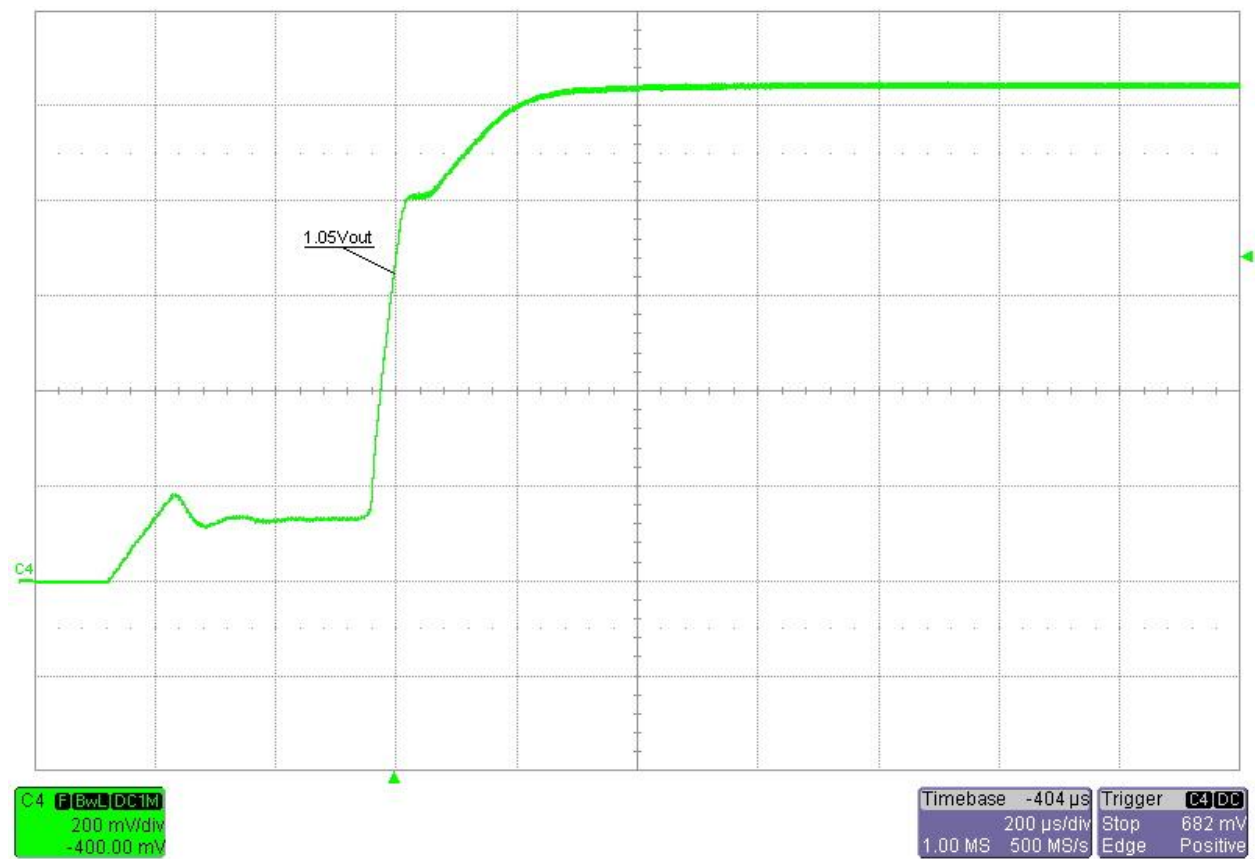


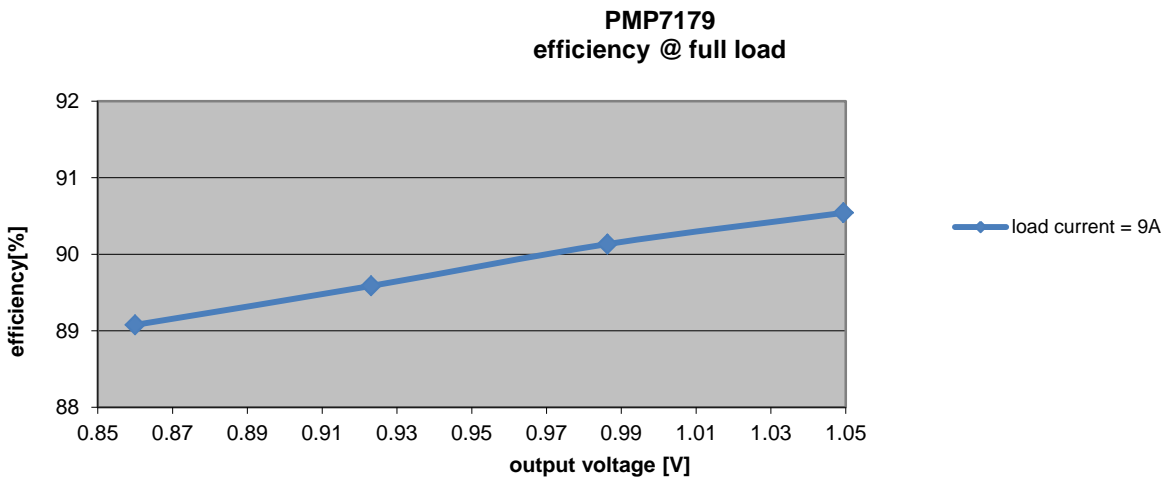
