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LA5797MC

Monolithic Linear IC

Charge Pump Step-up Power Supply for Variable Capacitance Diodes

Overview

The LA5797MC is a charge pump step-up power supply for Variable capacitance diodes.

Features

- By using charge pump, no coils are necessary.
- Time-base generator (140kHz) incorporated.
- Thermal shutdown circuit incorporated.

Specifications

Maximum Ratings at $T_a = 25^\circ\text{C}$

Parameter	Symbol	Conditions	Ratings	Unit
Input voltage	$V_{IN\ max}$		30	V
Allowable power dissipation	$P_d\ max$	Mounted on the specified board. *	0.75	W
Operating temperature	T_{opr}		-25 to +90	$^\circ\text{C}$
Storage temperature	T_{stg}		-40 to +150	$^\circ\text{C}$
Junction temperature	T_{jmax}		150	$^\circ\text{C}$

* Specified board: 114.3mm × 76.1mm × 1.6mm, glass epoxy board.

Caution 1) Absolute maximum ratings represent the value which cannot be exceeded for any length of time.

Caution 2) Even when the device is used within the range of absolute maximum ratings, as a result of continuous usage under high temperature, high current, high voltage, or drastic temperature change, the reliability of the IC may be degraded. Please contact us for the further details.

Stresses exceeding Maximum Ratings may damage the device. Maximum Ratings are stress ratings only. Functional operation above the Recommended Operating Conditions is not implied. Extended exposure to stresses above the Recommended Operating Conditions may affect device reliability.

Recommended Operating Conditions at $T_a = 25^\circ\text{C}$

Parameter	Symbol	Conditions	Ratings	Unit
Input voltage range	V_{IN}		7.5 to 28	V

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Electrical Characteristics at $T_a = 25^\circ\text{C}$

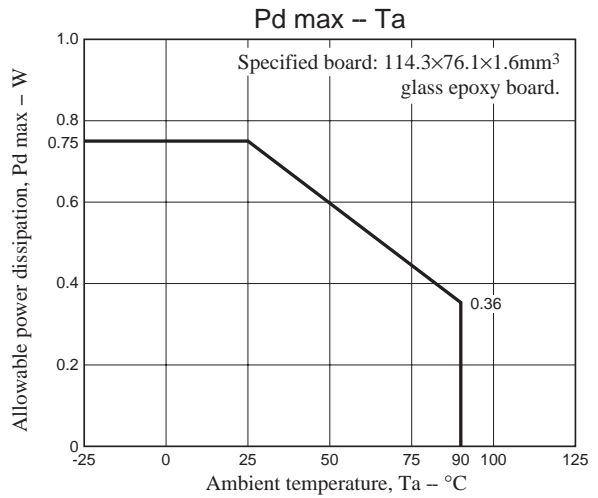
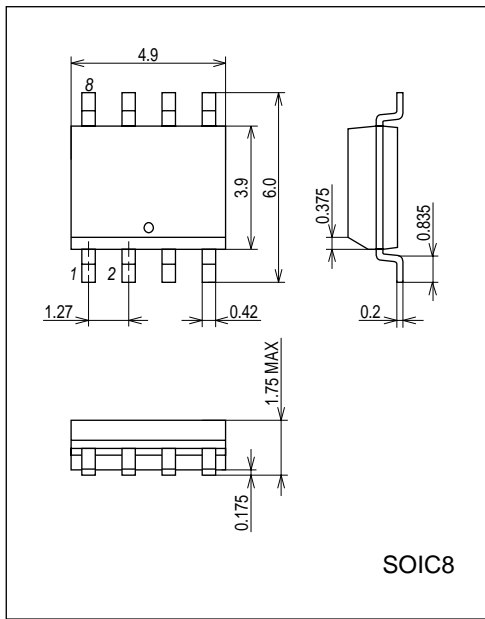
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Reference voltage	VFB	$V_{IN} = 15\text{V}$, $I_O = 5\text{mA}$	1.189	1.225	1.261	V
Switching frequency	f	$V_{IN} = 7.5\text{V}$ to 28V	112	140	168	kHz
Thermal shutdown operating temperature	TSD	Designed target value. *		165		$^\circ\text{C}$
Thermal shutdown Hysteresis width	ΔTSD	Designed target value. *		15		$^\circ\text{C}$

* Design target value: No measurement made.

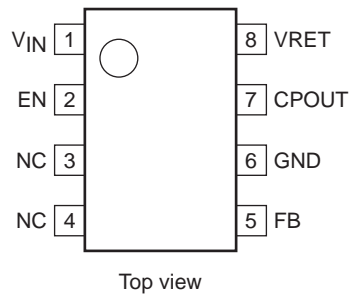
Package Dimensions

unit : mm (typ)

