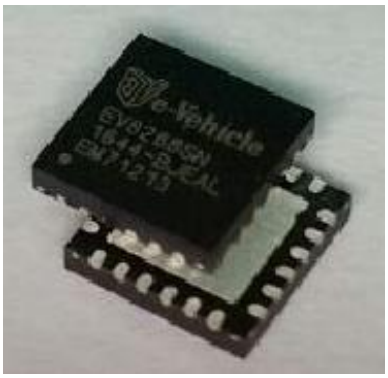
Alternator Voltage Regulator Control IC

1. Features

- **For 12V regulator system**
- **Miniaturized packages，mQFN 24 / 5*5 mm**
- **Build-in charge pump, both high-side & low-side drive**
- **Load Response Delay (LRC) : 2.5 / 5.0 / 10 seconds and OFF / Half / Full range function**
- **Soft Start (pre-excitation) function**
- **C- grounding support**
- **Field / Lamp / Choke short circuit protection**
- **Remote voltage feedback and phase out detection**
- **Low and high voltage detection and alarm**
- **Temperature coefficient compensation and overtemperature protection**

mQFN 24 Package

(Top / Bottom View)



2. Electrical Maximum Ratings

ITEM	PARAMETER	SYMBOLS	Rating	UNITS
2.1	Power Supply Voltage	V_{Bmax}	20	V
2.2	Power Supply Reverse	V_{Brev}	-2.5	V
2.3	Power Supply Current	I_{Bmax}	200	mA
2.4	Ground Current	$\|I_{GND}\|$	200	mA
2.5	Analog Ground Current	$\|I_{AGND}\|$	100	mA
2.6	Operating Ambient Temperature	T_{op}	-40~150	℃
2.7	Storage Temperature	T_{stg}	-50~150	℃
2.8	Power Dissipation	P_{tot}	0.5	W

3. Electrical Characteristics

ITEM	CHARACTERISTICS	SYMBOLS	MIN.	TYP.	MAX.	UNITS
3.1	12V System Voltage	V_{sys}	10	14.5	---	V
3.2	Temperature Coefficient	T_c	---	-7	---	mV/℃
3.3	Ignition Voltage	V_{IG}	2	---	18	V
		V_{BPLUS}	8.5	---	20	V
3.4	Phase Detection	P_{DC}	1.1	---	---	V
3.5	S-open Warning	$V_{RS\text{-}open}$	---	0.3	---	V

4. PIN Descriptions (mQFN-24)

PIN	SYMBOL	INPUT/OUTPUT	DESCRIPTION
1	GND	Ground	Power ground
2	RS	Input	Remote voltage sense
3	LS	Input	Local voltage sense
4	C_CONTROL	Input	C terminal control
5	PHASE	Input	Phase voltage sense
6	OSC_ADJ	Shunt	System frequency adjustment
7	DVDD33	Output	3.3V output
8	S_DB0	Input	PWM frequency regulation
9	S_DB1	Input	PWM frequency regulation
10	LRC_MODE2	Input	LRC regulation
11	TEST	Input	IC test , suggest grounding
12	LRC_MODE1	Input	LRC regulation
13	LRC_MODE0	Input	LRC regulation
14	CHARGE_PUMP	Output	Charge pump terminal
15	GND	Ground	Power ground
16	VD	Input	MOSFET Drain
17	VG	Output	MOSFET Gate
18	VS	Input	MOSFET Source
19	LAMP_DRV	Open-Drain	Lamp driver
20	IG	Input	IC power ON
21	BPLUS	Power	Power input
22	AUX_DRV	Open-Drain	Auxiliary power
23	DFM	Open-Drain	DFM terminal
24	VCC_OUT	Output	IC VCC terminal