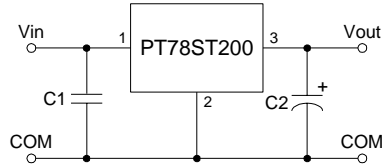


- High Efficiency > 87%
- Wide Input Range
- Aluminum Heatsink for Applications with Airflow
- Self-Contained Inductor
- Short Circuit Protection
- Over-Temperature Protection
- Pin Compatible with Linear 3-Terminal, "78" Series Regulators
- Small Footprint

The Power Trends' PT78ST200 is a series of 3-terminal Integrated Switching Regulators (ISRs) that can supply up to 24 watts of regulated 12V power. With a surge capability of 3 Amps and an output voltage that is laser trimmed, it is ideal for inductive load applications such as disk drive motors.

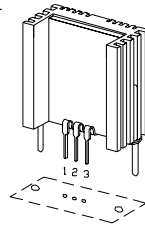
Standard Application



C₁ = Optional 1μF ceramic
C₂ = Required 100μF electrolytic

Pin-Out Information

Pin	Function
1	V _{in}
2	GND
3	V _{out}



SUGGESTED BOARD LAYOUT
COMPONENT SIDE VIEW

Pkg Style 600

Ordering Information

PT78ST2 XX Y

Output Voltage
12 = 12.0 Volts

Package Suffix
V = Vertical Mount

Specifications

Characteristics (T _a = 25°C unless noted)	Symbols	Conditions	PT78ST200 SERIES			Units
			Min	Typ	Max	
Output Current	I _o	Over V _{in} range With forced air cooling	0.1*	—	2.0	A
Short Circuit Current	I _{sc}	V _{in} = V _{in} min	—	5.0	—	A _{pk}
Input Voltage Range	V _{in}	0.1 ≤ I _o ≤ 2.0A	16	—	28	V
Output Voltage Tolerance	ΔV _o	Over V _{in} range, I _o = 2.0A T _a = 0°C to +60°C	—	±1.0	±2.0	%V _o
Line Regulation	Reg _{line}	Over V _{in} range	—	±0.4	±0.8	%V _o
Load Regulation	Reg _{load}	0.1 ≤ I _o ≤ 2.0A	—	±0.2	±0.4	%V _o
V _o Ripple/Noise	V _n	V _{in} = 17V, I _o = 2.0A, V _o = 12V	—	120	—	mV _{pp}
Transient Response (with 100μF output cap)	t _{tr}	50% load change V _o over/undershoot	—	100	—	μSec
Efficiency	η	V _{in} = 17V, I _o = 2.0A	—	87	—	%
Switching Frequency	f _o	Over V _{in} and I _o ranges	0.95	1.0	1.05	MHz
Absolute Maximum Operating Temperature Range	T _a	—	-40	—	+65	°C
Recommended Operating Temperature Range	T _a	Free Air Convection, (40-60LFM) at V _{in} = 24V, I _o = 2A	-40	—	+55**	°C
Thermal Resistance	θ _{ja}	Free Air Convection, (40-60LFM)	—	35	—	°C/W
Storage Temperature	T _s	—	-40	—	+125	°C
Mechanical Shock	—	Per Mil-STD-883D, Method 2002.3	—	500	—	G's
Mechanical Vibration	—	Per Mil-STD-883D, Method 2007.2, 20-2000 Hz, Soldered in a PC board	—	10	—	G's
Weight	—	—	—	11	—	Grams

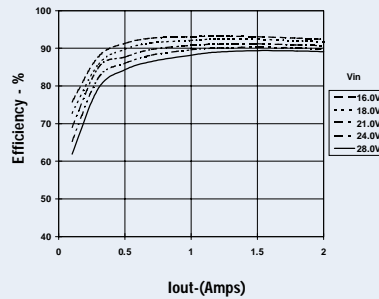
*ISR will operate down to no load with reduced specifications.

**See Thermal Derating chart.

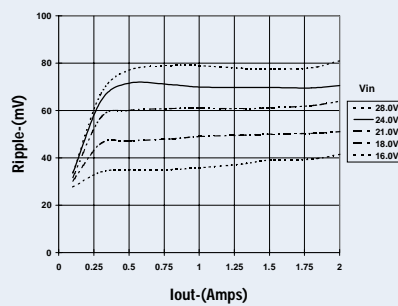
Note: The PT78ST200 Series requires a 100μF electrolytic or tantalum output capacitor for proper operation in all applications.

PT78ST212 12.0 VDC (See Note 1)

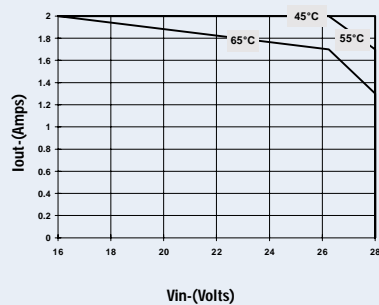
Efficiency vs Output Current



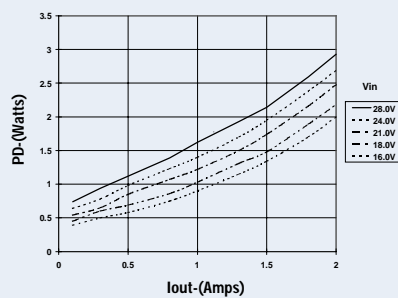
Ripple vs Output Current



Thermal Derating (Ta) (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 ISR.
 Note 2: Thermal derating graphs are developed in free air convection cooling of 40-60 LFM. (See Thermal Application Notes.)