3424

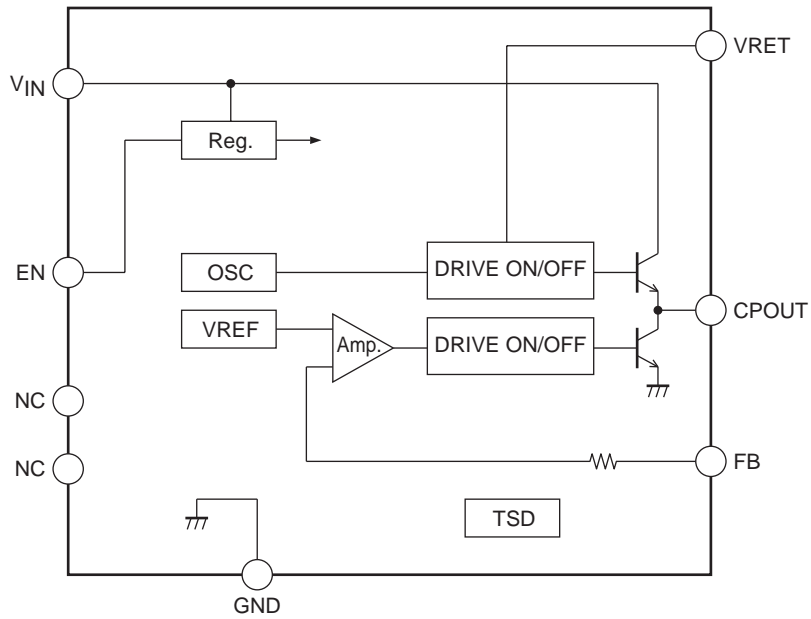


Pin Assignment



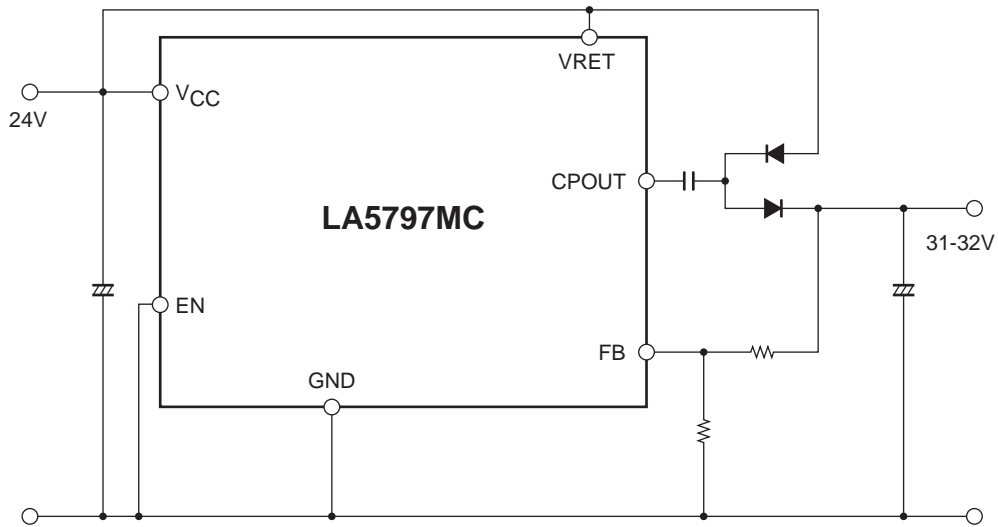
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Block Diagram



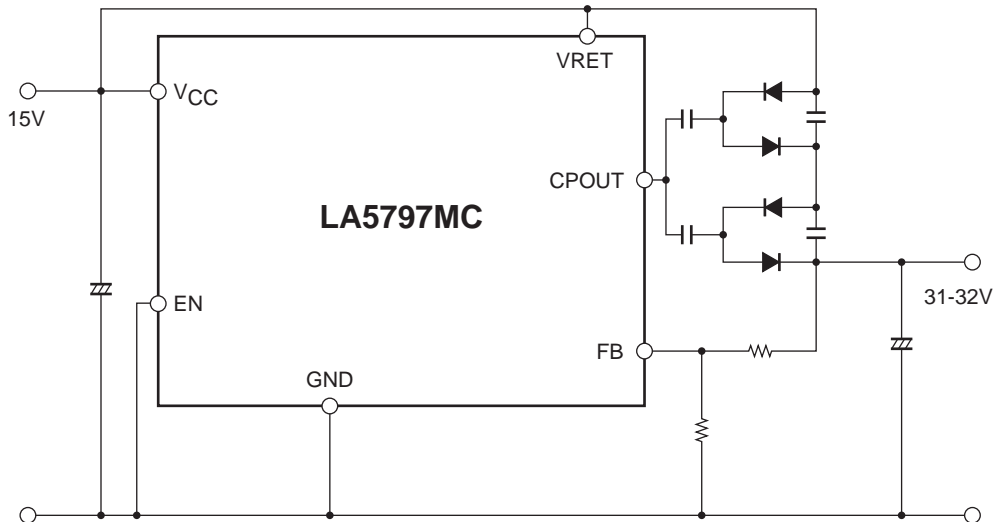
Application Circuit Example

External circuit diagram ($V_{CC} = 24V$)



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External circuit diagram ($V_{CC} = 15V$)



Note : The IC is made active when the EN pin is pulled down to GND. The charge pump operation is stopped when the EN pin is pulled up to V_{IN} .

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