Car Battery Input

Vin typ. 12V
Vin min transient ??? → testing
Vin max. transient 60V

System designed for 4.5V MIN to 60V MAX input transient voltages, not continuous.

Vout limited to max 16V
Typical: Iout 2.1A @ 12V P 25.2W
OR
MAX: Iout 5.5A @ 4.5V

Vin typ. 12V
Vin min transient ??? → testing
Vin max. transient 60V

Vref 1.24V
Kathode 18V, max 20V
worst case: Vin 4.5V @ 5.62A
**Schematic Diagram**

- **Description:**
  - **Schematic Name:** Power_SEPIC.SchDoc
  - **Database:** TIDA-00271
  - **Designed for:**
    - Texas Instruments
  - **Engineer:**
    - Joern Oppenhaeuser
  - **Contact:**
    - [Contact Information]
  - **Sheet Title:**
    - [Sheet Title]
  - **Project Title:**
    - [Project Title]
  - **File:**
    - Power_SEPIC.SchDoc
  - **Mod. Date:**
    - 22-27-2021
  - **Mod. ... the LDO to fixed 3.3V
    - Imax supported 150mA
    - 2.5MHz 8V @ 1A
    - Imax Mosfet 5A (SEPIC!!!)
    - 2.5 MHz 5V @2.5A
    - Imax Mosfet 3A

**Additional Text:**

- **Public Release:**
  - **Rate Card:**
    - [Rate Card]
  - **Svn Rev:**
    - [Version Control]
  - **Status:**
    - Not in version control

**License:**

- **© Texas Instruments**


**INFORMATION**

- SS - OFF for S3
- LDO FB - 3.3V 1.25V regulation
- because of the grade of integrity, you can only choose inductor values from the datasheets.

---

**Texas Instruments**

Engineer: 

Drawn By: 

SVN Rev: 

TIDA-00271
INFORMATION LMD18400

The Data Output pin (pin 8) is biased internally from a 5V regulator which sets the logic 1 output voltage. This pin has no current sourcing capability so any load on this pin will reduce the Logic 1 output voltage and limit the current to a few mA with a 330Ω load.

ERROR is open drain.

A second direct output error flag is for an indication of Thermal Shutdown (pin 17). The shutdown flag provides an immediate indication that the die temperature has reached +175°C and that the drive to all four switches has been removed. The output is pulled up to the internal 5V logic regulator through a small 25 μA current source so use of a buffer on this pin is recommended.

INFORMATION LMD18400

5V switcher: when the output voltage is driven higher than the in voltage, the switch turns off.

R lim is defined to 300mA this means for the 5V switcher 75k.

The limit resistor from the N/A must be adjusted in case of using 5V or 8V the IM380110 5.3 10.11.52 are logic pins 5.95.59.52 have internal pull down resistor.

R select resistor goes HIGH when current sense voltage > 30 mV (20mV/gain) and switches until nINA, RST goes low.

RESET must be tied low or open for correct startup (internal pulldown resistor).

Can be used for the next revision?

In case of EMI problems with INA200Q2 capacitor tie in the INA183 dataset.

resistor)

RESET must be tied low or open for correct startup (internal pulldown resistor) and latches until nINA__RST goes low.

The limit resistor from the INA must be adjusted in case of using 5V or 8V

R lim is defined to 300mA this means for the 5V switcher 75k

TIDA-00271
LIN DRIVER

- NWAKE (High Voltage Wake Up Input)
- NWAKE is a high voltage input used to wake up from sleep mode. NWAKE is usually an input at the application. A low on NWAKE that is asserted longer than the filter time (tNWAKE) results in a local wake-up. NWAKE provides an internal pullup source to VSUP.

