

PRISM Module User Guide

(Premier Reference Image Sensor Module)

UM70099/D

Purpose

The purpose of this guide is helping RPISM module user to quick access the module documents, adapter documents, DevWare Install setup file, hands on example of PRISM bring up by DevWare and driver supported list for eco-system platform partners.

PRISM Module Documents

User can get all the design files from image portal folder in onsemi website.

Link as below:

<https://www.onsemi.com/PowerSolutions/myon/erFolder.do?folderId=1665227>

1. There will contain the design files as:

- ◆ Hardware Design Documents:
 - PRISM_Module_2D_Drawing.pdf
 - PRISM_Module_Schematic.pdf
 - PRISM_Module_Schematic.dsn
 - PRISM_Module_layout.brd
 - PRISM_Module_Gerber.zip
 - PRISM_Module_BOM.xlsx
- ◆ PRISM module data sheet
- ◆ Sensor ini file for OPTM or EEPROM
- ◆ AP1302 Calibrated xml File

Image Sensor Portal Documents

[Portal Home](#) > [Pre-Production Products](#) > [PRISM MODULES](#) > [AR2020](#)

AR2020

Folders

Folder Name	Sub Folders	Files
AP1302 Calibration File *	0	1
Hardware Design Documents *	0	6
PRISM Module Datasheet *	0	1
Sensor ini File for OPTM *	0	1

Figure 1. Example of AR2020 PRISM Documents in Image Sensor Portal

2. There is OTPM or EEPROM to store the module information for each PRISM module, please refer the OTPM/EEPROM standard for general information:

[AND90264-D \(PRISM Module EEPROM_OTPM\).PDF](#)

3. PRISM module OPN list as below:

- ◆ ARX383:
PRISM1M-ARX383CSSM130110-GEVB
- ◆ AR0145:
PRISM1M-AR0145CSSM130110-GEVB

- ◆ AR0235:
PRISM1M-AR0235CSSM130110-GEVB
- ◆ AR0544:
PRISM1M-AR0544CSSC130110-GEVB
- ◆ AR0830:
PRISM1M-AR0830CSSC130110-GEVB
- ◆ AR2020:
PRISM1M-AR2020CSSC130110-GEVB
- ◆ AR0822:
PRISM1M-AR0822NPSC130110-GEVB

- ◆ AR0246:
PRISM1M-AR0246NPSC130110-GEVB
- ◆ AR1223:
PRISM1M-AR1223NPSC130110-GEVB

onsemi DEMO3 System for PRISM

onsemi offering many kinds of adapters to play with PRISM module, here is the typical hardware using calling DEMO3 system. It contains below hardware parts:

1. Demo3 Baseboard, OPN: AGB1N0CS-GEVK

2. AP1302 Headboard, OPN: AP1302CSSL00SMGAH3-GEVB
3. PRISM DEMO3 ADAPTER MIPI HISPI BOARD, OPN: PRISM1-ADPTR-DM3D1-GEVB
 - a. User manual of PRISM DEMO3 adapter board can be found here.
[PRISM_MODULE_DEMO3_ADAPTER_USER_MANUAL](#)
4. Hardware overview of whole system:

