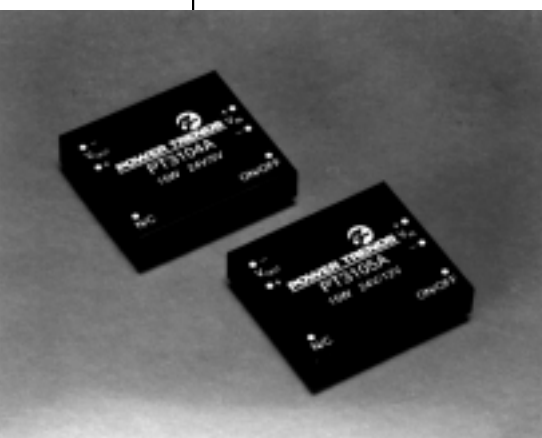
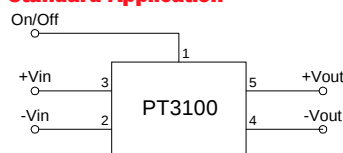


PT3100 Series**24V****15 WATT 24V TO 5V/12V/15V
ISOLATED DC-DC CONVERTER****Revised 5/15/98**

- Power Density 15 Watts/in³
- Wide Input Voltage Range 18V to 40V
- 81% Efficiency
- 500 VDC Isolation
- Small Footprint
- No External Components Required

Power Trends' PT3104A (5V),
PT3105A (12V) and PT3106A (15V)

Isolated DC-DC Converters advance the state-of-the-art for board-mounted converters by employing high switching frequencies greater than 650 KHz and planar magnetics and surface-mount construction. They feature the industry's smallest footprint, a power density of 15 Watts/in³, and operate at 80% efficiency. They are designed for Telecom, Industrial, Computer, Medical, and other distributed power applications requiring input-to-output isolation.

Standard Application**Specifications**

Characteristics (T _a =25°C unless noted)	Symbols	Conditions	PT3100 SERIES				Units
			Min	Typ	Max		
Output Current	I _o	Over V _{in} range, V _o = 5V V _o = 12V V _o = 15V	0 0 0	— — —	3.0 1.25 1.0	A A A	
Current Limit	I _{cl}	V _{in} = 18V, V _o = 5V V _o = 12V V _o = 15V	— — —	4.0 1.75 1.4	— — —	A A A	
On/Off Standby Current	I _{in standby}	V _{in} = 24V, Pin 1 = -V _{in}	—	7	10	mA	
Short Circuit Current	I _{sc}	V _{in} = 24V, V _o = 5V V _o = 12V V _o = 15V	— — —	6.25 2.5 2.0	— — —	A A A	
Inrush Current	I _{ir} t _{ir}	V _{in} = 24V @ max I _o On start-up	— —	1.0 1.0	2.0 5.0	A mSec	
Input Voltage Range	V _{in}	I _o = 0.1 to max I _o	18.0	24.0	40.0	V	
Output Voltage Tolerance	ΔV _o	Over V _{in} Range T _A = -20°C to +70°C	—	±1.0	±2.0	%V _o	
Ripple Rejection	RR	Over V _{in} range @ 120 Hz	—	60	—	dB	
Line Regulation	Reg _{line}	Over V _{in} range @ max I _o	—	±0.2	±1.0	%V _o	
Load Regulation	Reg _{load}	10% to 100% of I _o max	—	±0.4	±1.0	%V _o	
V _o Ripple/Noise	V _n	V _{in} =24V, I _o =3.0A, V _o =5V V _{in} =24V, I _o =1.25A, V _o =12V V _{in} =24V, I _o =1.25A, V _o =15V	— — —	75 75 100	100 150 200	mV _{pp} mV _{pp} mV _{pp}	
Transient Response	t _{tr}	50% load change V _o over/undershoot	— —	125 3.0	200 5.0	μSec %V _o	
Efficiency	η	V _{in} =24V, I _o =3.0A, V _o =5V V _{in} =24V, I _o =1.25A, V _o =12V V _{in} =24V, I _o =1A, V _o =15V	— — —	80 80 81	— — —	% % %	
Switching Frequency	f _o	Over V _{in} and I _o , V _o =5V V _o =12V/15V	800 600	850 650	900 700	kHz kHz	
Recommended Operating Temperature Range	T _a	V _{in} = 24V @ max I _o Free air convection, (40-60LFM)	-20	—	+70*	°C	
Thermal Resistance	θ _{ja}	Free Air Convection, (40-60LFM)	—	14	—	°C/W	
Case Temperature	T _c	@ Thermal shutdown	—	—	100	°C	
Storage Temperature	T _s		-40	—	110	°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, Soldered in a PCB	—	10	—	G's	
Weight	—		—	28	—	grams	
Isolation	—		500	—	—	V	
Capacitance	—		—	1100	—	pF	
Resistance	—		10	—	—	MΩ	
Flammability	—	Materials meet UL 94V-0					
Remote On/Off	On Off	Open or 2.5 to 7.0 VDC above -V _{in} Short or 0 to 0.8 VDC above -V _{in}					

