

Electrical Characteristics at $T_a = 25^\circ\text{C}$, $V_O = 3.3\text{V}$

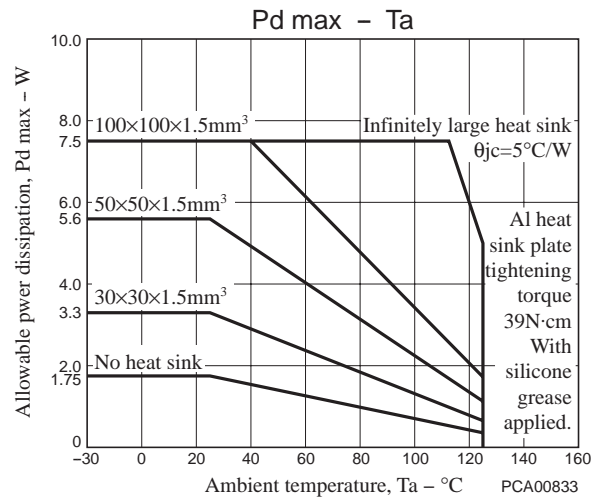
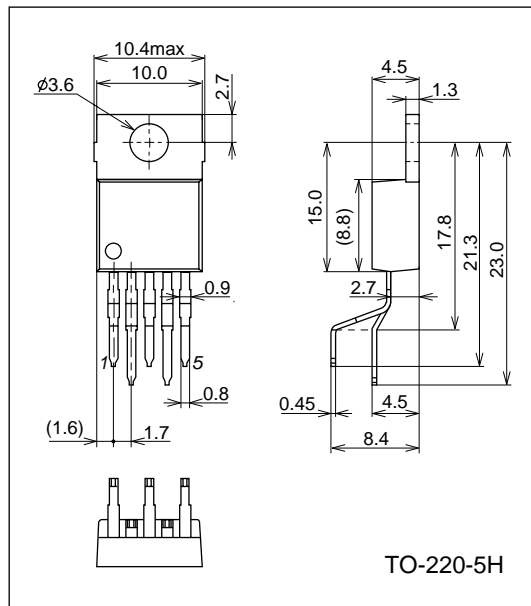
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Reference voltage	V_{OS}	$V_{IN} = 15\text{V}$, $I_O = 1.0\text{A}$	1.20	1.23	1.26	V
Efficiency	η	$V_{IN} = 15\text{V}$, $I_O = 1.0\text{A}$, Set $V_O = 5\text{V}$		84		%
Switching frequency	f	$V_{IN} = 15\text{V}$, $I_O = 1.0\text{A}$	128	160	192	kHz
Switching frequency when short-circuit protection is active	f_{short}	$V_{IN} = 15\text{V}$, $V_{OS} = 0\text{V}$	15	30	45	kHz
Line regulation	$\Delta V_{O\text{LINE}}$	$V_{IN} = 8$ to 20V , $I_O = 1.0\text{A}$		40	100	mV
Load regulation	$\Delta V_{O\text{LOAD}}$	$V_{IN} = 15\text{V}$, $I_O = 0.5$ to 1.5A		10	30	mV
Output voltage temperature coefficient	$\Delta V_O/\Delta T_a$	Designed target value. *		± 0.5		mV/ $^\circ\text{C}$
Ripple attenuation factor	RREJ	$f = 100$ to 120Hz		45		dB
Output leak current	$I_{O\text{leak}}$	$V_{IN} = 15\text{V}$, $SW_{OUT} = -0.4\text{V}$			50	μA
Current limiter operating voltage	I_S	$V_{IN} = 15\text{V}$	3.1			A
Operating current	I_{VIN}	$V_{IN} = 15\text{V}$		5.6		mA
Standby current	I_{STBY}	$V_{IN} = 15\text{V}$, $ENA = 5\text{V}$			200	μA
ENA pin LOW voltage range	V_{ENAL}				0.6	V
ENA pin HIGH voltage range	V_{ENAH}		2.4		V_{IN}	V
Thermal shutdown operating temperature	TSD	Designed target value. *		165		$^\circ\text{C}$
Thermal shutdown Hysteresis width	ΔTSD	Designed target value. *		15		$^\circ\text{C}$

* Design target value: No measurement made.