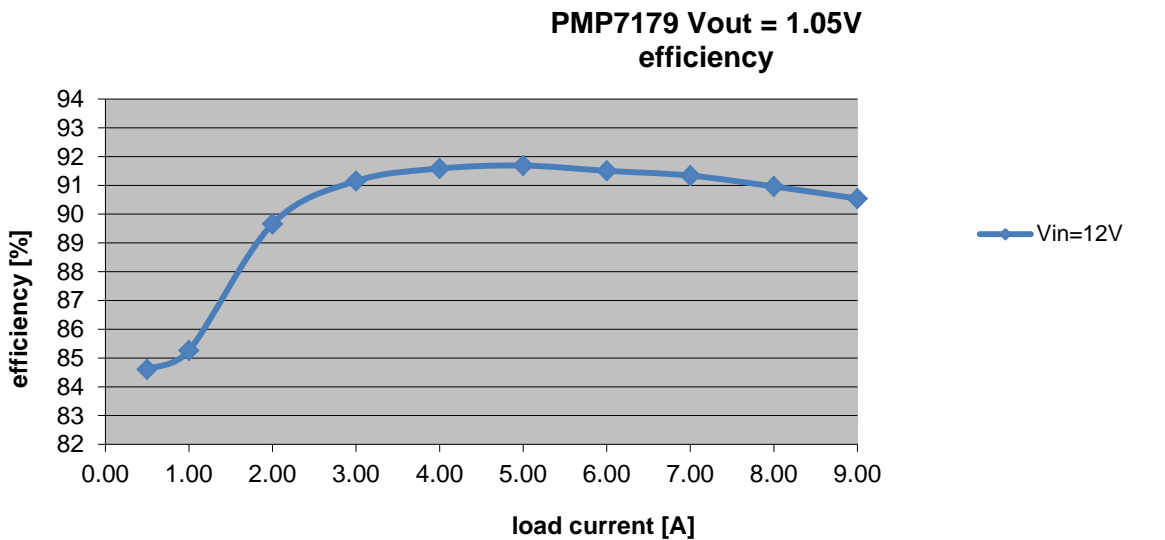
1 Startup

