specifications

Characteristics (T _a = 25°C unless noted)	Symbols	Conditions	PT4205 SERIES				
			Min	Typ	Max	Units	
Output Current	I _o	Over V _{in} range	V _o = 3.3V V _o = 5V	0 0	— —	1.8 1.2	A A
Current Limit	I _{cl}	V _{in} = 24V	V _o = 3.3V V _o = 5V	2.0 1.3	— 1.6	3.0 2.4	A A
On/Off Standby Current	I _{in standby}	V _{in} = 24V; Pin 11 = -V _{in}		—	0.5	—	mA
Short Circuit Current	I _{sc}	V _{in} = 24V	V _o = 3.3V V _o = 5V	— —	2.5 2.0	— —	A A
Inrush Current	I _{ir} t _{ir}	V _{in} = 24V @ max I _o On start-up		— —	0.6 1.0	1.0 2.0	A mSec
Input Voltage Range	V _{in}	Over I _o Range		18**	24	36	V
Output Voltage Tolerance	ΔV _o	Over I _o Range		—	±4	—	%V _o
Idling Voltage	V _o	I _o = 0A	V _o = 3.3V V _o = 5V	— —	3.65 5.6	4.0 6.0	V V
Ripple Rejection	RR	Over V _{in} range @ 120 Hz		—	60	—	dB
Line Regulation	Reg _{line}	Over V _{in} range @ max I _o		—	±0.5	—	%V _o
Load Regulation	Reg _{load}	10% to 100% of I _o max		—	±3	—	%V _o
V _o Ripple/Noise	V _n	V _{in} =24V, I _o =I _o max		—	30	70	mV _{pp}
Transient Response	t _{tr}	50% load change V _o over/undershoot		— —	100 3.0	300 5.0	μSec %V _o
Efficiency	η	V _{in} =24V, I _o =1.8A, V _o =3.3V V _{in} =24V, I _o =1.2A, V _o =5V		— —	79 84	— —	% %
Switching Frequency	f _o	Over V _{in} and I _o		520	—	688	kHz
Pin Temperature	T _p	@ Pin 1		—	—	+95	°C
Operating Temperature	T _a	V _{in} = 24V @ max I _o Free air convection, (40-60LFM)		-40	—	+85	°C
Storage Temperature	T _s	—		-55	—	+125	°C
Mechanical Shock	—	Per Mil-STD-202F, Method 213B, 6mS, half-sine, mounted to a PCB		—	50	—	G's
Mechanical Vibration	—	Per Mil-STD-202F, Method 204D, 10-500Hz, mounted to a PCB		—	10	—	G's
Weight	—	—		—	20	—	grams
Isolation	—	—		1500	—	—	VDC
Flammability	—	Materials meet UL 94V-0		—	—	—	—

** Minimum input voltage is adjustable - See application note.

Pin-Out Information

Pin	Function
1	V _{out}
2	V _{out} return
3	Do not connect
4	Do not connect
5	Do not connect
6	Do not connect
7	Sync input
8*	V _{adj}
9*	Nominal output voltage resistor
10	Turn-on/off input voltage adjust
11	Remote on/off
12	Do not connect
13	Do not connect
14	Do not connect
15	Do not connect
16	Do not connect
17	+V _{in}
18	-V _{in}

* Please note that when the V_{out} adjust is not used, pin 8 must be connected to pin 9.

Ordering Information

Through-Hole

PT4205A = 3.3V/1.8A
PT4206A = 5V/1.2A

Surface Mount

PT4205C = 3.3V/1.8A
PT4206C = 5V/1.2A

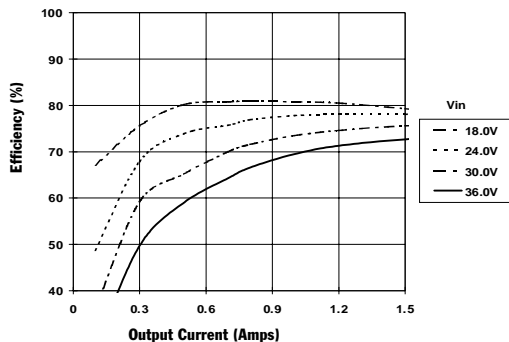
(For dimensions and PC board layout, see Package Style 900.)