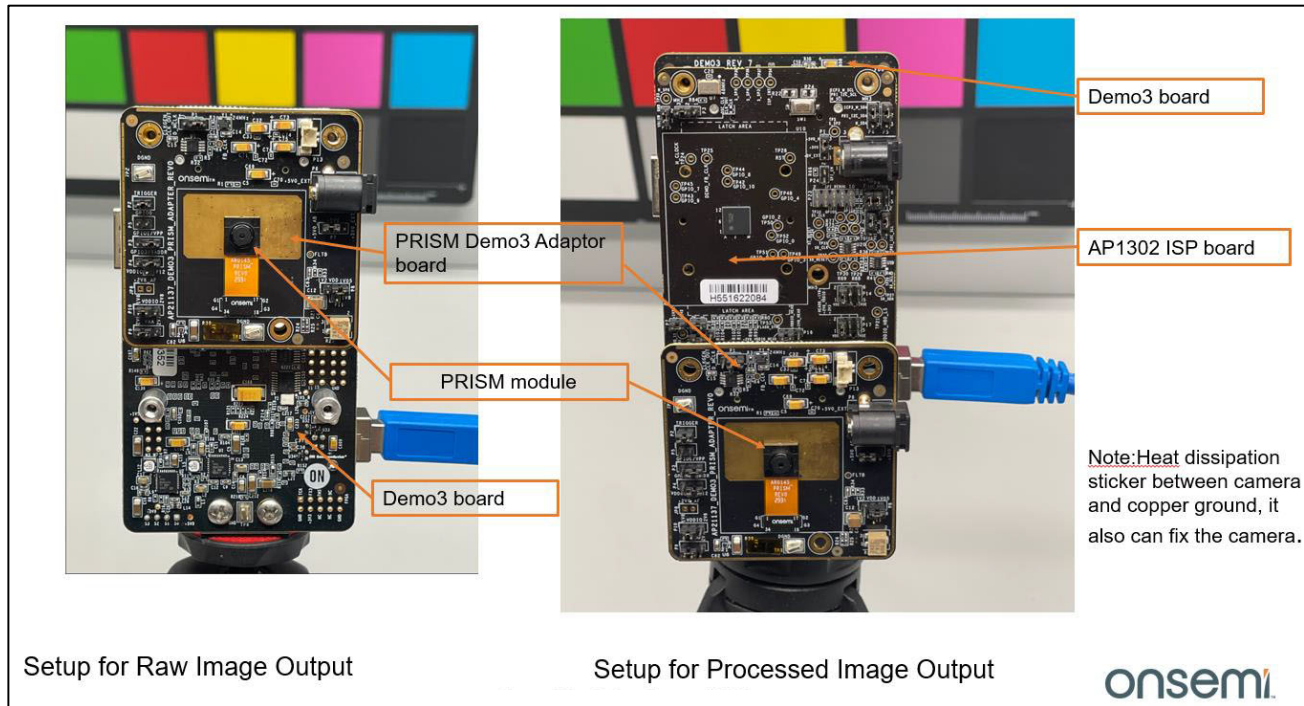


Figure 2. Hardware System Overview

5. PRISM DEMO3 adapter power jumper selection

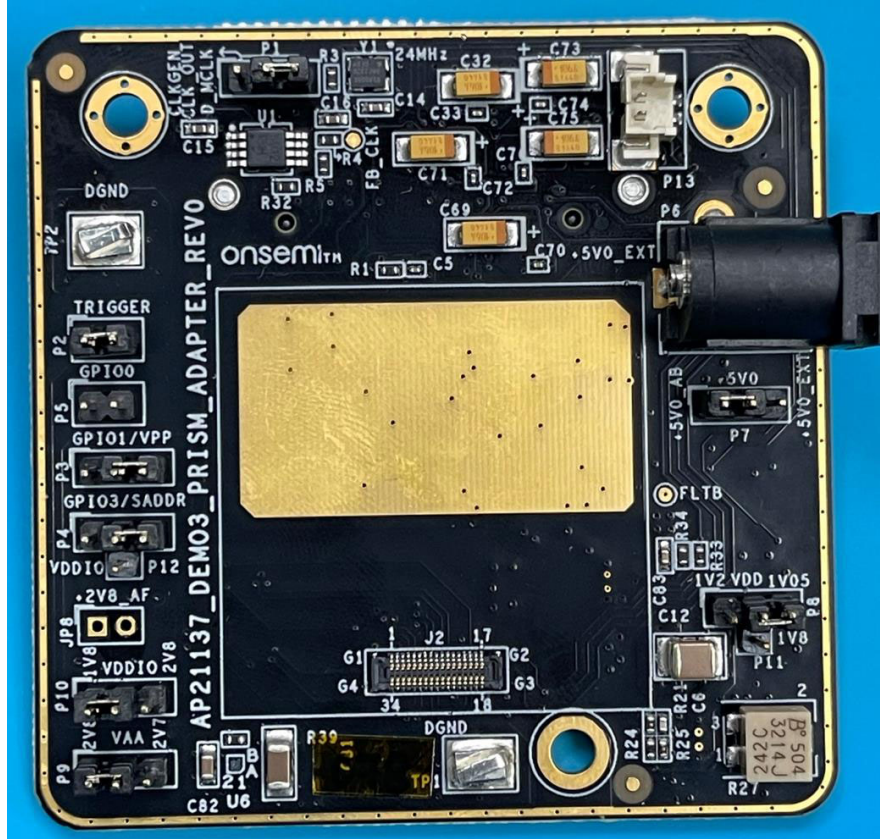


Figure 3. Top Side View of PRISM DEMO3 Adapter

	VDD_P8	VAA_P9	VDDIO_P10	GPIO1_P3	GPIO3_P4
AR1335	1.2V	2.7V	1.8V	Pls connect accordingly based on the defined use case for GPIO1.	Pls connect accordingly based on the defined use case for GPIO3.
AR0144	1.2V	2.8V	1.8V		
AR0234	1.2V	2.8V	1.8V		
AR0822	1.05V	2.8V	1.8V		
AR0544	1.05V	2.8V	1.8V		
AR0830	1.05V	2.8V	1.8V		
AR2020	1.05V	2.8V	1.8V		
ARX383	1.2V	2.8V	1.8V		
AR0145	1.2V	2.8V	1.8V		
AR0235	1.25V	2.8V	1.8V		
AR0246	1.05V	2.8V	1.8V		
ARX3A0	1.2V	2.7V	1.8V		

Figure 4. PRISM Demo3 Adapter Power Jumper Selection Table

6. DevWare install file download from:
<https://www.onsemi.com/PowerSolutions/myon/er/Folder.do?folderId=750052>

Example to Bring up PRISM by DevWare

1. Attached prism module to PRISM adapter (make sure power jumper set correctly follow Figure 4)

2. Plugin PRISM adapter to DEMO3 base board.
3. Connect USB3.0 cable to PC
4. Lunch DEVWARE on your PC
5. Select “Detect” when the Startup Choices manual popup (you may not need to manual select if the software is auto detected enabled).

