



### Description

HY491 of regulators provides all the active functions for step-down (buck) and step-up (boost) switching regulator, and drives 500mA load with excellent line and load regulation.

Regulators are simple to use and require a minimum number of external components. Features include internal frequency compensation and an adjustable-frequency oscillator.

HY491 performs well with standard inductors from several manufacturers and simplifying the design of switch mode power supplies. Easy to use an external driver to increase output current. Available in a 6-lead SOT-23 surface mount package.

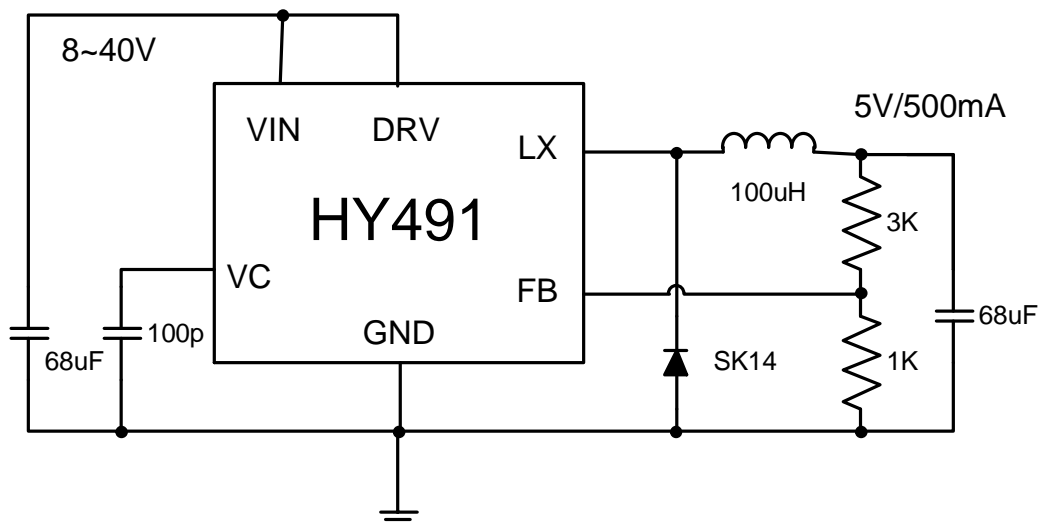
### Features

- n Only 7 external components required.
- n Operation from 3V to 40V.
- n Low standby current.
- n Output switching current to 500mA.
- n SOT-23 6-pin small package..
- n Operation frequency up to 180KHz.
- n Automotive qualified according AEC-Q100

