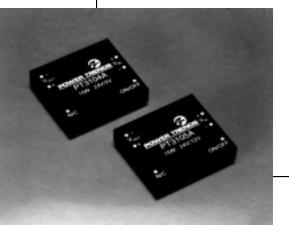
PT3100 Series

24V

15 WATT 24V TO 5V/12V/15V ISOLATED DC-DC CONVERTER

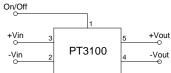
Revised 5/15/98



- 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		Conditions		PT3100 SERIES			
(T _a =25°C unless noted)	Symbols			Min	Тур	Max	Units
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	$\begin{matrix}I_{ir}\\t_{ir}\end{matrix}$	$V_{\rm in}$ = 24V @ max $I_{\rm o}$ 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	$\Delta V_{\rm o}$	Over V _{in} Range T _A = -20°C to +70°C		_	±1.0	±2.0	%Vo
Ripple Rejection	RR	Over V _{in} range @ 120 Hz		_	60	_	dB
Line Regulation	Regline	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	${}^{mV_{pp}}_{mV_{pp}}$
Transient Response	t _{tr}	50% load change Vo 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_{0}	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	_	gram
Isolation Capacitance Resistance	Ξ	=		500 10	<u>1100</u>	_	V pF MΩ
Flammability	_	Materials meet UI	L 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}					

Pin-Out Information

Pin Function		
1	Remote	
2	ON/OFF -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

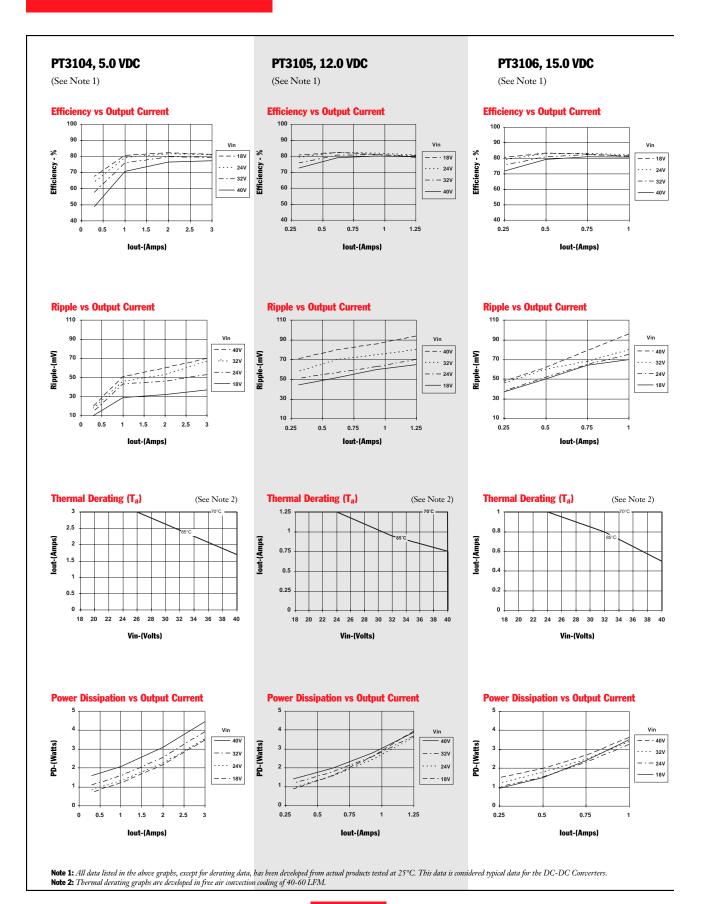
(For dimensions and PC board layout, see Package Style 700.)

SHEETS

PT3100 Series

2 4 V

CHARACTERISTIC DATA



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