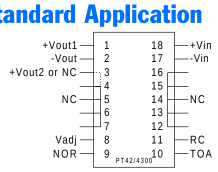
- Wide Input Voltage Range: 38V to 72V
- 83% Efficiency
- 1,500 VDC Isolation
- 18 Pin DIP Package
- 3.5 Million Hour MTBF
- Meets FCC/EN55022 Class A
- UL and CSA approved
- No External Components Required
- Adjustable Output Voltage

Power Trends' PT4200 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 PT4200 series is offered in a unique molded through-hole or SMD-DIP package with single output voltages of 2V, 3.3V, 5V, and 12V, dual outputs of ±5V, +5V/+3.3V, and ±12V.

Standard Application



Specifications

Characteristics (T_a = 25°C unless noted)	Symbols	Conditions		PT42/4300 SERIES Min	Typ	Max	Units
Output Current	I_o	Over V_{in} range	V_o = 2V, 3.3V V_o = 5V V_o = 12V	0 0 0	— — —	1.5 1.2 0.6	A A A
Current Limit	I_{cl}	V_{in} = 48V	V_o = 2V V_o = 3.3V V_o = 5V V_o = 12V	2.0 1.7 1.4 0.7	— — — —	3.3 3.3 2.4 1.2	A A A A
On/Off Standby Current	$I_{in\ standby}$	V_{in} = 48V, Pin 11 = -V_{in}		—	0.5	—	mA
Short Circuit Current	I_{sc}	V_{in} = 48V	V_o = 2V V_o = 3.3V V_o = 5V V_o = 12V	— — — —	2.8 2.4 1.9 1.2	— — — —	A A A A
Inrush Current	I_{ir} t_{ir}	V_{in} = 48V @ max I_o On start-up		— —	0.6 1.0	1.0 5.0	A mSec
Input Voltage Range	V_{in}	Over I_o Range		38 (1)	48	72	V
Output Voltage Tolerance	ΔV_o	Over I_o Range		—	±4	—	%V_o
Idling Voltage	V_o	I_o = 0A	V_o = 2V V_o = 3.3V V_o = 5V V_o = 12V	— — — —	2.7 3.65 5.6 14.3	3.0 4.0 6.0 17	V V 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}= 48V, 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}=48V, I_o=1.5A, V_{in}=48V, I_o=1.5A, V_{in}=48V, I_o=1.2A, V_{in}=48V, I_o=0.6A,	V_o=2V V_o=3.3V V_o=5V V_o=12V	— — — —	73 79 80 83	— — — —	% % % %
Switching Frequency	f_o	Over V_{in} and I_o		—	485	—	kHz
Operating Temperature	T_a	V_{in} = 48V @ max I_o Free air convection, (40-60LFM)		-40	—	+85	°C
Pin Temperature	Tp	@ Pin1		—	—	95	°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					

Notes: *(1) The minimum input voltage is adjustable. See the specific application note on the PT4200/4205/4300 Series.*

Pin-Out Information

Pin	Function
1	$V_{out}1$
2	V_{out} return
3	V_{out2} or N/C
4	Do not connect
5	Do not connect
6	Do not connect
7	Do not connect
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 Vout adjust is not used, pin 8 must be connected to pin 9.*

Ordering Information

Through-Hole

PT4201A = 2V/1.5A
PT4202A = 3.3V/1.5A
PT4203A = 5V/1.2A
PT4204A = 12V/0.6A
PT4301A = ±5V/1A
PT4302A = +5.2V/1A, +3.3V/1A
PT4303A = ±12V/0.25A

Surface Mount

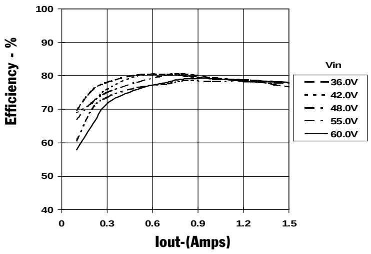
PT4201C = 2V/1.5A
PT4202C = 3.3V/1.5A
PT4203C = 5V/1.2A
PT4204C = 12V/0.6A
PT4301C = ±5V/1A
PT4302C = +5.2V/1A, +3.3V/1A
PT4303C = ±12V/0.25A

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

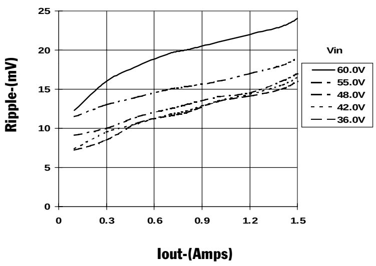
Typical Characteristics

PT4202 3.3V (See Note A)

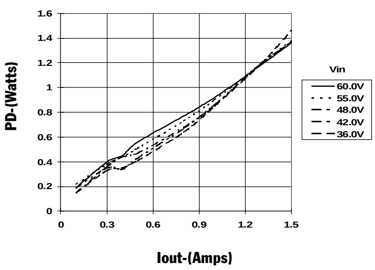
Efficiency vs Output Current



Ripple vs Output Current

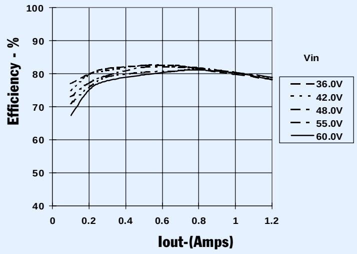


Power Dissipation vs Output Current

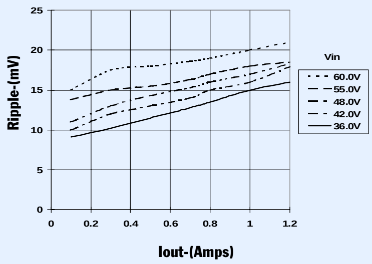


PT4203 5.0V (See Note A)

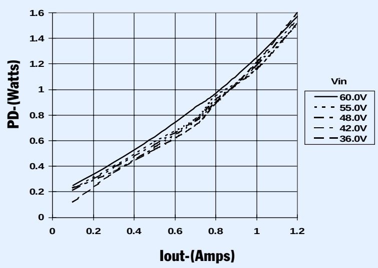
Efficiency vs Output Current



Ripple vs Output Current

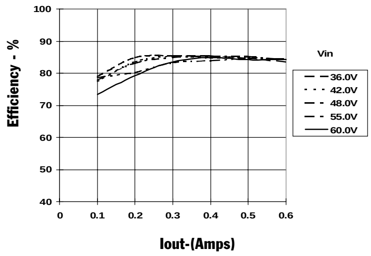


Power Dissipation vs Output Current

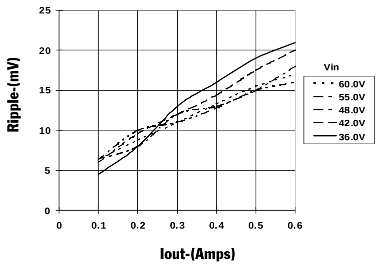


PT4204 12.0V (See Note A)

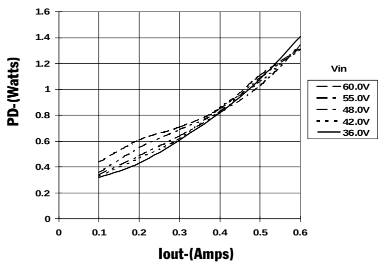
Efficiency vs Output Current



Ripple vs Output Current



Power Dissipation vs Output Current



Note A: *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 DC-DC Converter.*

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