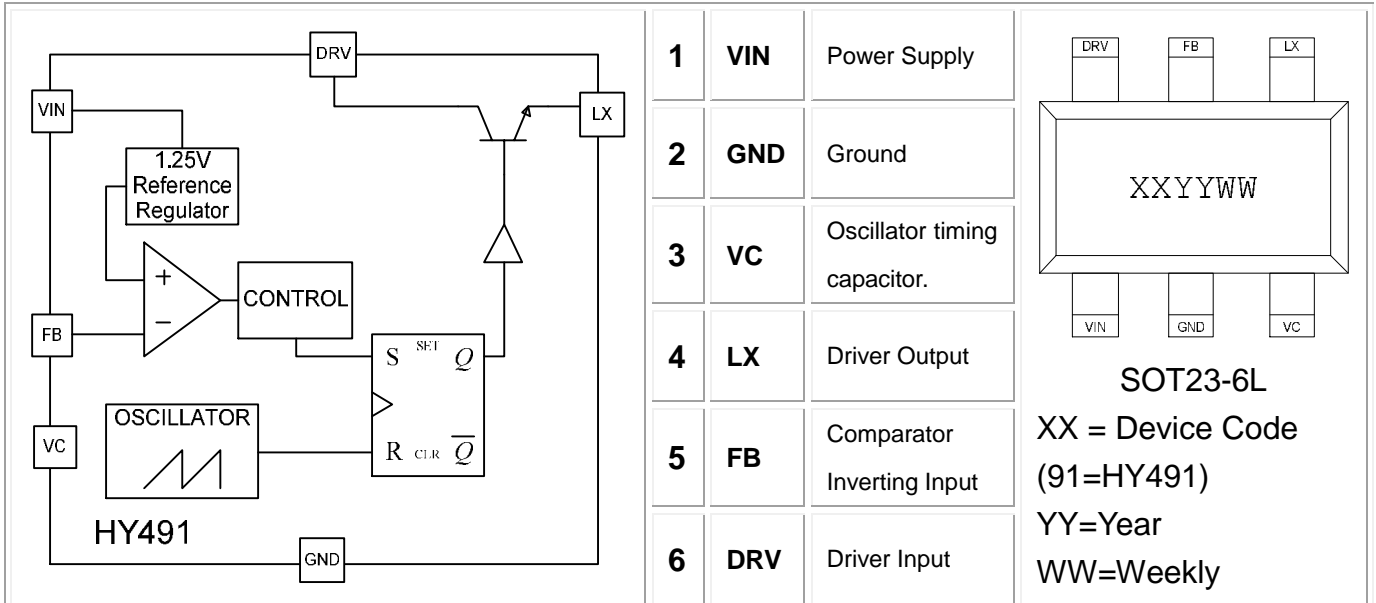
### Applications

- n DC/DC Application.
- n Battery chargers.
- n Car chargers.

### Typical Applications Circuit



### SCHEMATIC DIAGRAM AND PIN DESCRIPTION



### ABSOLUTE MAXIMUM RATINGS

SYMBOL	PARAMETER	VALUE	UNIT
VIN	Supply Voltage	-0.3 to 40	<b>V</b>
OUT	Output Voltage	-0.3 to 40	<b>V</b>
I <sub>OUT</sub>	Output Current	0.7	<b>A</b>
T <sub>J</sub>	Maximum Junction Temperature	150	°C
T <sub>S</sub>	Storage Temperature	-65 to 150	°C
P <sub>D</sub>	Power Dissipation	Internally limited	<b>W</b>
ESD	ESD Protection HBM	2000	<b>V</b>

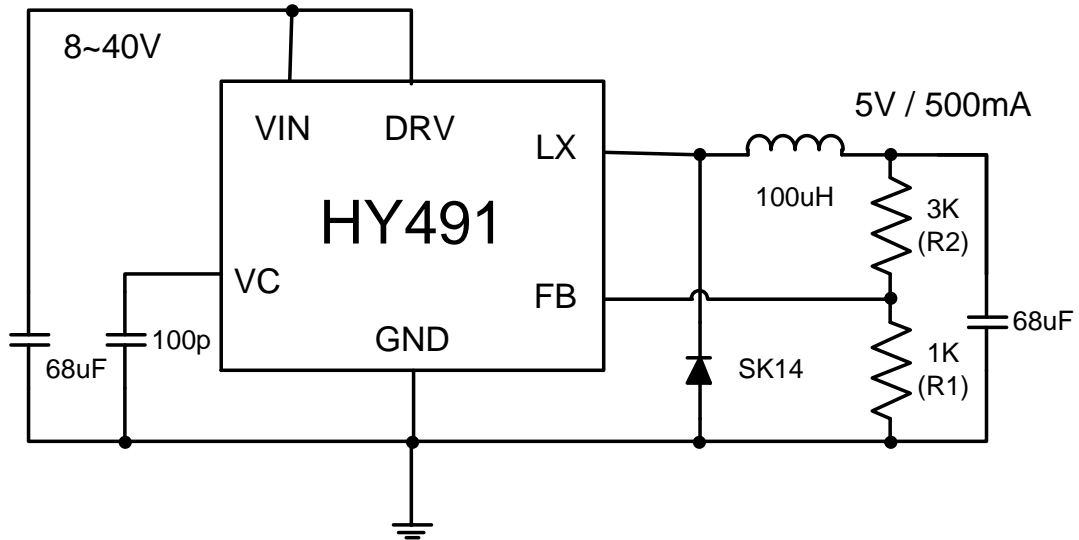
**RECOMMENDED OPERATING CONDITIONS**

SYMBOL	PARAMETER	MIN	MAX	UNIT
V <sub>IN</sub>	Supply Voltage	3	40	V
T <sub>A</sub>	Ambient Temperature	-40	85	°C

