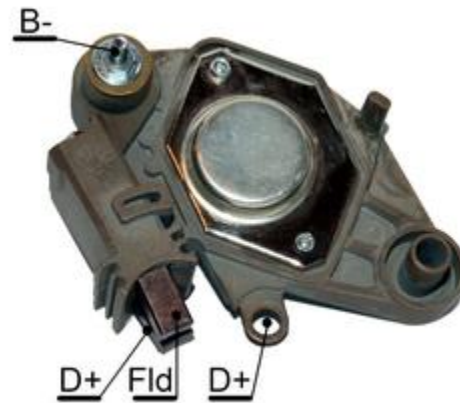


Monofunctional regulator E15F-14V for alternators up to 70A

Monofunctional regulator E15F-14V for alternators up to 70A

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



E15F-14V Replaces Valeo

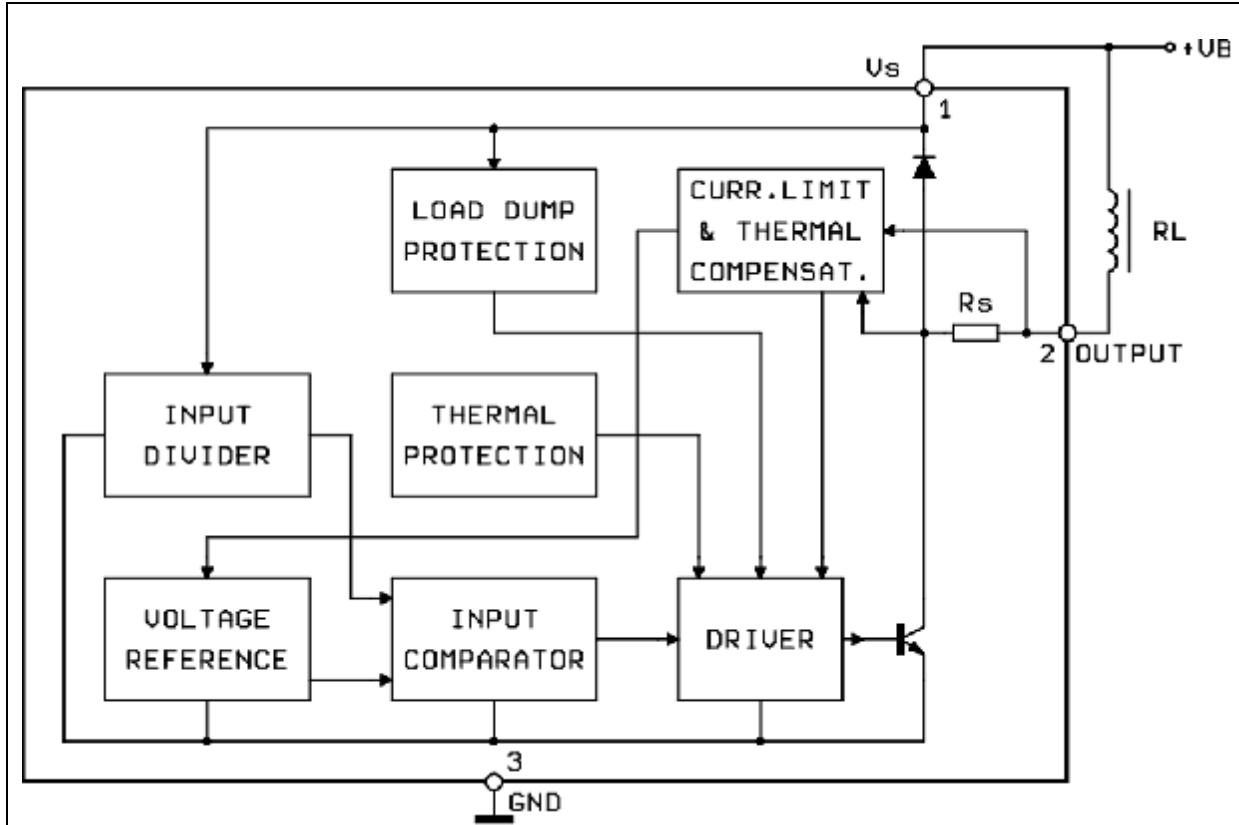
Original code number:	2521335; 2541392/404/433/493/666/667/682/701/702/721/800/972; 2590768; 592791/797/800/801/910/911; 593131/133/137/139/258/301/312/326/350; 9RC6065; YM1940G/1949/1950/3953/6555/6952/6955/9980; YV1965/1965T/1969T/3970H.
Application:	AUDI: 100, 80, A4, A6, Cabriolet, Coupe; CITRÖEN: ZX 1.1, 1.4; Saxo 1.0, 1.1, 1.4; Xsara 1.4; Berlingo 1.1; PEUGEOT: 106 1.1, 1.3, 1.4, 1.6, Xsi, Rallye, 306 1.1, 1.4, 1.6; 405 1.4, 1.9, Partner 1.1, 1.4; SEAT: Arosa, Ibiza, Cordoba, Inca, Toledo; SKODA: Felicia; VW: Caddy, Corrado, Golf 1.4, 1.6, 1.8, 1.9d, 2.0, Passat, Polo, Vento 1.4, 1.6, 1.8
Alternator:	2542101, A11VI8/ I23/ I26/ I36/ I45/ I49/ I57/ I61/ I64/ I85/ I93, A13VI100/ 104/ 105/ 106/ 121/ 123/ 124/ 125/ 132/ 135/ 141/ 155/ 156/ 164, A13VI184 / 185/ 186/ 189/ 191/ 198/ 209/ 212/ 213/ 216/ 218 / 22/ 220/ 222 / 231/ 24/ 258/ 260/ 261/ 264/ 265/ 266/ 267/ 268/ 274/ 280/ 281/ 31/ 40/ 41/ 44/ 45/ 52/ 57/ 60/ 67/ 69/ 70/ 71/ 74/ 75/ 81/ 85/ 94/ 96/ 99, A14VI14, A14VI31; VOLKSWAGEN: 021-903-023N/ 025F, 030-903-023E/ 023F, 037-903-023G/ 023Q, 058-903-016E, 078-903-015B/ 015D, 078-903-017B

