



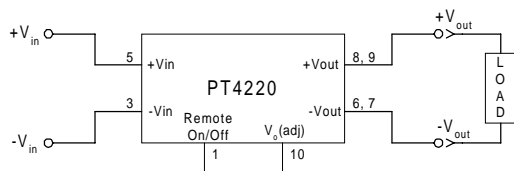
Features

- 10W Output Power
- Input Voltage: 36V to 75V
- 1500 VDC Isolation
- Temp Range: -40°C to +85°C
- Remote On/Off Control
- Adjustable Output Voltage
- Undervoltage Lockout
- Current Limit
- Short-Circuit Protection
- Low-Profile Package (8mm)
- Solderable Copper Case

Description

Power Trends' PT4220 is a new series of isolated DC-DC Converters housed in an ultra-low profile (8mm) solderable copper case. They employ a state-of-the-art high frequency switch mode topology, and are available in either a through-hole or surface-mount package. They are designed for Telecom, Datacom, Industrial, Computer, Medical, and other distributed power applications requiring input-to-output isolation over an industrial temperature range.

Standard Application



Specifications

Characteristics (T _a =25°C unless noted)	Symbols	Conditions	PT4220 SERIES			Units
			Min	Typ	Max	
Output Current	I _o	Over V _{in} range	V _o ≤ 3.3V 0.1 (1) V _o = 5.0V 0.1 (1) V _o = 12V	— 2.0 — 0.85	3.0 2.0 — 0.85	A
On/Off Standby Current	I _{in standby}	V _{in} = 48V, Pin 1 = -V _{in}	—	1.0	10.0	mA
Short Circuit Current	I _{sc}	V _{in} = 48V	V _o ≤ 3.3V — V _o = 5.0V — V _o = 12.0V	5.0 4.0 2.0	— — —	A
Input Voltage Range	V _{in}	I _o = 0.1 to I _{o,max}	36.0	48.0	75.0	V
Set-Point Tolerance	V _{o tol}	V _{in} = 48V, I _o = I _{o,max}	—	±1.0	±2.0	%V _o
Line Regulation	Reg _{line}	Over V _{in} range @ max I _o	—	±1	±15	mV
Load Regulation	Reg _{load}	10% to 100% of I _{o,max}	—	±5	±20	mV
V _o Temperature Variation	Reg _{temp}	V _{in} = 48V, I _o = I _{o,max} -40°C ≤ T _a ≤ +85°C	—	±0.3	—	%V _o
V _o Ripple/Noise	V _n	V _{in} = 48V, I _o = I _{o,max}	V _o ≤ 5V — V _o = 12V	50 120	— —	mV _{pp}
Transient Response (no output capacitor)	t _{tr}	50% load change V _o over/undershoot	V _o ≤ 5V — V _o = 12V	75 150 250	— — —	μSec mV
Efficiency	η	V _{in} = 48V, I _o = I _{o,max}	V _o = 1.5V — V _o = 1.8V — V _o = 2.5V — V _o = 3.3V — V _o = 5.0V — V _o = 12.0V	71 73 78 81 85 87	— — — — — —	%
Switching Frequency	f _o	Over V _{in} and I _o	250	300	350	kHz
Absolute Maximum Operating Temp. Range	T _a	Over V _{in} range	-40	—	+85 (2)	°C
Storage Temperature	T _s	—	-40	—	110	°C
Mechanical Shock	—	Per Mil-STD-202F, Method 213B, 6mS, Half-sine, mounted to a PCB	—	TBD	—	G's
Mechanical Vibration	—	Per Mil-STD-202F, Method 204D, 10-500Hz, Soldered in a PCB	—	TBD	—	G's
Weight	—	—	—	20	—	grams
Isolation Capacitance Resistance	— — —	Input-output / Input-case	1500 — 10	— 1100 —	— — —	V pF MΩ
Flammability	—	Materials meet UL 94V-0	—	—	—	—
Remote On/Off	On (3) Off	Referenced to -V _{in}	4.5 0	— —	20.0 0.8	V

Notes: (1) The converter will operate down to no load with reduced specifications.

(2) See SOA curves or contact the factory for appropriate derating.

(3) Pin 1 has an internal pull-up and may be driven from an open-collector device. If left open, the converter will operate when input power is applied.

PT Series Suffix (PT12345X)

Case/Pin Configuration

Vertical Through-Hole	N
Horizontal Through-Hole	A
Horizontal Surface Mount	C

(For dimensions and PC board layout, see Package Styles 1520 and 1530.)

Ordering Information

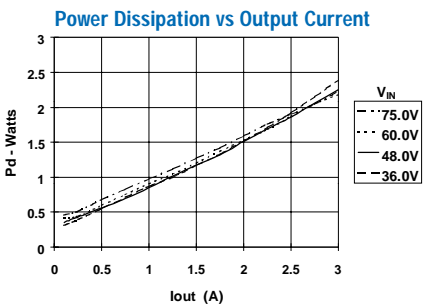
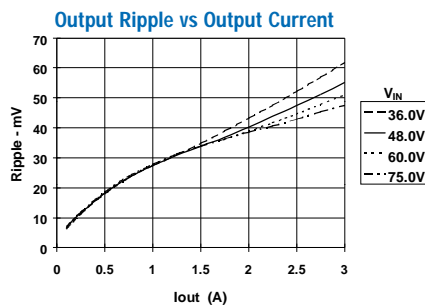
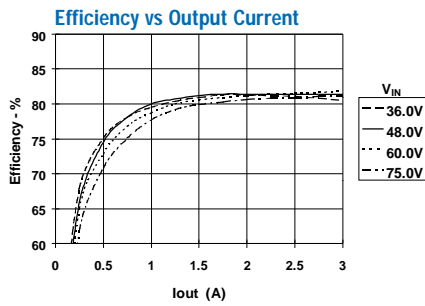
PT4221□	=1.8 Volts
PT4222□	=3.3 Volts
PT4223□	=5.0 Volts
PT4224□	=12.0 Volts
PT4225□	=2.5 Volts
PT4226□	=1.5 Volts