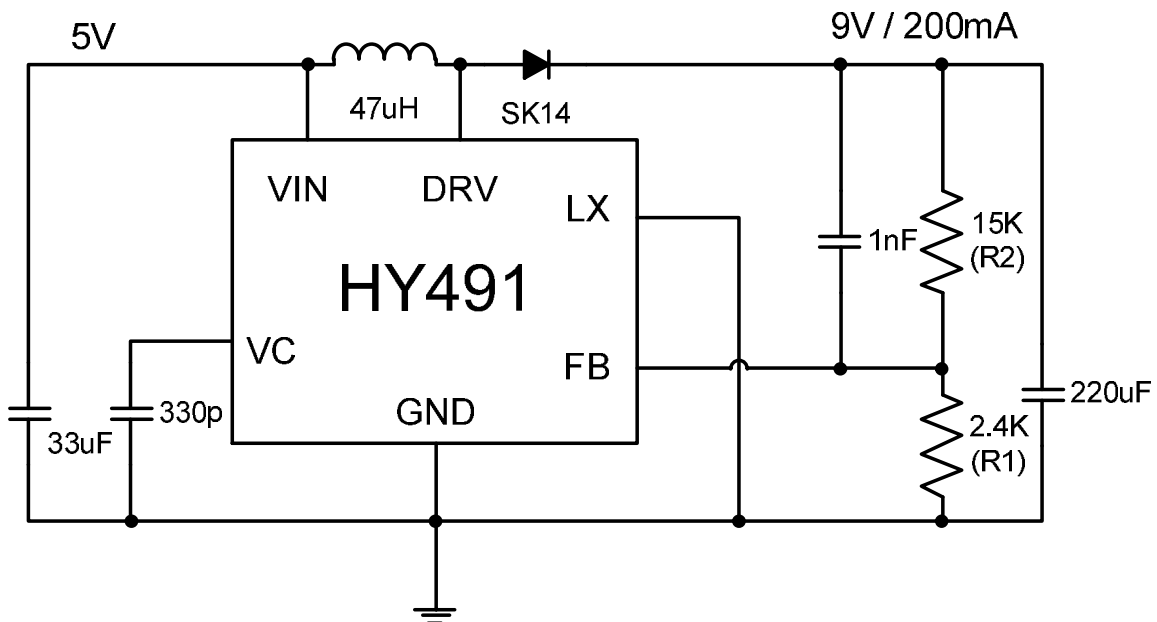
**ELECTRICAL CHARACTERISTICS**(V<sub>IN</sub> = 5V, T<sub>A</sub> = 25°C, UNLESS OTHERWISE SPECIFIED)

PARAMETER	SYMBOL	CONDITION	MIN	TYP	MAX	UNIT
Supply Current	I <sub>CC</sub>	V <sub>IN</sub> =5V~40V, C <sub>T</sub> =100pF			4	mA
Output Off Current	I <sub>OFF</sub>	V <sub>DRV</sub> - V <sub>LX</sub> = 40V		0.01	100	uA
Feedback Voltage	V <sub>FB</sub>	T <sub>A</sub> = 25°C	1.225	1.25	1.275	V
Oscillator Charge Current	I <sub>CHG</sub>	V <sub>IN</sub> =5V~40V, T <sub>A</sub> = 25°C		38		uA
Oscillator Discharge Current	I <sub>DCHG</sub>	V <sub>IN</sub> =5V~40V, T <sub>A</sub> = 25°C		240		uA
Saturation Voltage	V <sub>SAT</sub>	I <sub>SW</sub> = 0.5A		1.0	1.3	V