Input voltage = 12V

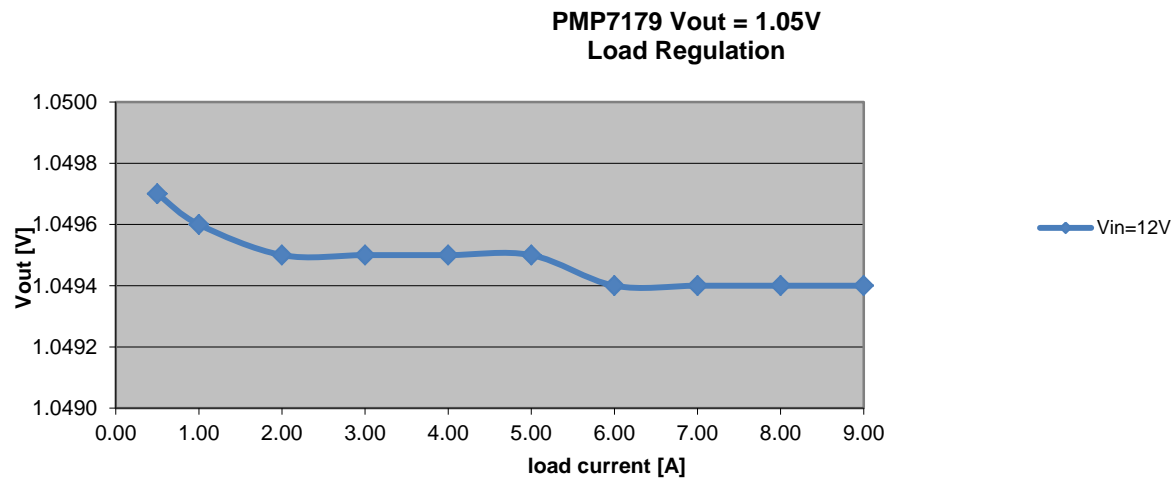
Load current = 9A



2 Efficiency



3 Load regulation



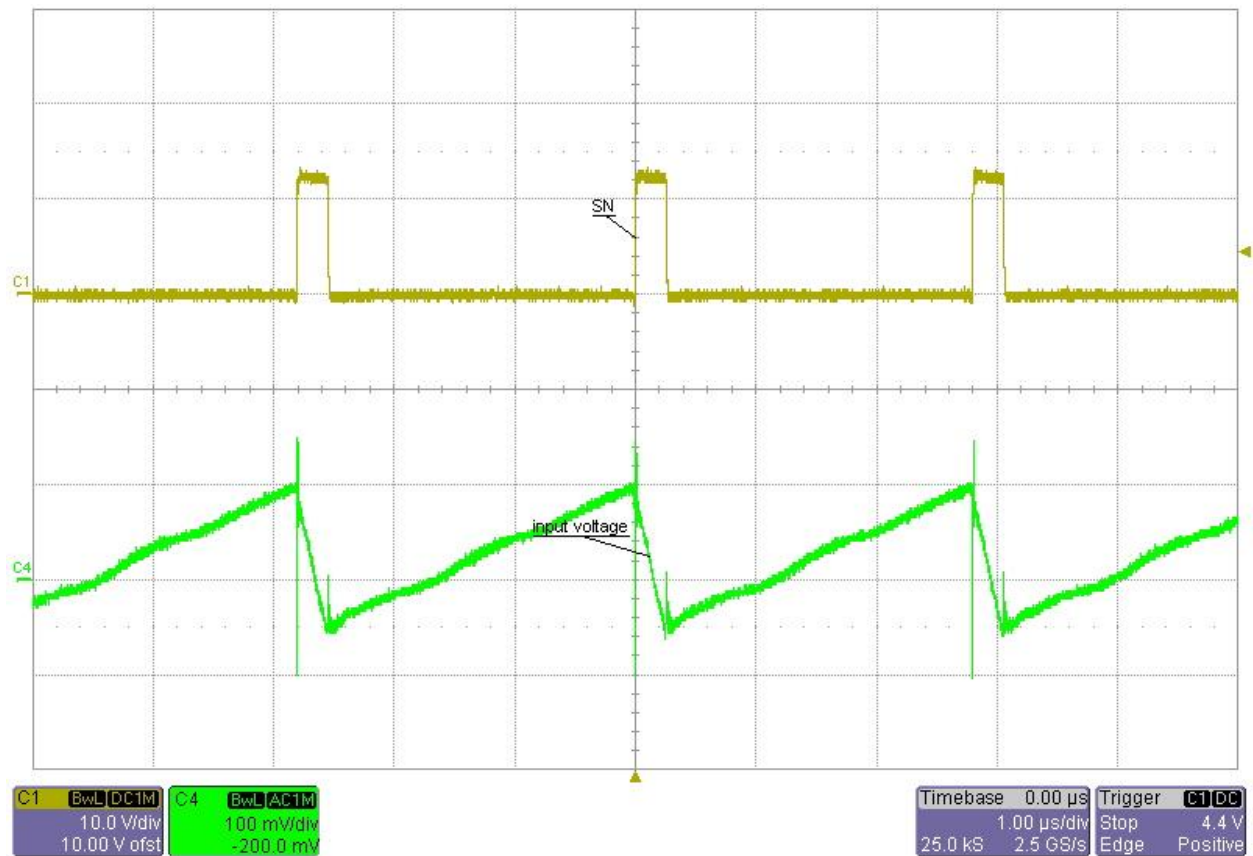
VID Control

VID0	VID1	voltage [V]	input current [A]	power [W]	voltage [V]	output current [A]	power [W]	efficiency [%]
L	L	12.090	0.8628	10.43	1.0494	9.000	9.44	90.5
H	L	12.090	0.8155	9.86	0.9863	9.010	8.89	90.1
L	H	12.090	0.7679	9.28	0.9231	9.010	8.32	89.6
H	H	12.090	0.7203	8.71	0.8600	9.020	7.76	89.1