CHARACTERISTIC DATA

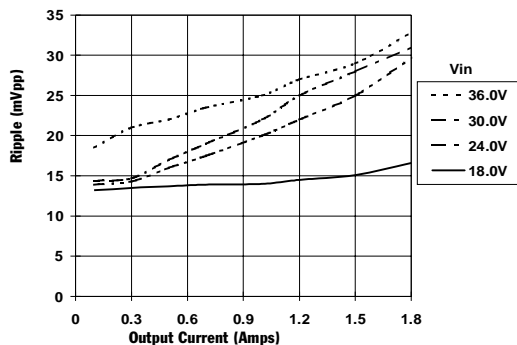
PT4205 Series

PT4205, 3.3 VDC (See Note 1)

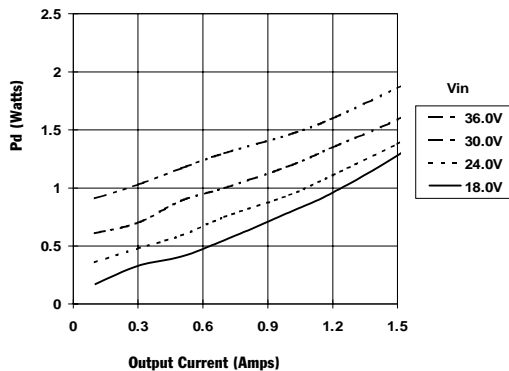
Efficiency vs Output Current



Ripple vs Output Current

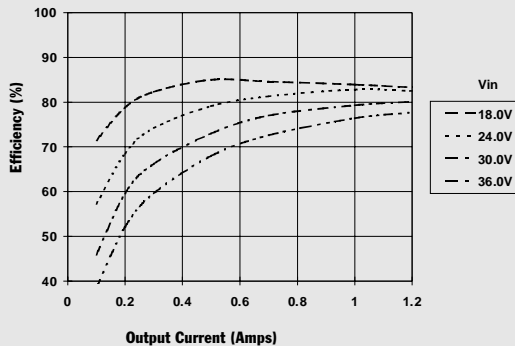


Power Dissipation vs Output Current

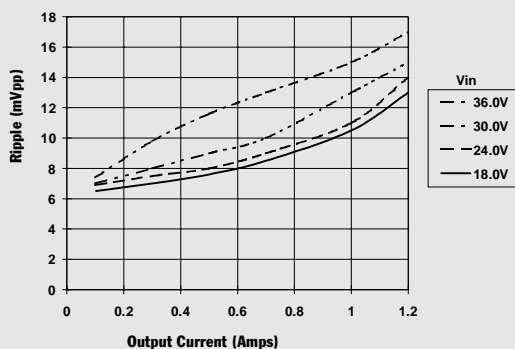


PT4206 5.0 VDC (See Note 1)

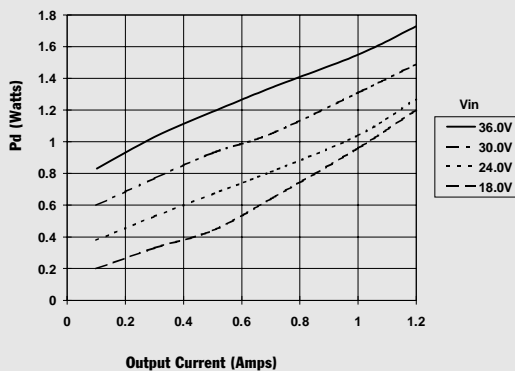
Efficiency vs Output Current



Ripple vs Output Current



Power Dissipation vs Output Current



Note 1: All data listed in the above graphs, except for derating data, has been developed from actual products tested at 25°C. This data is considered typical data for the isolated DC-DC converter.

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