* See Thermal Derating Curves

Pin-Out Information

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

Ordering Information**Through-Hole**

PT3104A = 5 Volts
PT3105A = 12 Volts
PT3106A = 15 Volts

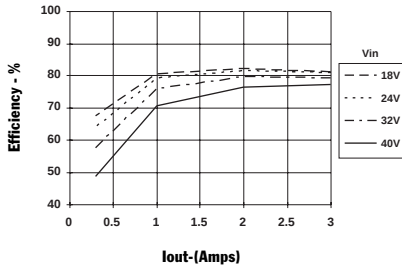
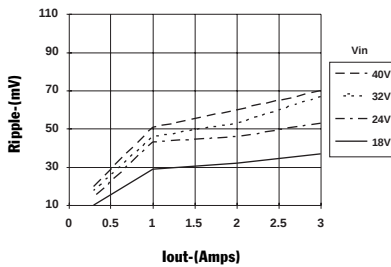
Surface Mount

PT3104C = 5 Volts
PT3105C = 12 Volts
PT3106C = 15 Volts

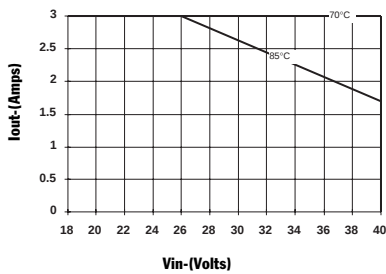
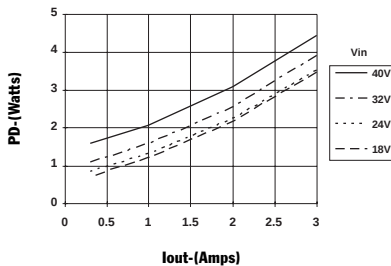
(For dimensions and PC board layout, see Package Style 700.)

CHARACTERISTIC DATA**PT3100 Series****24V****PT3104, 5.0 VDC**

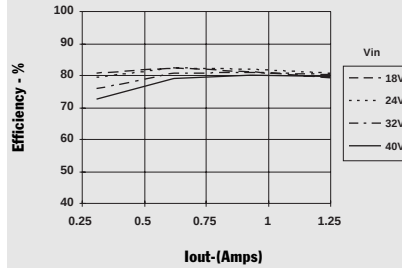
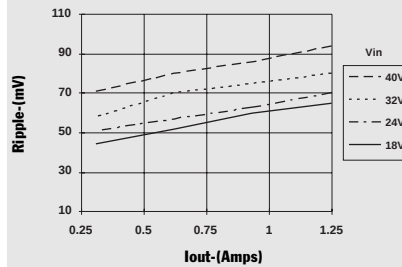
(See Note 1)

Efficiency vs Output Current**Ripple vs Output Current****Thermal Derating (T_a)**

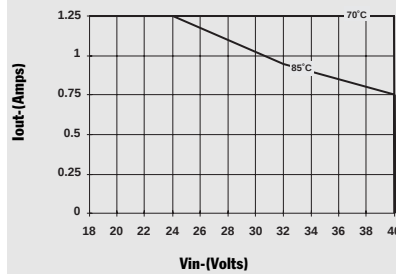
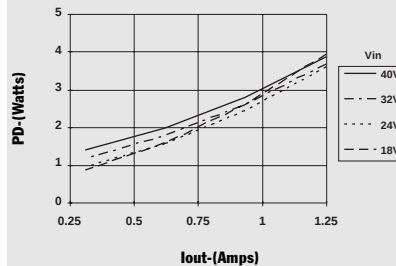
(See Note 2)

**Power Dissipation vs Output Current****PT3105, 12.0 VDC**

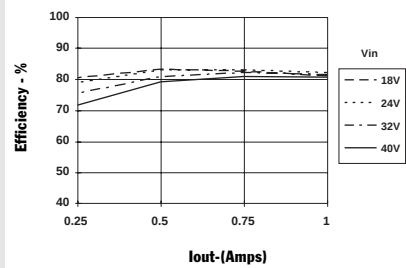
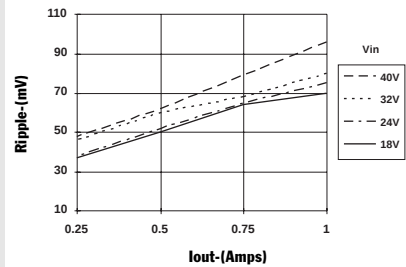
(See Note 1)

Efficiency vs Output Current**Ripple vs Output Current****Thermal Derating (T_a)**

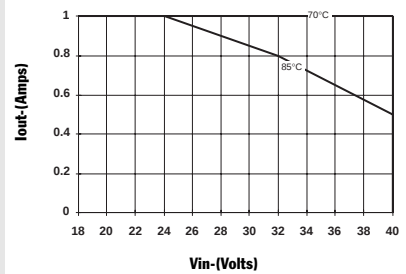
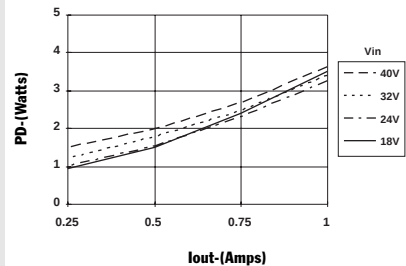
(See Note 2)

**Power Dissipation vs Output Current****PT3106, 15.0 VDC**

(See Note 1)

Efficiency vs Output Current**Ripple vs Output Current****Thermal Derating (T_a)**

(See Note 2)

**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 DC-DC Converters.**Note 2:** Thermal derating graphs are developed in free air convection cooling of 40-60 LFM.

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