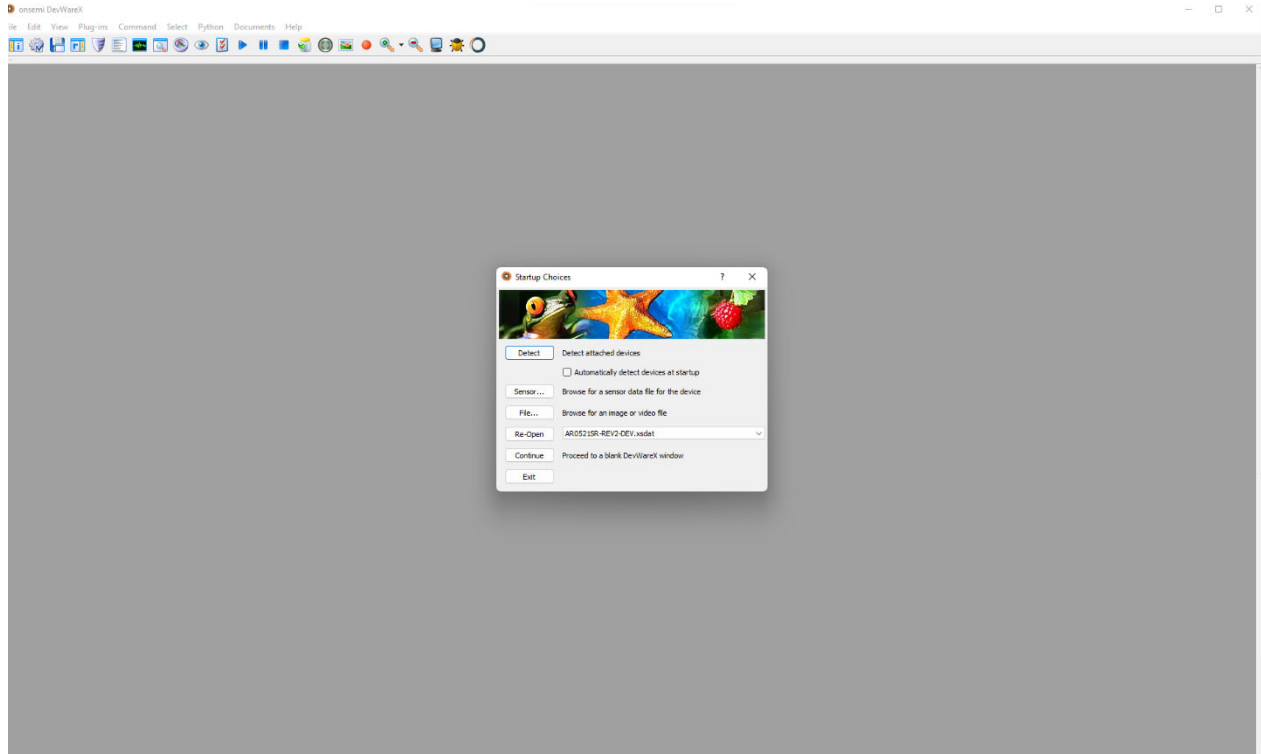


Figure 5. Detect Sensor

6. Select default setting at the “Startup Wizard” window

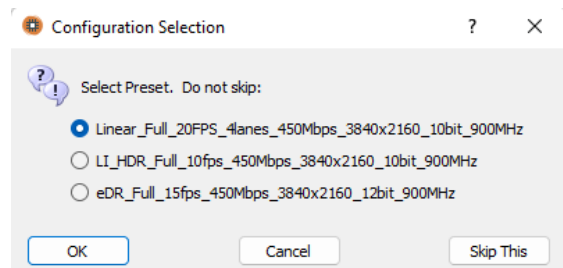
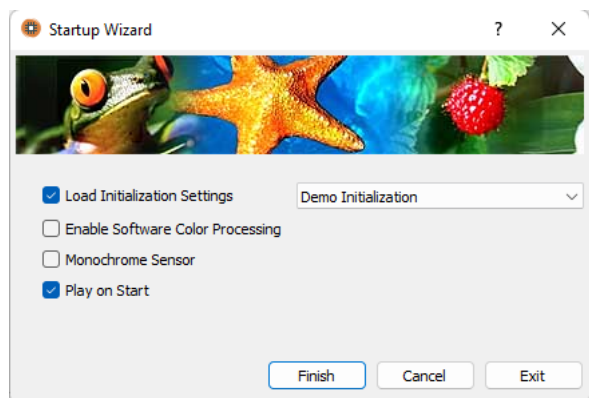