Package Dimensions

unit : mm (typ)

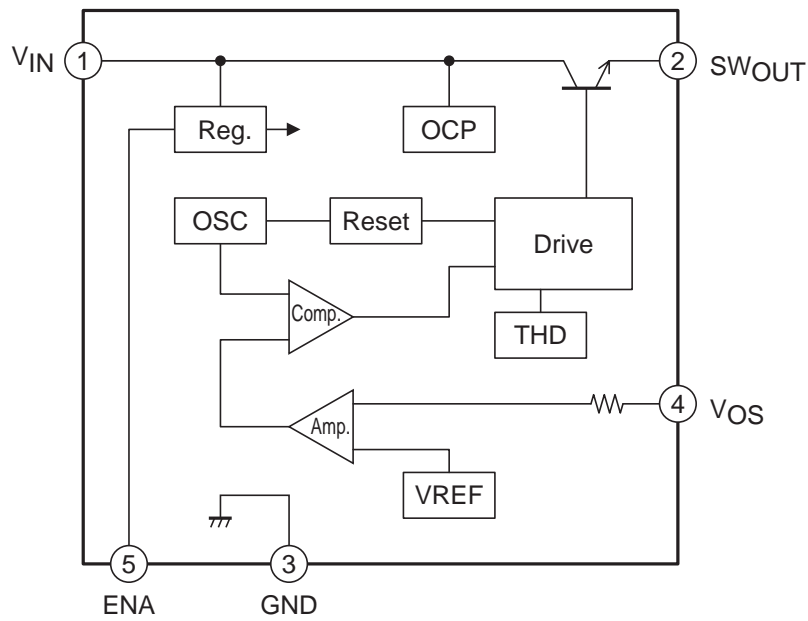
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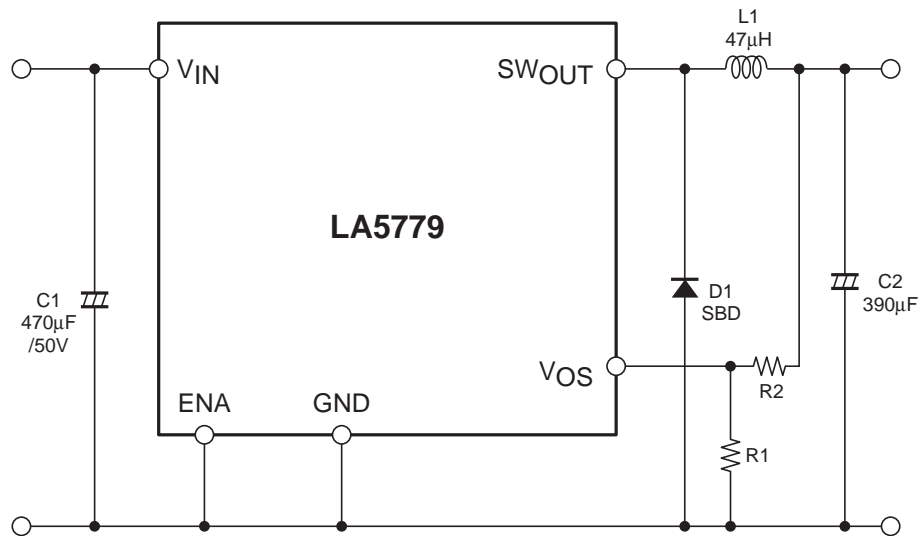
Pin Assignment

(1) V_{IN} (2) SW_{OUT} (3) GND (4) V_{OS} (5) ENA

Block Diagram



Application Circuit Example



Description of Functional Settings

Calculation equation to set the output voltage

This IC controls the switching output so that the V_{OS} pin voltage becomes 1.23V (typ).

The equation to set the output voltage is as follows:

$$V_O = \left(1 + \frac{R_2}{R_1}\right) \times 1.23V(\text{typ})$$

The V_{OS} pin has the inrush current of 1μA (typ). Therefore, the error becomes larger when R1 and R2 resistance values are large.

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