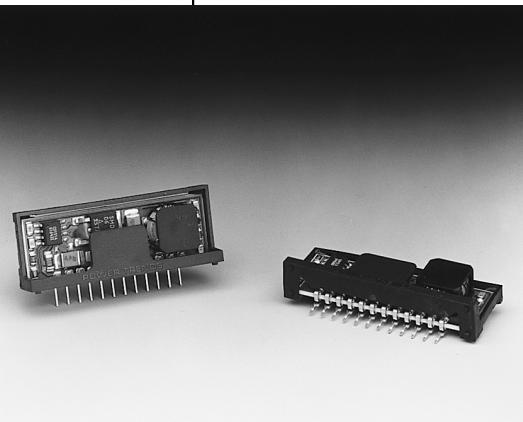
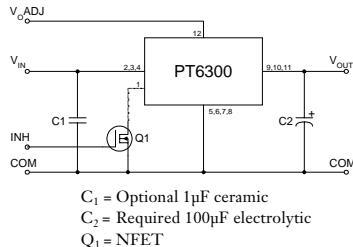


PT6310 Series

2 AMP ADJUSTABLE POSITIVE STEP-DOWN
INTEGRATED SWITCHING REGULATORSLTS076
(Revised 8/17/99)

Standard Application



Specifications

Characteristics ($T_a = 25^\circ\text{C}$ unless noted)	Symbols	Conditions	PT6310 Series			
Output Current	I_o	Over V_{in} range	0.1*	—	2.0	A
Short Circuit Current	I_{sc}	$V_{in} = V_o + 5\text{V}$	—	5.0	—	A_{pk}
Input Voltage Range	V_{in}	$0.1 \leq I_o \leq 2.0 \text{ A}$	$V_o + 4$	—	38**	V
Output Voltage Tolerance	ΔV_o	Over V_{in} Range, $I_o = 2.0 \text{ A}$ $T_a = 0^\circ\text{C}$ to $+60^\circ\text{C}$	—	± 1.0	± 2.0	$\% V_o$
Line Regulation	Reg_{line}	Over V_{in} range	—	± 0.25	± 0.5	$\% V_o$
Load Regulation	Reg_{load}	$0.1 \leq I_o \leq 2.0 \text{ A}$	—	± 0.25	± 0.5	$\% V_o$
V_o Ripple/Noise	V_n	$V_{in} = V_{in} \text{ min}$, $I_o = 2.0 \text{ A}$	—	± 2	—	$\% V_o$
Transient Response with $C_o = 100\mu\text{F}$	$\frac{V_{tr}}{V_{os}}$	50% load change V_o over/undershoot	—	100	200	μSec $\% V_o$
Efficiency	η	$V_{in}=24\text{V}$, $I_o = 2.0 \text{ A}$	—	87	—	%
Switching Frequency	f_o	Over V_{in} and I_o ranges	PT6312 only	600	700	kHz
				500	550	kHz
Shutdown Current	I_{sc}	$V_{in} = 15\text{V}$	—	100	—	μA
Quiescent Current	I_{nl}	$I_o = 0\text{A}$, $V_{in} = 10\text{V}$	—	10	—	mA
Output Voltage Adjustment Range	V_o	Below V_o Above V_o	See Application Notes.			
Absolute Maximum Operating Temperature Range	T_a		-40	—	+85	$^\circ\text{C}$
Recommended Operating Temperature Range	T_a	Free Air Convection, (40-60LFM) At $V_{in} = 18\text{V}$, $I_o = 2.0\text{A}$	-40	—	+70	$^\circ\text{C}$
Thermal Resistance	θ_{ja}	Free Air Convection (40-60LFM)	—	30	—	$^\circ\text{C}/\text{W}$
Storage Temperature	T_s	—	-40	—	+125	$^\circ\text{C}$
Mechanical Shock		Per Mil-STD-883D, Method 2002.3, 1 msec, Half Sine, mounted to a fixture	—	500	—	G's
Mechanical Vibration		Per Mil-STD-883D, Method 2007.2, 20-2000 Hz, Soldered in a PC board	—	10	—	G's
Weight	—	—	—	6.5	—	grams

* ISR will operate to no load with reduced specifications.

** Input voltage cannot exceed 30V when the inhibit function is used.

Note: The PT6310 requires a 100 μ F electrolytic or tantalum output capacitor for proper operation in all applications.

- 87% Efficiency
- Adjustable Output Voltage
- Internal Short Circuit Protection
- Over-Temperature Protection
- On/Off Control (Ground Off)
- Small SIP Footprint
- Wide Input Range

The PT6310 series is a High-Performance 2 Amp, 12-Pin SIP (Single In-line Package) Integrated

Switching Regulator (ISR) designed to meet the on-board power conversion needs of battery powered or other equipment requiring high efficiency and small size. This high performance ISR offers a unique combination of features combining 87% typical efficiency with open-collector on/off control and adjustable output voltage.

Quiescent current in the shutdown mode is typically less than 100 μ A.

Pin-Out Information

Pin	Function
1	Inhibit (30V max)
2	V_{in}
3	V_{in}
4	V_{in}
5	GND
6	GND
7	GND
8	GND
9	V_{out}
10	V_{out}
11	V_{out}
12	$V_{out Adj}$

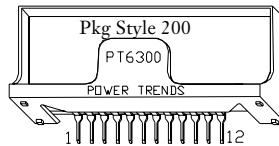
Ordering Information

PT6310□	= +14.6 Volts
PT6311□	= +15.5 Volts
PT6312□	= +15.0 Volts
PT6313□	= +8.0 Volts

PT Series Suffix (PT1234X)

Case/Pin Configuration

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



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