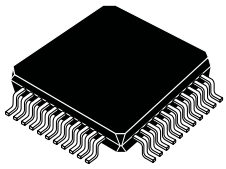
L9912L

12 V Vehicle network conform car alternator regulator IC with LIN interface

Data brief



TQFP44 (10x10x1.0 mm exp. pad down)

GAPG1203151058PS

Features

- System in package smart power alternator regulator and 8-bit microcontroller (non-monolithic approach)
- Protected high/low side field pre-driver for external MOS
- Field short circuit protection
- Regulated voltage driven by ECU (programmable protocol driven)
- Regulated voltage thermally compensated (without protocol)
- Lamp driver (wake up and warning detection)
- Diagnostic via LIN
- 12 V Systems
- Self start function
- Load response control (LRC)
- Field monitor (FM) output
- Thermal shutdown
- Package TQFP44EP 10x10

Description

The L9912L is a controlled multifunctional alternator regulator intended to be used for commercial and agricultural vehicles. It supports 12 V System. The control can be achieved through different communication protocol: LIN, RCV, PCM, C_term, BSS. It is a System-In-Package solution with smart power alternator regulator IC and 8-bit microcontroller (non-monolithic approach). It includes the control section, fault diagnostic circuit which drives a warning lamp, and the protection against short circuits.

This device regulates in close loop the output of an automotive generator by controlling the field winding current by means of a Pulse-Width Modulation (PWM) of an external high side or low side driver at fixed frequency.

Contents

1 Application schematics

Figure 1. Low-side configuration 12 V

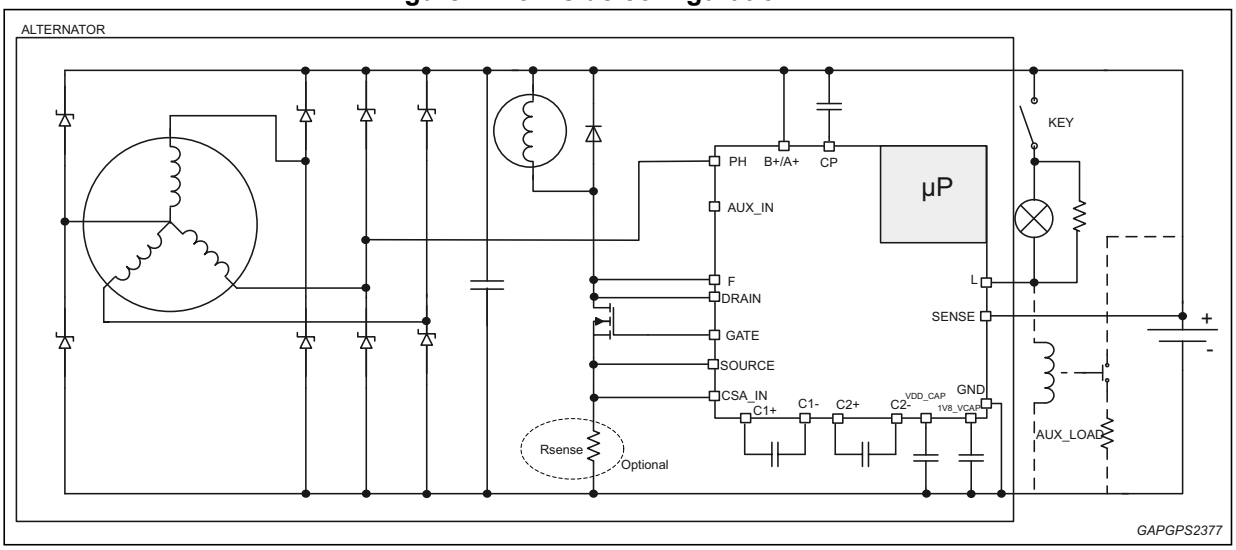
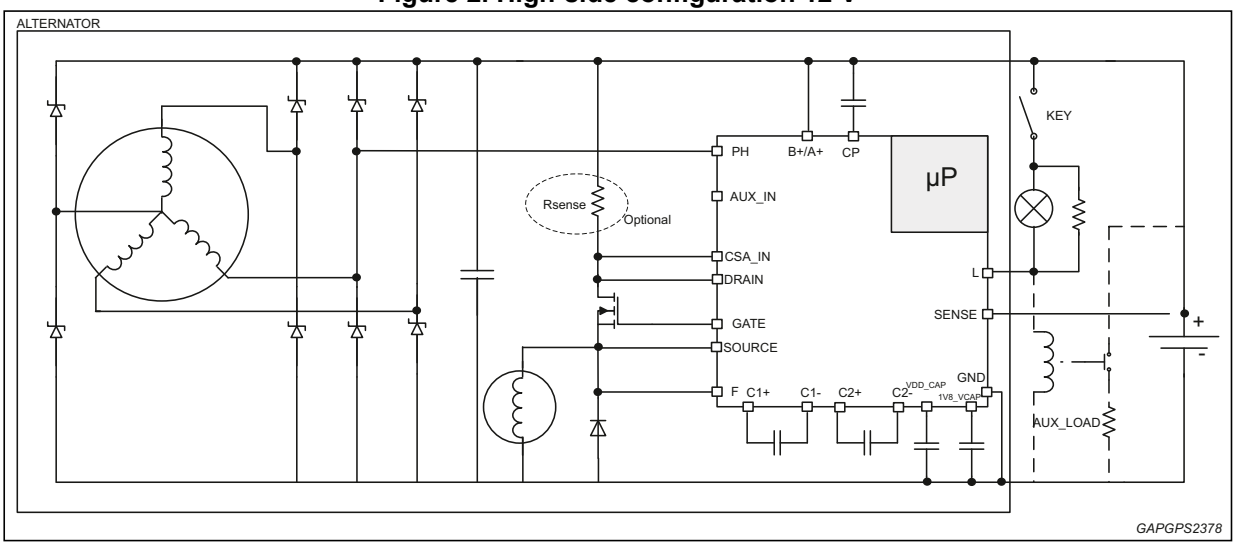