Pin-Out Information

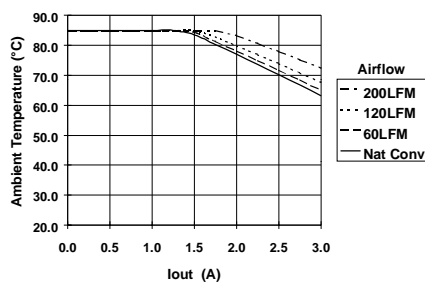
Pin	Function
1	Remote ON/OFF
2	Do not connect
3	-V _{in}
4	Do not connect
5	+V _{in}
6	-V _{out}
7	-V _{out}
8	+V _{out}
9	+V _{out}
10	V _{out} adjust

10 Watt Low-Profile 48V Input
Isolated DC-DC Converter

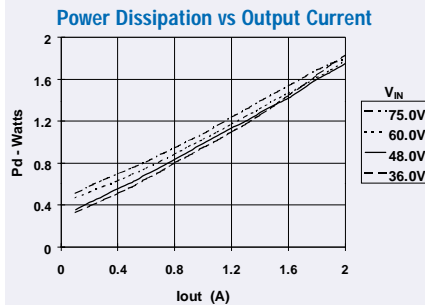
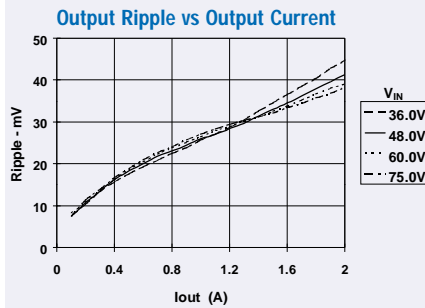
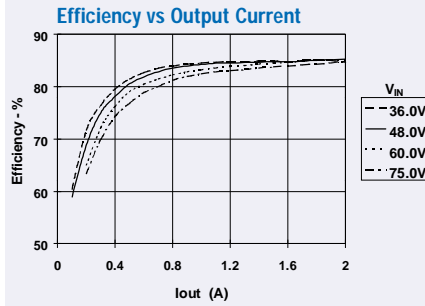
PT4222, $V_0 = 3.3\text{VDC}$ (See Note A)



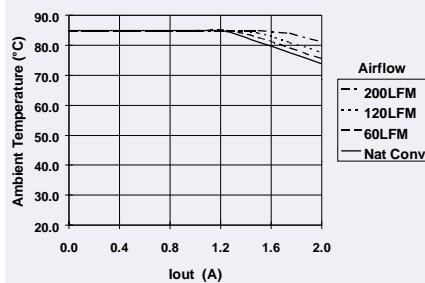
Safe Operating Area @Vin = 48V (Note B)



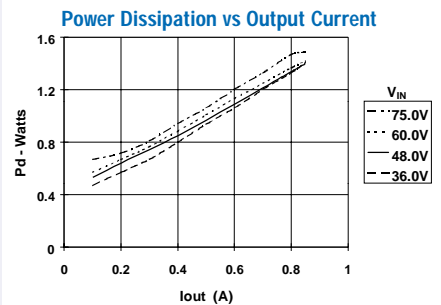
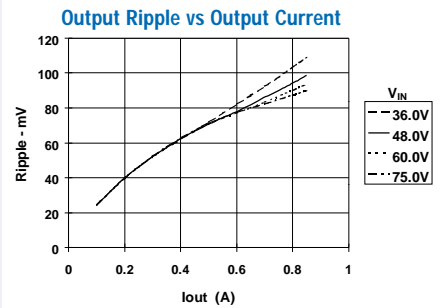
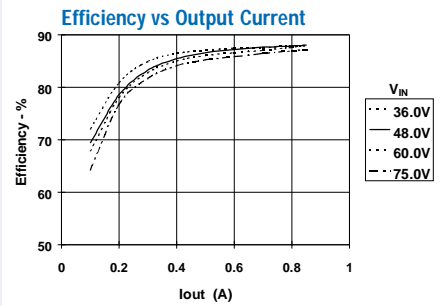
PT4223, $V_0 = 5.0\text{VDC}$ (See Note A)



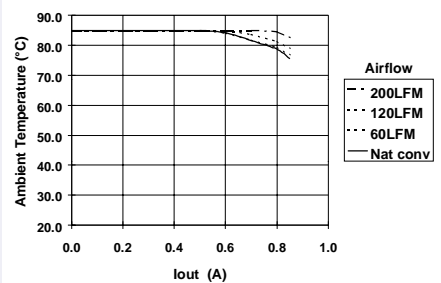
Safe Operating Area @Vin = 48V (Note B)



PT4224, $V_0 = 12.0\text{VDC}$ (See Note A)



Safe Operating Area @Vin = 48V (Note B)



Note A: All Characteristic data in the above graphs has been developed from actual products tested at 25°C. This data is considered typical data for the converter.
Note B: SOA curves represent operating conditions at which internal components are at or below manufacturer's maximum rated operating temperatures.