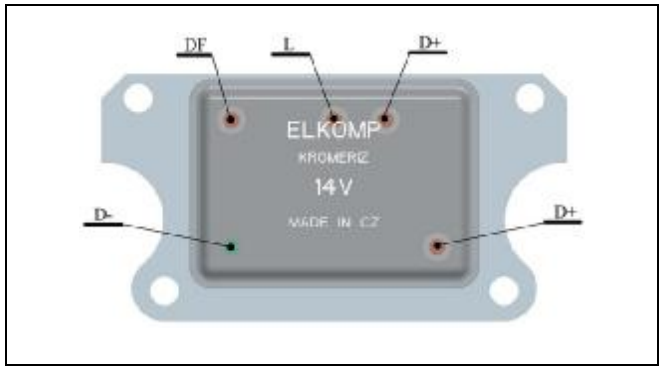
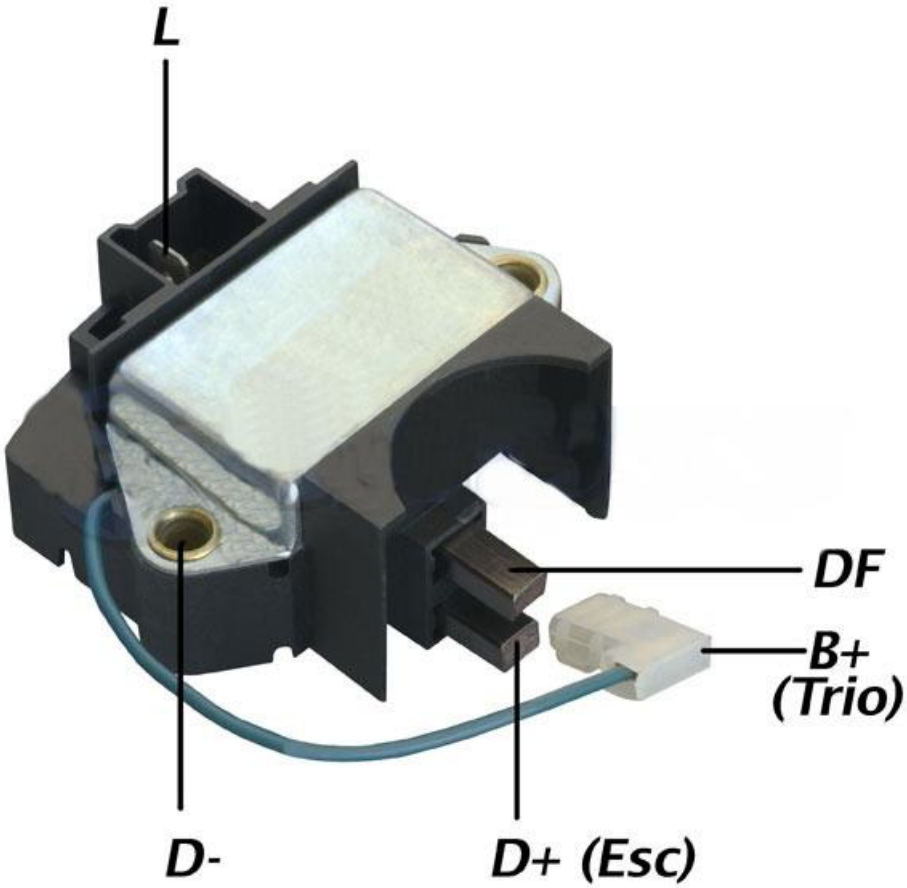
Monofunctional regulator E4-14V– 859 405 090 0608

Replaces Valeo- No China

Feature summary:

- No external components
- Precise temperature coefficient
- Precise regulated voltage
- High output current
- Short circuit protected
- Reverse battery protection
- + 80V load dump protection
- Low energy spike protection
- Thermal shutdown
- Very low start up voltage