Figure 2. High-side configuration 12 V



2 Package information

In order to meet environmental requirements, ST offers these devices in different grades of ECOPACK® packages, depending on their level of environmental compliance. ECOPACK® specifications, grade definitions and product status are available at: *www.st.com*. ECOPACK® is an ST trademark.

2.1 TQFP44 (10x10x1.0 mm exp. pad down) package information

Figure 3. TQFP44 (10x10x1.0 mm exp. pad down) package outline

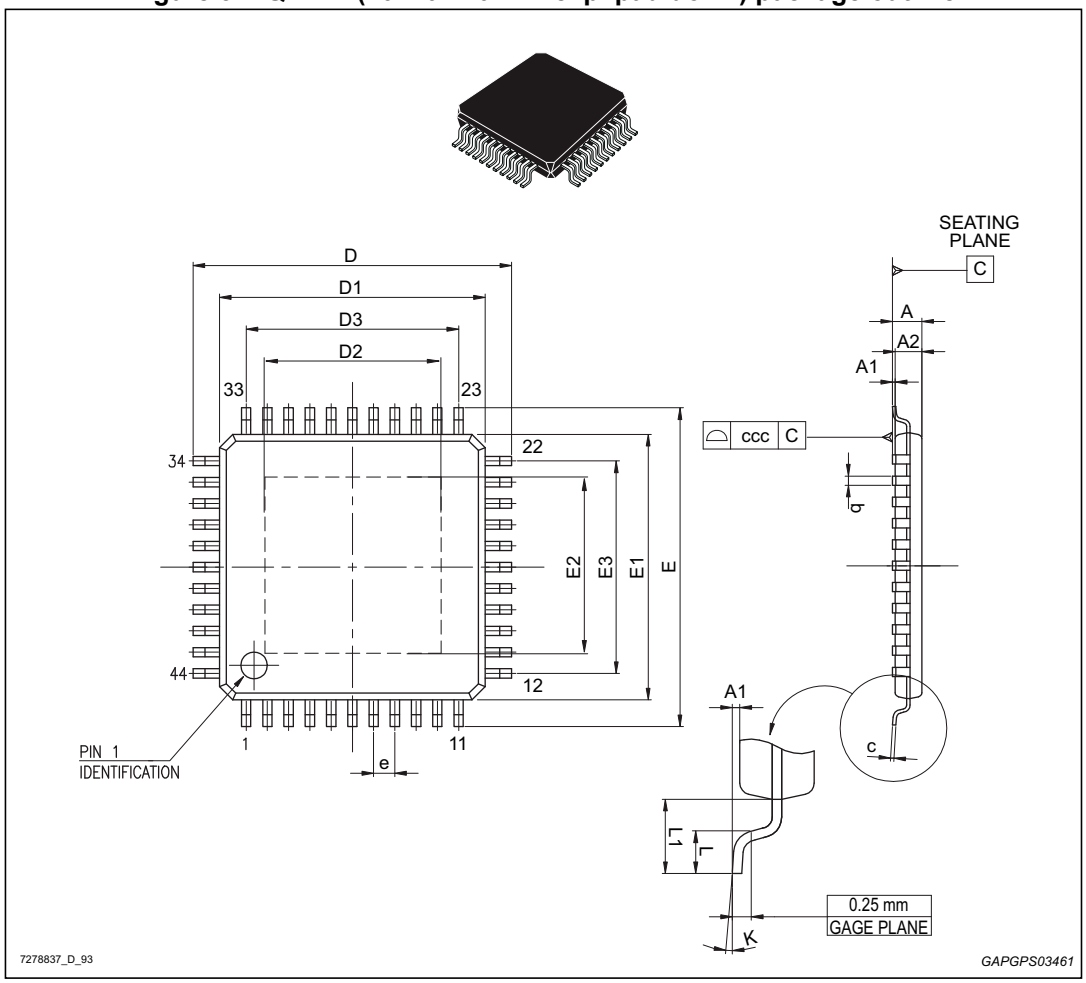


Table 1. TQFP44 (10x10x1.0 mm exp. pad down) package mechanical data

Ref	Dimensions					
	Millimeters			Inches[1]		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	-	-	1.20	-	-	0.047
A1	0.05	-	0.15	0.002	-	0.006
A2	0.95	1.00	1.05	0.037	0.039	0.041
b	0.30	0.37	0.45	0.012	0.015	0.018
c	0.09	-	0.20	0.004	-	0.008
D	11.80	12.00	12.20	0.464	0.472	0.480
D1	9.80	10.00	10.20	0.386	0.394	0.401
D2	5.85	-	6.05	0.230	-	0.238
D3	-	8.00	-	-	0.315	
E	11.80	12.00	12.20	0.464	0.472	0.480
E1	9.80	10.00	10.20	0.386	0.394	0.401
E2	5.85	-	6.05	0.230	-	0.238
E3	-	8.00	-	-	0.315	-
e	-	0.80	-	-	0.031	-
L	0.45	0.60	0.75	0.018	0.024	0.030
L1	-	1.00	-	-	0.039	-
k	0°	3.5°	7°	0°	3.5°	7°
ccc	-	-	0.08	-	-	0.003

1. Values in inches are converted from mm and rounded to 4 decimal digits.

3 Order codes

Table 2. Device summary

Order code	Package	Packing
L9912LTR	TQFP44EP	Tape & Reel

Note: The device is distributed through EBV.

For orders and additional information refer to:

EBV chips

www.ebv.com/epona

4 Revision history

Table 3. Document revision history

Date	Revision	Changes
12-Sep-2014	1	Initial release.
30-Oct-2014	2	Changed title in cover page.
18-Mar-2015	3	Updated *Section 2: Package information*.
18-Jan-2016	4	Updated *Section 3: Order codes on page 6*.