4 Input ripple voltage

Input voltage = 12V

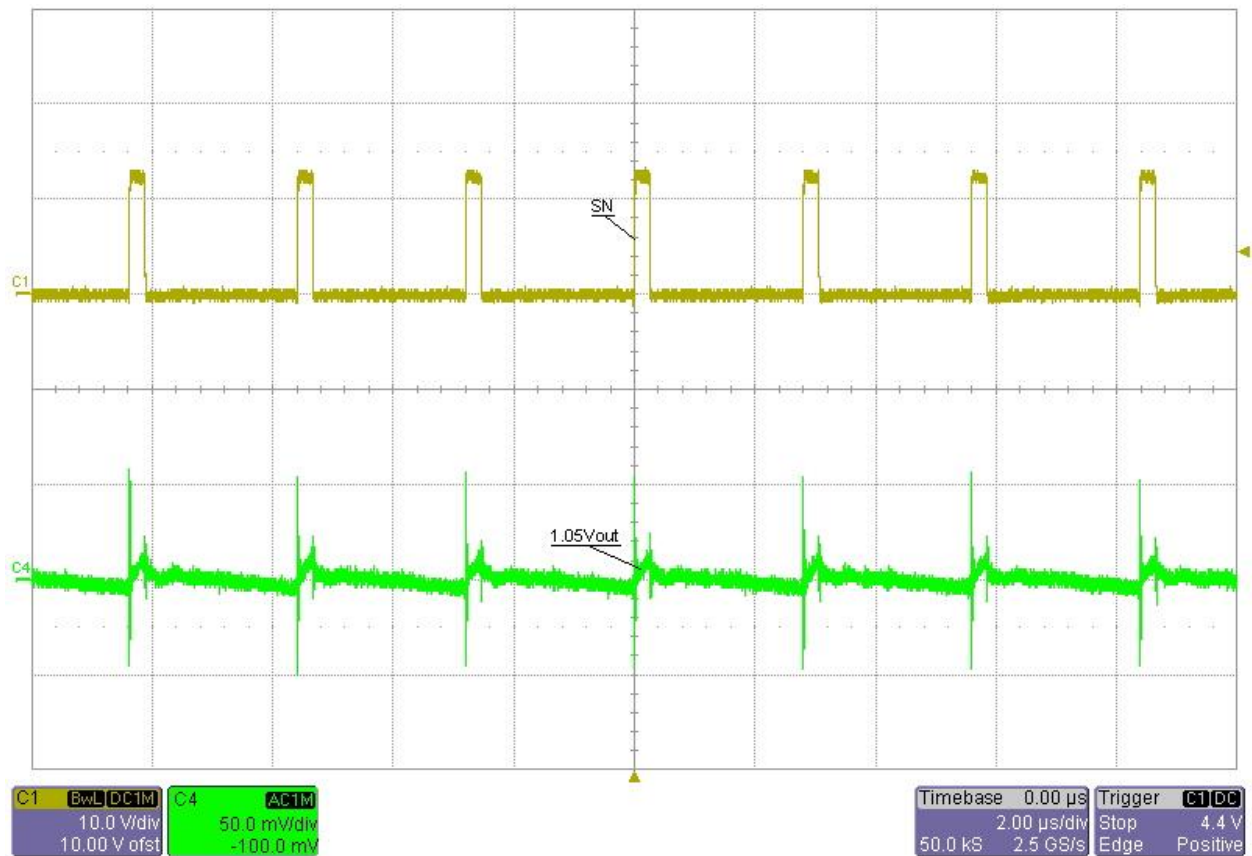
Load current = 9A



5 Output ripple voltage