Figure 6. Sensor Setting Select

7. Preview image and evaluate the performance.

UM70099/D

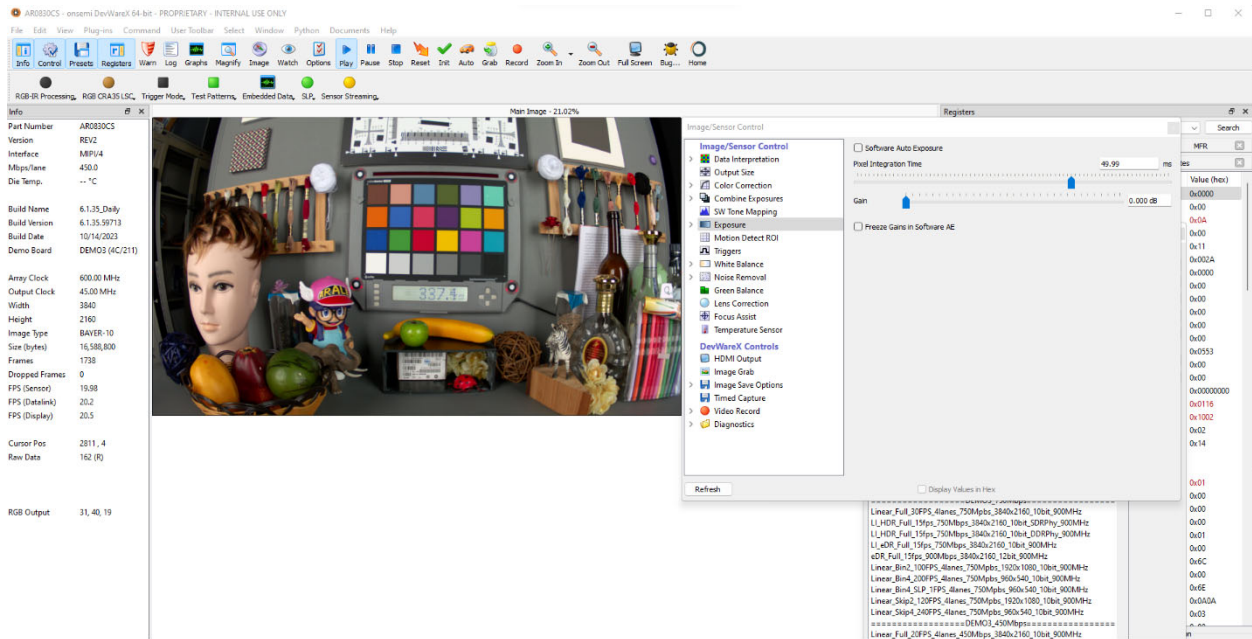


Figure 7. Image Preview

8. Detail support how to play and develop with DevWare please refer below link:
[Help – Detailed – DevSuite – Confluence \(atlassian.net\)](https://atlassian.net/help-detailed-devsuite-confluence)

Driver Support List for Eco-system Platform.

1. **onsemi** has developed many adapter boards to eco-system partner's SOC platform, user can order the board from **onsemi**, the supported list of the adapter as below:

Table 1.

Items	Description	OPN
1	PRISM Adaptor to NXP™ i.MX9 EVB	PRISM1-ADPTR-NXPM1-GEVK
2	PRISM Adaptor to NXP i.MX8 EVB	PRISM1-ADPTR-NXPM2-GEVK
3	PRISM/IAS adapter to Qualcomm® RB5 platform	PRISM1-ADPTR-QCMM1-GEVB
4	PRISM/IAS adapter to NVIDIA® Jetson Nano™ platform	PRISM1-ADPTR-NVDM1-GEVB
5		

- Below is an example to connect PRISM module to NXP i.mx93 and NVIDIA Jetson Nano.

