

Monofunction regulator E13-28V

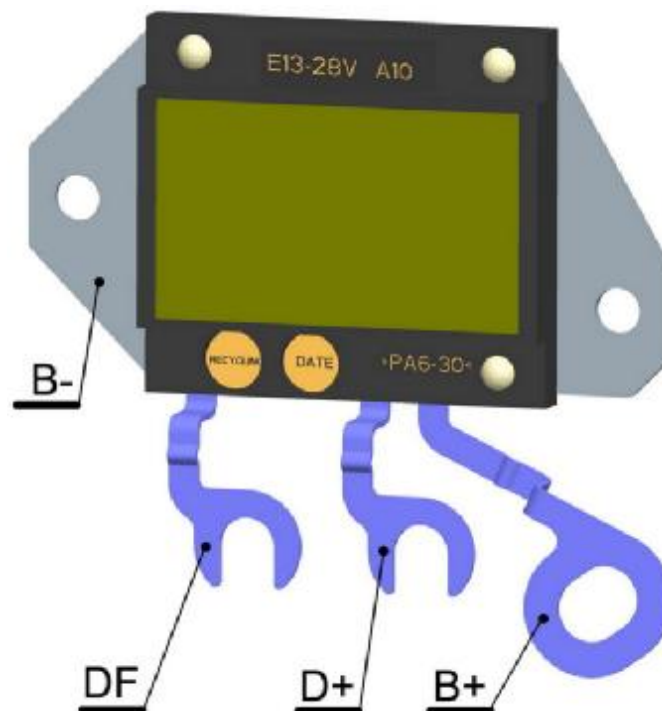
Monofunction regulator E13-28V

Feature summary:

- Precise temperature coefficient
- Precise regulated voltage
- High output current
- Short circuit protected
- + 80V load dump protection
- Low energy spike protection
- Very low start up voltage
- C = 2 μ 2/100V

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.



Alternator: Radiovolna T98.3701

Application: MMZ

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Electrical specifications

Absolute maximum ratings

Symbol	Parameter	Value	Unit
V _S	Transient Overvoltage: Load Dump : 5ms ≤ T _{rise} ≤ 10ms, rFall Time Constant ≤ 200ms, R _{source} ≥ 0.5Ω	150	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

Thermal data

Symbol	Parameter	Value	Unit
R _{th j-case}	Thermal Resistance Junction-case Max.	3	°C/W

Electrical specifications

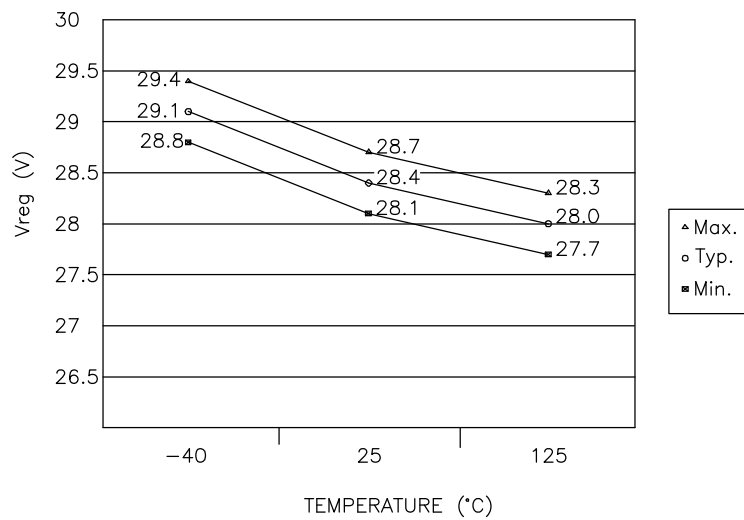
(- 40 °C ≤ T_J ≤ 125 °C, unless otherwise noted)

Symbol	Parameter	Test conditions	Min.	Typ.	Max.	Unit
V _r	Voltage regulation	T _J = -40°C	28.8	29.1	29.4	V
		T _J = 25°C	28.1	28.4	28.7	V
		T _J = 125°C	27.7	28.0	28.3	V
C _T	Temperature coeff. of the regulation voltage			-10		mV/°C
e _{CT}	Error on nominal temperature coeff.			± 30		%
V _r	Load regulation	0.1 I _n < I _{ait} < 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)			39		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