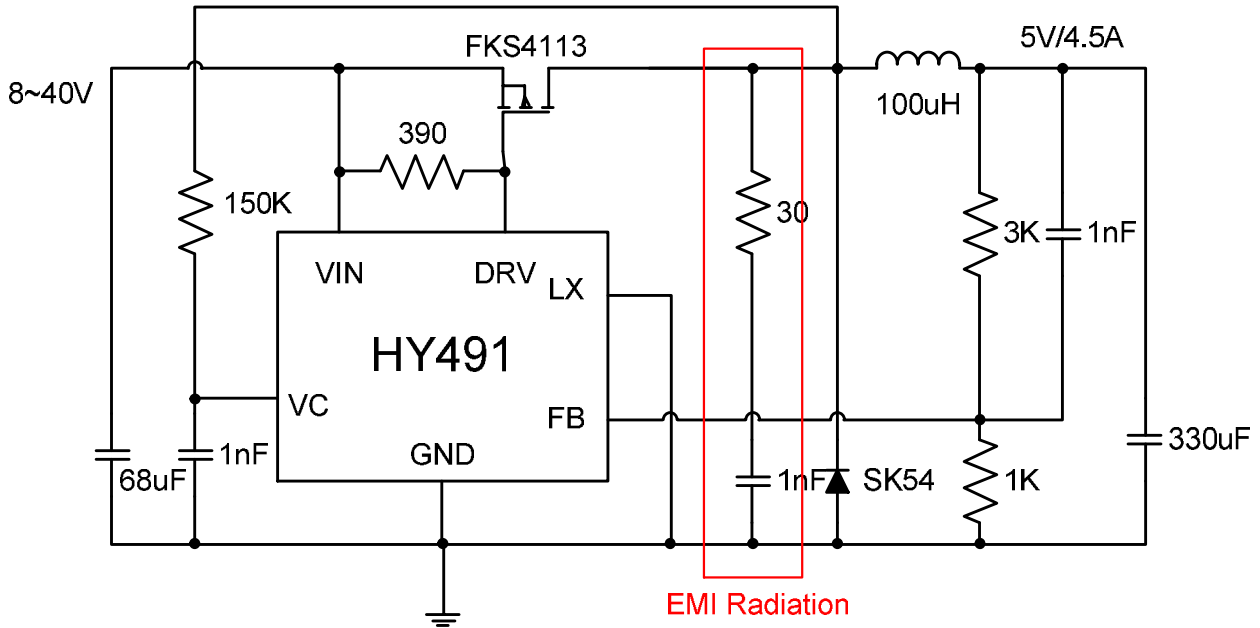
### APPLICATION CIRCUIT



Step Down Converter  
 $V_{OUT} = 1.25 * (R2+R1)/R1$  (V).