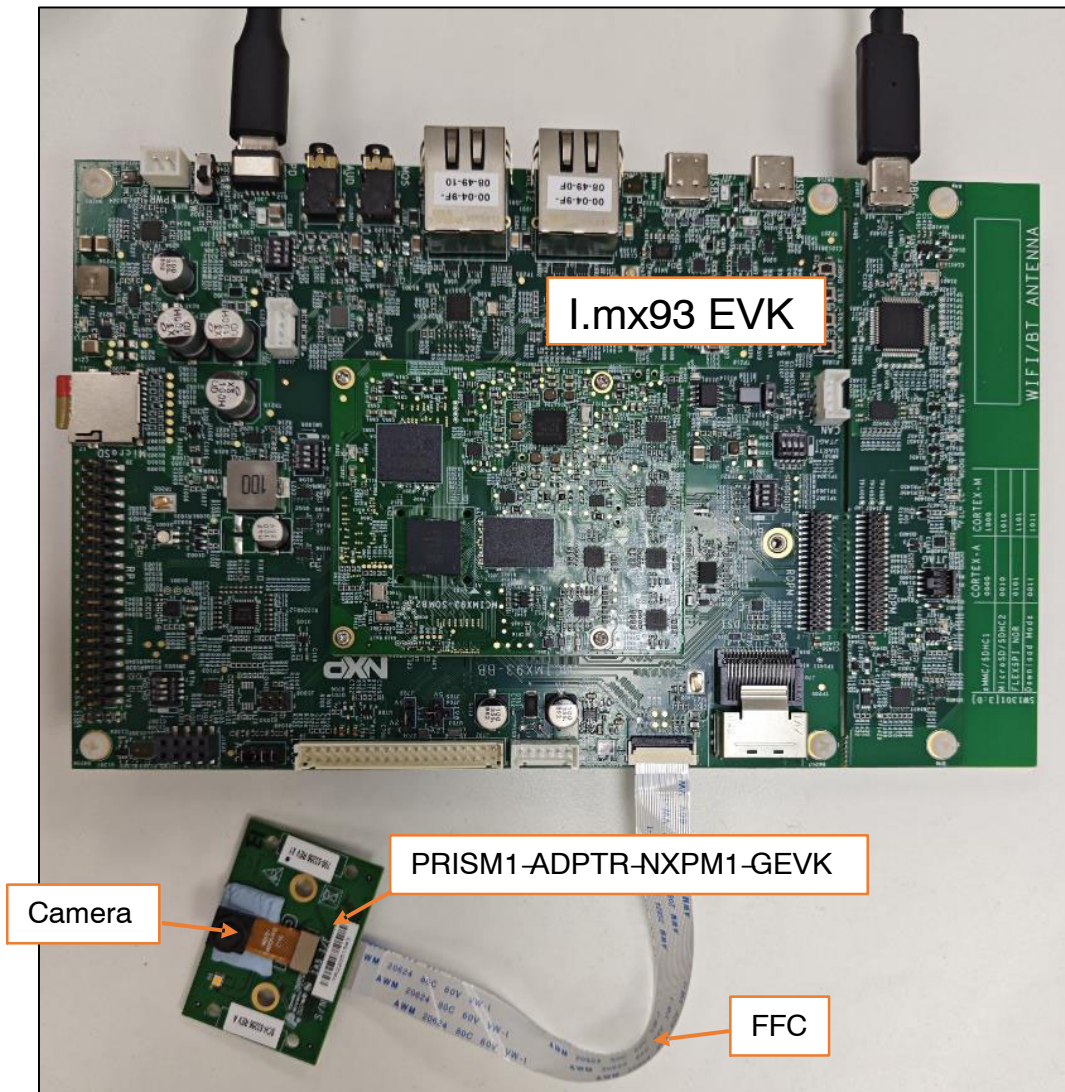


Figure 8. PRISM Module to NXP i.mx93 EVK

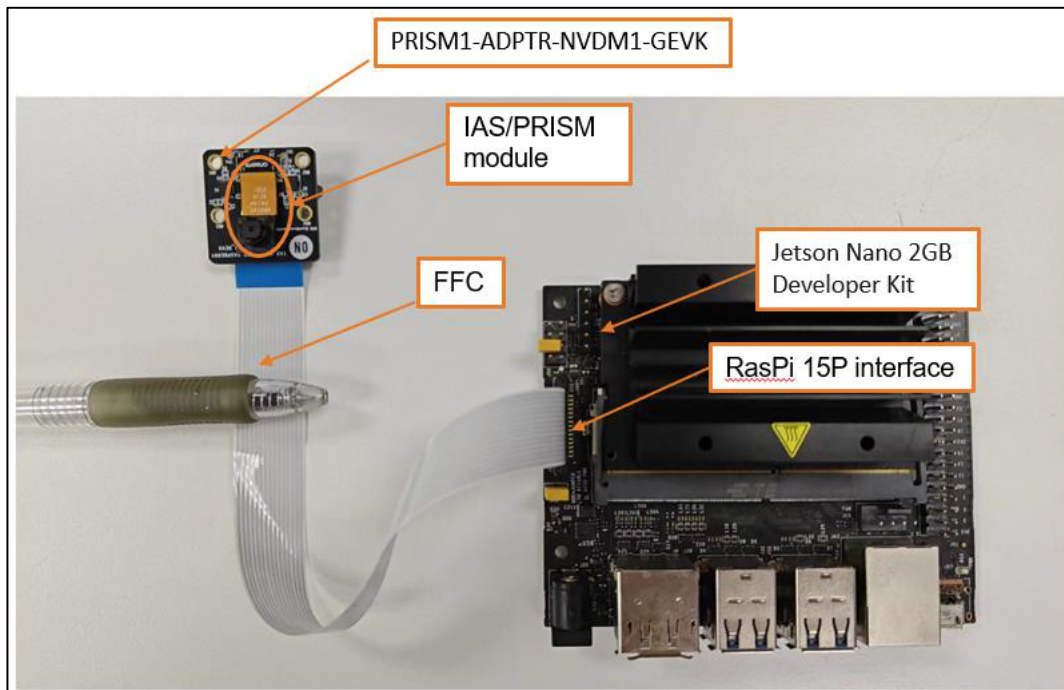


Figure 9. PRISM Module to NVIDIA Jetson Nano EVK

3. **onsemi** also have enabled driver code for different sensors, user can check the driver from below

links under NDA.
[Platform Matrix Pivot](#)

Jetson Nano is a trademark of NVIDIA Corporation.
NVIDIA is a registered trademark of NVIDIA Corporation.
NXP and the NXP logo are trademarks of NXP B.V.
Qualcomm is a registered trademark of Qualcomm Incorporated.

onsemi, **Onsemi**, and other names, marks, and brands are registered and/or common law trademarks of Semiconductor Components Industries, LLC dba "**onsemi**" or its affiliates and/or subsidiaries in the United States and/or other countries. **onsemi** owns the rights to a number of patents, trademarks, copyrights, trade secrets, and other intellectual property. A listing of **onsemi**'s product/patent coverage may be accessed at www.onsemi.com/site/pdf/Patent-Marking.pdf. **onsemi** reserves the right to make changes at any time to any products or information herein, without notice. The information herein is provided "as-is" and **onsemi** makes no warranty, representation or guarantee regarding the accuracy of the information, product features, availability, functionality, or suitability of its products for any particular purpose, nor does **onsemi** 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. Buyer is responsible for its products and applications using **onsemi** products, including compliance with all laws, regulations and safety requirements or standards, regardless of any support or applications information provided by **onsemi**. "Typical" parameters which may be provided in **onsemi** data sheets and/or specifications can and do vary in different applications and actual performance may vary over time. All operating parameters, including "Typicals" must be validated for each customer application by customer's technical experts. **onsemi** does not convey any license under any of its intellectual property rights nor the rights of others. **onsemi** products are not designed, intended, or authorized for use as a critical component in life support systems or any FDA Class 3 medical devices or medical devices with a same or similar classification in a foreign jurisdiction or any devices intended for implantation in the human body. Should Buyer purchase or use **onsemi** products for any such unintended or unauthorized application, Buyer shall indemnify and hold **onsemi** and its officers, employees, subsidiaries, affiliates, and distributors harmless against all claims, costs, damages, and expenses, and reasonable attorney fees arising out of, directly or indirectly, any claim of personal injury or death associated with such unintended or unauthorized use, even if such claim alleges that **onsemi** was negligent regarding the design or manufacture of the part. **onsemi** is an Equal Opportunity/Affirmative Action Employer. This literature is subject to all applicable copyright laws and is not for resale in any manner.

ADDITIONAL INFORMATION

TECHNICAL PUBLICATIONS:

Technical Library: www.onsemi.com/design/resources/technical-documentation
onsemi Website: www.onsemi.com

ONLINE SUPPORT: www.onsemi.com/support

For additional information, please contact your local Sales Representative at
www.onsemi.com/support/sales