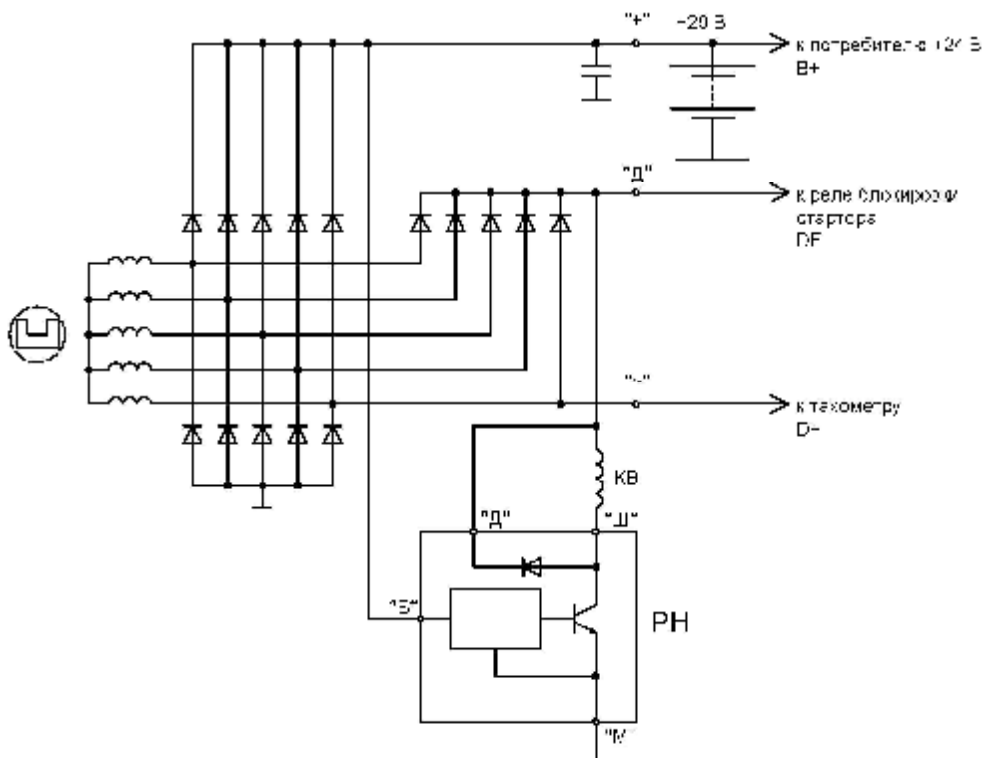
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I_s	Supply current	$I_{field} = 4 A_p$		50		mA
I_{fs}	Field pin sink current	Field Off Field Pin @ 16 V			5	mA
$V_1 CLAMP$	Low energy clamping zener Voltage	$I_{clamp} = 50 mA$		120		V
f_{sw}	Switching frequency	$0.1 I_n < I_{alt} < 0.9 I_n$	30		1000	Hz