LED DRIVER

- LIN DRIVER - Transmit input/output
- LIN - Receive Output
- TXD - Transmit input/output
- RXD - Receive Output
- INHIBIT - switches Vsupply to the pin = 17V
- NWAKE - high voltage input, to wake up from sleep
- EN - Enable input, internal pull down
- TIDA-00271: Remote Camera and Radar Expansion, SAT0074

Texas Instruments' data sheets or similar data sheets may be available at the following web sites:
- http://www.ti.com/ds

© Texas Instruments
default setting of the 914 is everything OFF

OV is using GPIO3 and GPIO4 for clock too. GPIO1 and GPIO2 are not shown

GPIOs:

**cam1**

the 59SAQ-40MT5-Z

PASS error status of BIST, I2C 0x25
OSS_SEL output sleep state pin, I2C 0x1F, overrrides external

all voltage levels to the ops is 1.8 V

the power domain connected to S9920-40MTS-2 but has the same footprint as the S9920-40MTS-2

do not connect cam 2 and 3 to their own I2C, they will be connected on the controller cam1

GP0s:

Astra is using GP01 as IMAGE_BST, GP01 as IMAGE_PWDN, GP02 as Clockout, GP03 as Clockin

On is using GP03 and GP04 for clock too. GP01 and GP02 are not shown

default setting of the 914 is everything OFF

The connector from the adapter board of CAM1 is connected to the stereo camera connector of the motherboard with the annotation CAM1_S1.
CAM1 is on the adapter board located above CAM2.
I2C Address 7'b: 0x6F
Address 8'b 0 appended (WRITE): 0xDE
INFORMATION

BISTEN: built-in self test enable pin, no I2C
PDS: enable pin, no I2C register
OSD: output enable pin, DC-0x02 overrides external
OSS_SEL: Output Sleep State Select pin, DC-0x02 overrides external
BIST_CLK: BIST clock select, no I2C
IDx: Address 0x2D or 0x5A
LOCK: status PLL lock, DC 0x1C
PASS: error status of BIST

http://www.ti.com/support
http://www.ti.com

© Texas Instruments

Designed for: Public Release
Status: Beta
Revision: B1

Engineer:
SVN Rev:
Number:
Assembly Variant:
File:
Project Title:
Designed for:
Contact:
Sheet:
8/18/2014

Copyright 2015, Texas Instruments Incorporated. All rights reserved.

Information furnished is believed to be accurate and reliable. However, no responsibility is assumed for its use, which is at user’s own risk. Users should make their own evaluations as to the accuracy of all recommendations; compliance with all applicable government and industry standards and regulations; and the suitability of components for their intended purpose and application. Users should check all references for their current status. Texas Instruments reserves the right to make changes without further notice to any products herein. Texas Instruments does not assume any liability arising out of the application or use of any product or circuit, and specifically disclaims any and all liability, including without limitation special, consequential or incidental damages.

Texas Instruments does not warrant that this design will meet the specifications, will be suitable for your application or fit for any particular purpose, or will operate in an implementation. Texas Instruments and/or its suppliers do not warrant that the design is production worthy. You should completely validate and test your design implementation to confirm the system functionality for your application.
I2C for the 926 is coming from FPC connector CAM1

Data D15 and D14 are not used. So 2 GPIOs are available.
You should delete the nylon screws/standoffs and/or the bumpers as needed for your design (or substitute other parts from Hardware.IntLib). Bumpers are cheaper, but provide less clearance.

Deleting anything else from this page may result in your EVM submission being rejected (until you add them back).

Update the Label Text in the Label Table as needed for each Assembly Variant.

You can delete this note too.

Label Table

<table>
<thead>
<tr>
<th>Variant</th>
<th>Label Text</th>
</tr>
</thead>
<tbody>
<tr>
<td>D01</td>
<td>ChangeMe!</td>
</tr>
<tr>
<td>D02</td>
<td>ChangeMe!</td>
</tr>
</tbody>
</table>

Assembly Notes:

- These assemblies are ESD sensitive, ESD precautions shall be observed.
- These assemblies must be clean and free from flux and all contaminants. Use of no-clean flux is not acceptable.
- These assemblies must comply with workmanship standards IPC-A-610 Class 2, unless otherwise specified.
IMPORTANT NOTICE FOR TI REFERENCE DESIGNS

Texas Instruments Incorporated (“TI”) reference designs are solely intended to assist designers (“Buyers”) who are developing systems that incorporate TI semiconductor products (also referred to herein as “components”). Buyer understands and agrees that Buyer remains responsible for using its independent analysis, evaluation and judgment in designing Buyer’s systems and products.

TI reference designs have been created using standard laboratory conditions and engineering practices. TI has not conducted any testing other than that specifically described in the published documentation for a particular reference design. TI may make corrections, enhancements, improvements and other changes to its reference designs.