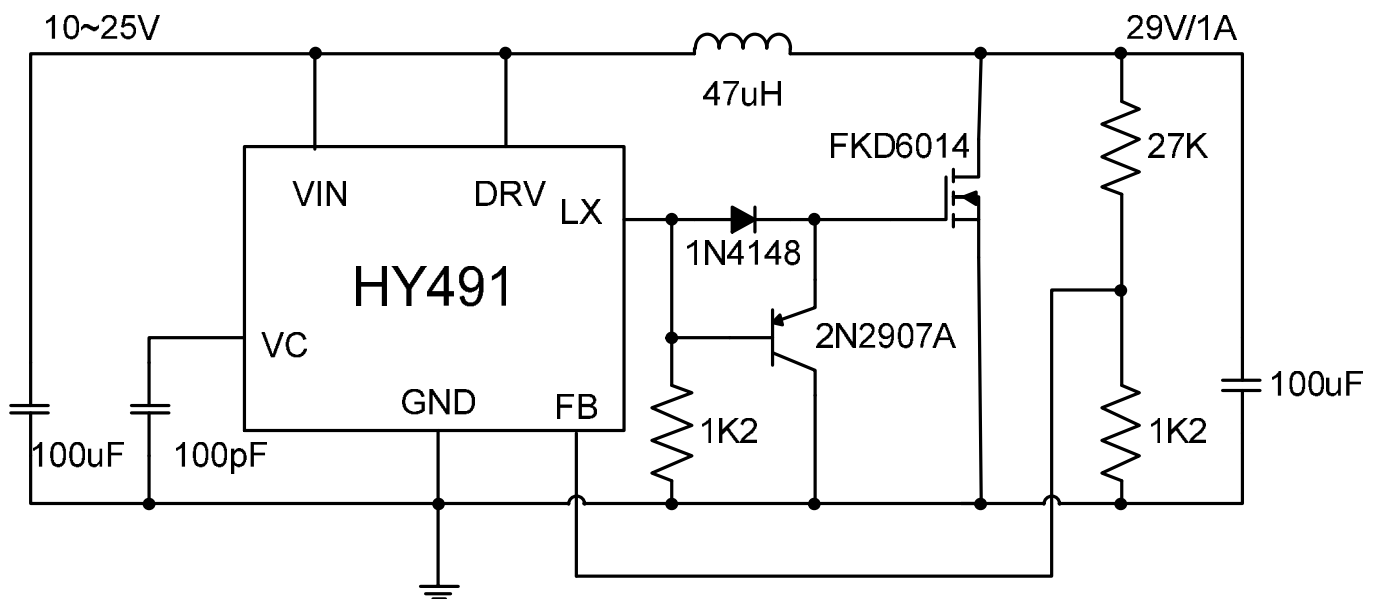


Step Up Converter  
 $V_{OUT} = 1.25 * (R2+R1)/R1$  (V).



**Step Down with External MOSFET**

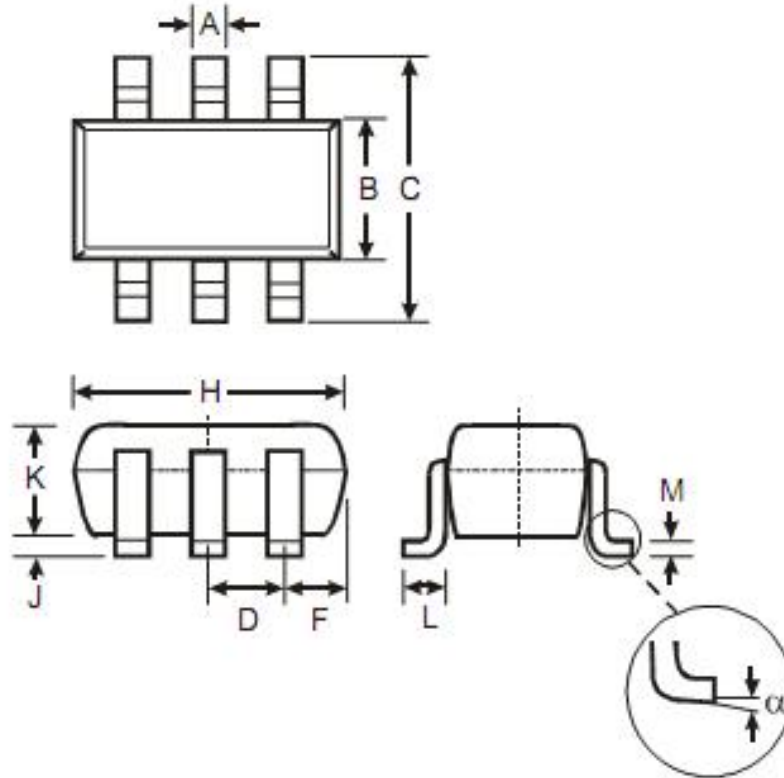
$$V_{OUT} = 1.25 * (R_2 + R_1) / R_1 (V).$$



**Step Up with External MOSFET**

$$V_{OUT} = 1.25 * (R_2 + R_1) / R_1 (V).$$

### Package Outline Dimensions



<b>SOT-26</b>			
<b>Dim</b>	<b>Min</b>	<b>Max</b>	<b>Typ</b>
<b>A</b>	0.35	0.50	0.38
<b>B</b>	1.50	1.70	1.60
<b>C</b>	2.70	3.00	2.80
<b>D</b>	—	—	0.95
<b>F</b>	—	—	—
<b>H</b>	2.90	3.10	3.00
<b>J</b>	0.013	0.10	0.05
<b>K</b>	1.00	1.30	1.10
<b>L</b>	0.35	0.55	0.40
<b>M</b>	0.10	0.20	0.15
<b><math>\alpha</math></b>	0°	8°	—
<b>All Dimensions in mm</b>			



**ORDERING INFORMATION**

**HY491** **ST26** **R**

Circuit Type

Package Type  
ST26 : SOT23-6

Shipping  
R: Tape & Reel

ORDERING REMEMBER	OUTPUT VOLTAGE	PACKAGE	SHIPPING
HY491ST26R	ADJUSTABLE	SOT23-6L	3,000 Units/ Tape & Reel