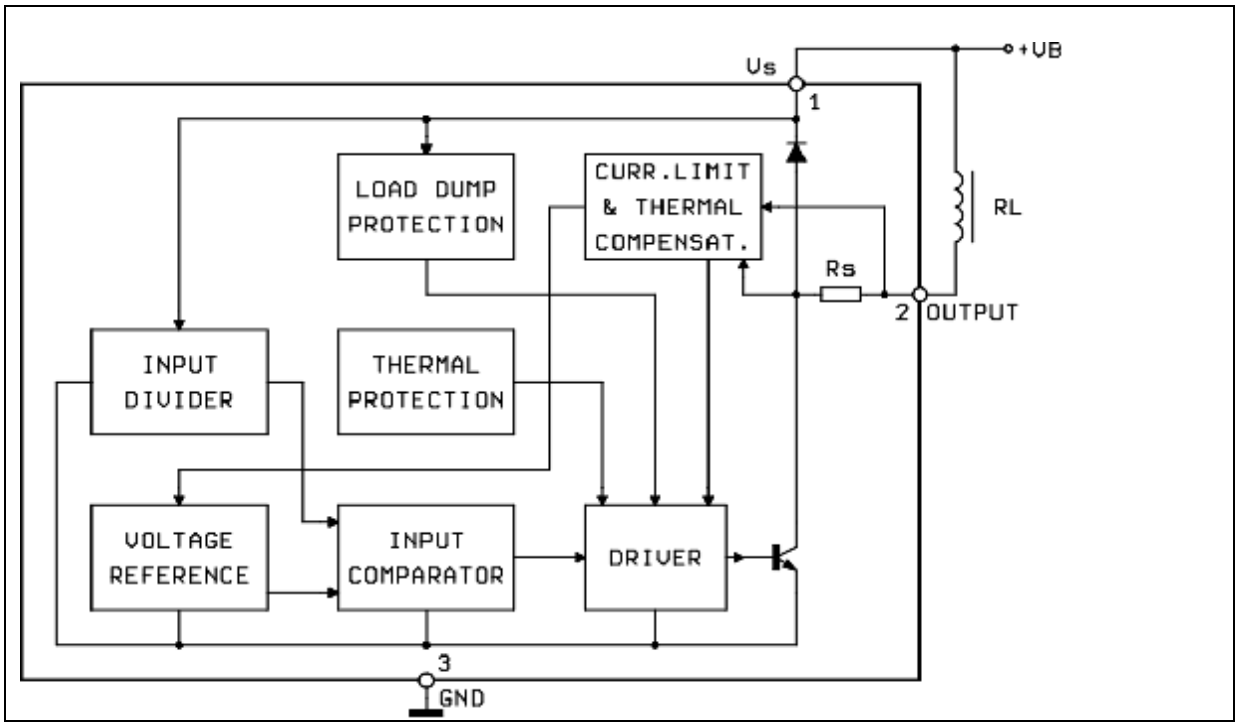


Application: Peugeot

Description:

The devices are a "single function" self-oscillating voltage regulator for car alternators. Integrating both the control section and the output power stage on a single chip, the devices require no external components, reducing significantly the cost of the system and increasing reliability.

Block diagram:



Electrical specifications

Absolute maximum ratings

Symbol	Parameter	Value	Unit
V_S	Transient Overvoltage: Load Dump : 5ms ≤ T_{rise} ≤ 10ms, τfFall Time Constant ≤ 100ms, Rsource ≥ 0.5Ω	80	V
I_{clamp}	Current into Low Energy Clamping Zener (T_{rise}= 5ms ; T_{decay} ≤ 2ms ; duty cycle ≤ 5%)	100	mA
I_{out}	Maximum Output Current	5.5	A
T_j, T_{stg}	Junction and Storage Temperature Range	– 55 to + 150	°C

Teplotní údaje

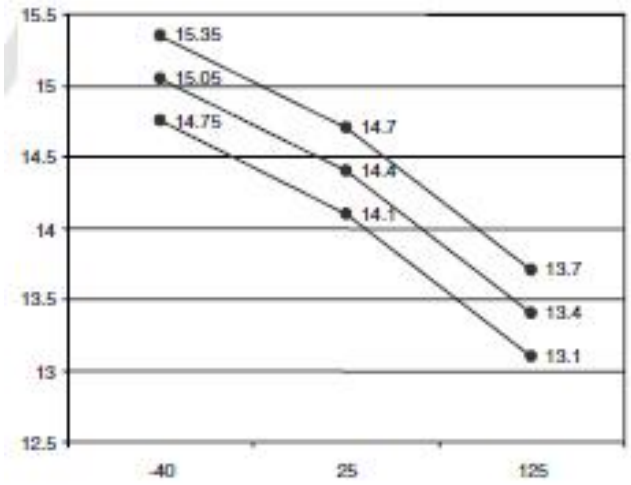
Symbol	Parameter	Value	Unit
$R_{th\ i\text{-}case}$	Thermal Resistance Junction-case Max.	3	°C/W

Electrical specifications

(– 40 °C ≤ T_J ≤ 125 °C, unless otherwise noted)

Symbol	Parameter	Test conditions	Min.	Typical	Max.	Unit
V_r	Voltage regulation	T_j = –40°C	14.75	15.05	15.35	V
		T_j = 25°C	14.1	14.4	14.7	V
		T_j = 125°C	13.1	13.4	13.7	V
C_T	Temperature coeff. of the regulation voltage			-10		mV/°C
eC_T	Error on nominal temperature coeff.			± 30		%
V_r	Load regulation	0.1 I_n < I_{alt} < 0.9 I_n		250		mV
V_{su}	Control circuit minimum start up voltage	Measured at Supply Pin		2	3	V
V_{sd}	Shutdown voltage (dump protection threshold)			22		V
$V_{sat\ 1}$	Output saturation voltage	I_{field} = 4 A_p		1.2	2	V
$V_{sat\ 2}$	Start up saturation voltage	I_{field} = 200 mA		0.7	1	V
I_q	Quiescent current	Field Off		20		mA
I_s	Supply current	I_{field} = 4 A_p		50		mA
I_{fs}	Field pin sink current	Field Off Field Pin @ 16 V			5	mA
$V_{1\ CLAMP}$	Low energy clamping zener Voltage	I_{clamp} = 50 mA		120		V
f_{sw}	Switching frequency	01 I_n < I_{alt} < 0.9 I_n	30		1000	Hz

Set-point voltage versus case temperature



Application circuit