Buyers are authorized to use TI reference designs with the TI component(s) identified in each particular reference design and to modify the reference design in the development of their end products. HOWEVER, NO OTHER LICENSE, EXPRESS OR IMPLIED, BY ESTOPPEL OR OTHERWISE TO ANY OTHER TI INTELLECTUAL PROPERTY RIGHT, AND NO LICENSE TO ANY THIRD PARTY TECHNOLOGY OR INTELLECTUAL PROPERTY RIGHT, IS GRANTED HEREIN, including but not limited to any patent right, copyright, mask work right, or other intellectual property right relating to any combination, machine, or process in which TI components or services are used. Information published by TI regarding third-party products or services does not constitute a license to use such products or services, or a warranty or endorsement thereof. Use of such information may require a license from a third party under the patents or other intellectual property of the third party, or a license from TI under the patents or other intellectual property of TI.

TI reference designs are provided “AS IS”. TI makes no warranties or representations with regard to the reference designs or use of the reference designs, express, implied or statutory, including accuracy or completeness. TI disclaims any warranty of title and any implied warranties of merchantability, fitness for a particular purpose, quiet enjoyment, quiet possession, and non-infringement of any third party intellectual property rights with regard to TI reference designs or use thereof. TI shall not be liable for and shall not defend or indemnify buyers against any third party infringement claim that relates to or is based on a combination of components provided in a TI reference design. In no event shall TI be liable for any actual, special, incidental, consequential or indirect damages, however caused, on any theory of liability and whether or not TI has been advised of the possibility of such damages, arising in any way out of TI reference designs or buyer’s use of TI reference designs.

TI reserves the right to make corrections, enhancements, improvements and other changes to its semiconductor products and services per JESD46, latest issue, and to discontinue any product or service per JESD48, latest issue. Buyers should obtain the latest relevant information before placing orders and should verify that such information is current and complete. All semiconductor products are sold subject to TI’s terms and conditions of sale supplied at the time of order acknowledgment.

TI warrants performance of its components to the specifications applicable at the time of sale, in accordance with the warranty in TI’s terms and conditions of sale of semiconductor products. Testing and other quality control techniques for TI components are used to the extent TI deems necessary to support this warranty. Except where mandated by applicable law, testing of all parameters of each component is not necessarily performed.

TI assumes no liability for applications assistance or the design of Buyers’ products. Buyers are responsible for their products and applications using TI components. To minimize the risks associated with Buyers’ products and applications using TI components, Buyers should provide adequate design and operating safeguards.

Reproduction of significant portions of TI information in TI data books, data sheets or reference designs is permissible only if reproduction is without alteration and is accompanied by all associated warranties, conditions, limitations, and notices. TI is not responsible or liable for such altered documentation. Information of third parties may be subject to additional restrictions.

Buyer acknowledges and agrees that it is solely responsible for compliance with all legal, regulatory and safety-related requirements concerning its products, and any use of TI components in its applications, notwithstanding any applications-related information or support that may be provided by TI. Buyer represents and agrees that it has all the necessary expertise to create and implement safeguards that anticipate dangerous failures, monitor failures and their consequences, lessen the likelihood of dangerous failures and take appropriate remedial actions. Buyer will fully indemnify TI and its representatives against any damages arising out of the use of any TI components in Buyer’s safety-critical applications.

In some cases, TI components may be promoted specifically to facilitate safety-related applications. With such components, TI’s goal is to help enable customers to design and create their own end-product solutions that meet applicable functional safety standards and requirements. Nonetheless, such components are subject to these terms.

No TI components are authorized for use in FDA Class III (or similar life-critical medical equipment) unless authorized officers of the parties have executed an agreement specifically governing such use.

Only those TI components that TI has specifically designated as military grade or “enhanced plastic” are designed and intended for use in military/aerospace applications or environments. Buyer acknowledges and agrees that any military or aerospace use of TI components that have not been so designated is solely at Buyer’s risk, and Buyer is solely responsible for compliance with all legal and regulatory requirements in connection with such use.

TI has specifically designated certain components as meeting ISO/Ts16949 requirements, mainly for automotive use. In any case of use of non-designated products, TI will not be responsible for any failure to meet ISO/Ts16949.

Mailing Address: Texas Instruments, Post Office Box 655303, Dallas, Texas 75265
Copyright © 2014, Texas Instruments Incorporated