32 Amp "Current Booster" for PT7770 Series Regulators

SLTS049A

(Revised 6/30/2000)

The PT7746 is a high-output 32 Amp "Current Booster" for the PT7770 series housed in a 27-pin SIP package.

Multiple PT7746 boosters will operate in parallel with any of the PT7770 series products, boosting output current in increments of 32A. Combinations of a PT7770 series regulator and PT7746 current boosters can supply enough power for virtually any multiple mega-processor application.

A PT7746 current booster adds a parallel output stage that is driven from the regulator. As such, the system runs in perfect sychronization providing a low noise solution.

The PT7746 only operates in combination with a PT7770 series regulator and is not a stand-alone product. Please refer to the PT7771, PT7772, or PT7777 series data sheet for performance specifications.

The PT7746 has the same mechanical outline and package options as the PT7770 series.

Features

- 32A Current Boost
- Tracks Vo of a PT7770
- High Efficiency
- Input Voltage Range: 3V to 5.5V
- Synchronized with PT7770
- 27-pin SIP Package
- Run up to 2 in Parallel - 96 Amps

Pin-Out Information

Pin	Function	Pin	Function
1	Do not connect	14	GND
2	Do not connect	15	GND
3	Do not connect	16	GND
4	Do not connect	17	GND
5	Do not connect	18	GND
6	Do not connect	19	GND
7	V_{in}	20	V_{out}
8	V_{in}	21	V_{out}
9	V_{in}	22	V_{out}
10	V_{in}	23	V_{out}
11	V_{in}	24	V_{out}
12	Do not connect	25	V_{out}
13	GND	26	Do not connect
		27	Master Sync In

Ordering Information

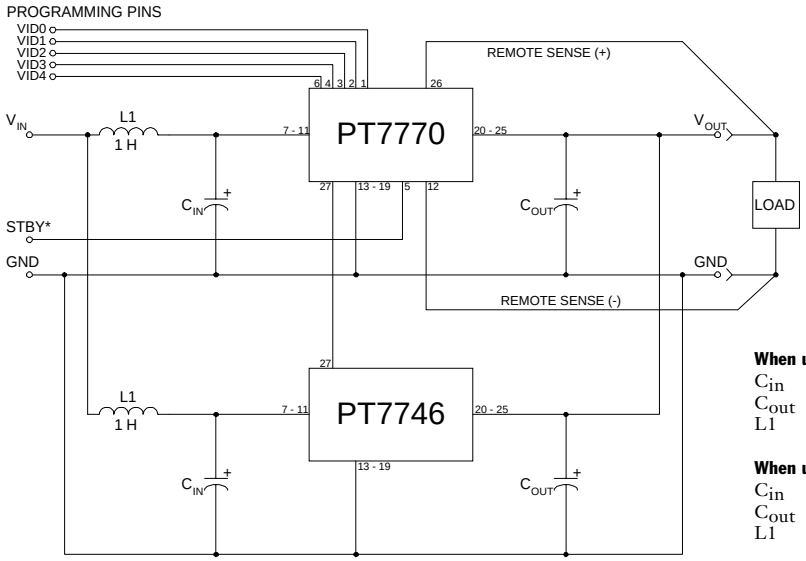
PT7746❑

(For dimensions and PC Board layout, see Package Styles 1020 and 1030.)

PT Series Suffix (PT1234X)

Case/Pin Configuration	
Vertical Through-Hole	**N**
Horizontal Through-Hole	**A**
Horizontal Surface Mount	**C**

Standard Application



When used with PT7771/7772:
C_{in} = Required 2400µF electrolytic
C_{out} = Required 2400µF electrolytic
L1 = Optional 1µH input choke

When used with PT7777:
C_{in} = Required 2400µF electrolytic
C_{out} = Required 680µF electrolytic
L1 = Optional 1µH input choke

Output Capacitors: *When used with a PT7771 or PT7772, the PT7746 requires a minimum ouput capacitance of 2400µF. When used with a PT7777, the PT7746 requires a minimum ouput capacitance of 680µF for proper operation. Do not use Oscon type capacitors. The maximum allowable output capacitance is 30,000µF.*

Input Filter: *An input filter is optional for most applications. The input inductor must be sized to handle 32ADC with a typical value of 1µH. The input capacitance must be rated for a minimum of 2.6Arms of ripple current. For transient or dynamic load applications, additional capacitance may be required.*

PACKAGING INFORMATION

Orderable Device	Status (1)	Package Type	Package Drawing	Pins	Package Qty	Eco Plan (2)	Lead/Ball Finish	MSL Peak Temp (3)
PT7746A	NRND	SIP MODULE	EJA	27	6	TBD	Call TI	Level-1-215C-UNLIM
PT7746C	NRND	SIP MODULE	EJC	27		TBD	Call TI	Call TI
PT7746N	NRND	SIP MODULE	EJD	27		TBD	Call TI	Call TI

(1) The marketing status values are defined as follows:
ACTIVE: Product device recommended for new designs.
LIFEBUY: TI has announced that the device will be discontinued, and a lifetime-buy period is in effect.
NRND: Not recommended for new designs. Device is in production to support existing customers, but TI does not recommend using this part in a new design.
PREVIEW: Device has been announced but is not in production. Samples may or may not be available.
OBSOLETE: TI has discontinued the production of the device.

(2) Eco Plan - The planned eco-friendly classification: Pb-Free (RoHS), Pb-Free (RoHS Exempt), or Green (RoHS & no Sb/Br) - please check http://www.ti.com/productcontent for the latest availability information and additional product content details.
TBD: The Pb-Free/Green conversion plan has not been defined.
Pb-Free (RoHS): TI's terms "Lead-Free" or "Pb-Free" mean semiconductor products that are compatible with the current RoHS requirements for all 6 substances, including the requirement that lead not exceed 0.1% by weight in homogeneous materials. Where designed to be soldered at high temperatures, TI Pb-Free products are suitable for use in specified lead-free processes.
Pb-Free (RoHS Exempt): This component has a RoHS exemption for either 1) lead-based flip-chip solder bumps used between the die and package, or 2) lead-based die adhesive used between the die and leadframe. The component is otherwise considered Pb-Free (RoHS compatible) as defined above.
Green (RoHS & no Sb/Br): TI defines "Green" to mean Pb-Free (RoHS compatible), and free of Bromine (Br) and Antimony (Sb) based flame retardants (Br or Sb do not exceed 0.1% by weight in homogeneous material)

(3) MSL, Peak Temp. -- The Moisture Sensitivity Level rating according to the JEDEC industry standard classifications, and peak solder temperature.

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