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.

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Block diagram:



Electrical specifications

Absolute maximum ratings

Symbol	Parameter	Value	Unit
V_S	Transient Overtoltage: Load Dump : $5\text{ms} \leq T_{\text{rise}} \leq 10\text{ms}$, rFall Time Constant $\leq 100\text{ms}$, $R_{\text{source}} \geq 0.5\Omega$	80	V
I_{clamp}	Current into Low Energy Clamping Zener ($T_{\text{rise}} = 5\text{ms}$; $T_{\text{decay}} \leq 2\text{ms}$; duty cycle $\leq 5\%$)	100	mA
I_{out}	Maximum Output Current	5.5	A
T_J, T_{stg}	Junction and Storage Temperature Range	- 55 to + 150	$^{\circ}\text{C}$

Thermal data

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

Electrical specifications

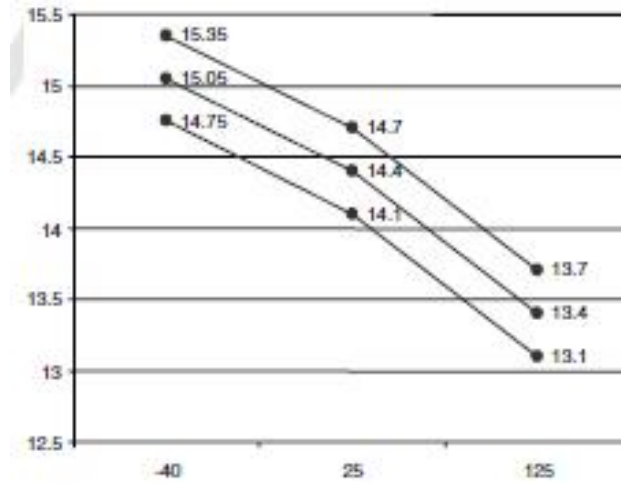
($-40\text{ }^{\circ}\text{C} \leq T_J \leq 125\text{ }^{\circ}\text{C}$, unless otherwise noted)

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Symbol	Parameter	Test conditions	Min.	Typ.	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	0.1 I _n < I _{alt} < 0.9 I _n	30		1000	Hz

Set-point voltage versus case temperature

Monofunctional regulator E15F-14V for alternators up to 70A



Application circuit