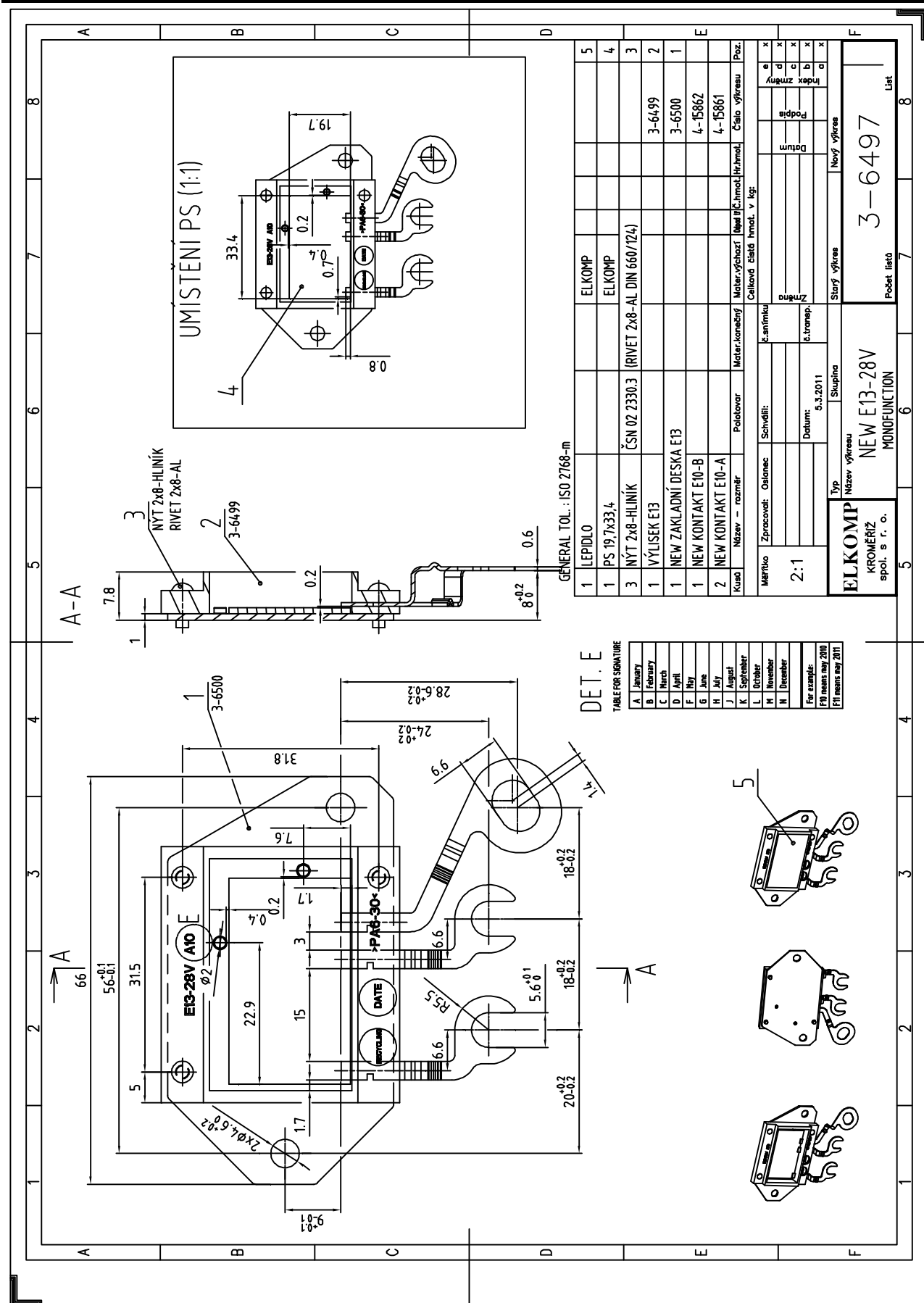
Set-point voltage versus case temperature



Application circuit



Monofunction regulator E13-28V



5	ELKOMP				
4	ELKOMP				
3	CSN 02 2330.3 (RIVET 2x8-AL DIN 660/124)				
2	3-6499				
1	3-6500				
E	4-15862				
	4-15861				

Kusů	Název - rozměr	Polobovar	Materialit	Materialit	Mater.výchoz	Úhel / Č. hmot.	Hr.hmot.	Číslo výkresu	Poz.
	Celková část hmot. v kg:								

2:1	Mřítko	Zpracoval:	Oskanec	Schválil:		Č. analýzy			
						Č. trestep.			

ELKOMP		Typ	Skupina
KROMĚŘÍŽ		Název výkresu	
spol. s r. o.		NEW E13-28V	
		MONOFUNCTION	
		Starý výkres	
		Nový výkres	3-6497
		Počet listů	8
		Liet	

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TABLE FOR SIGNATURE

A	January
B	February
C	March
D	April
E	May
F	June
G	July
H	August
I	September
J	October
K	November
L	December

For example:
F11 means may 2011
F11 means may 2011