Input voltage = 12V

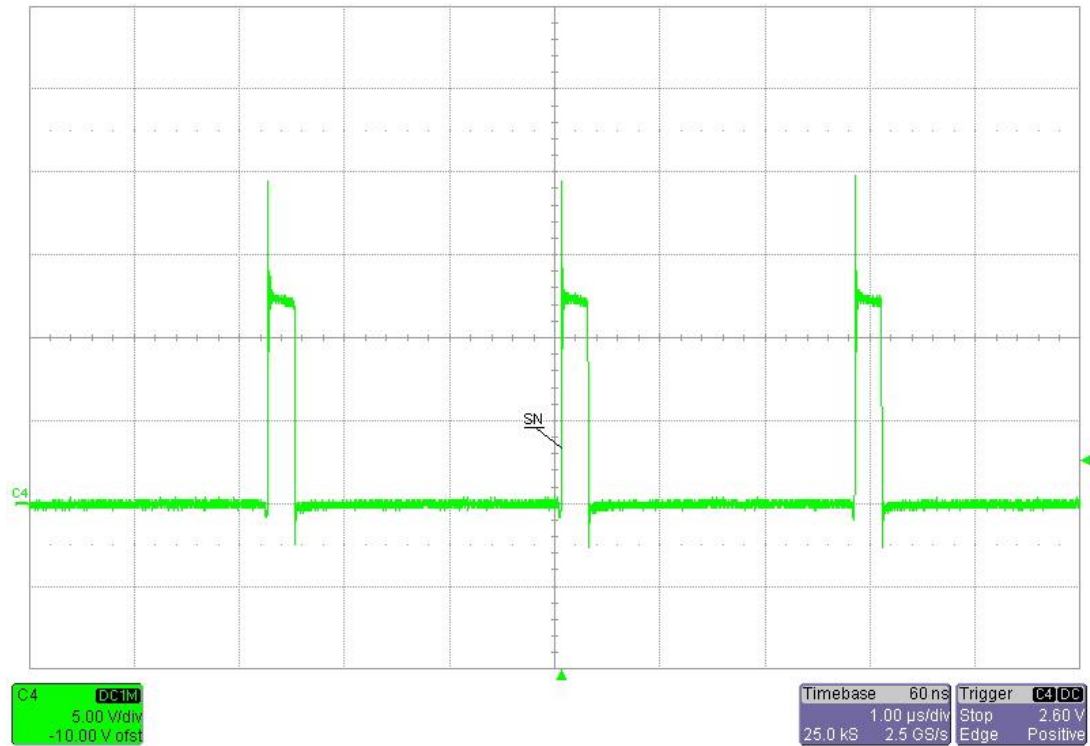
Load current = 9A



6 Switch Node

Input voltage = 12V

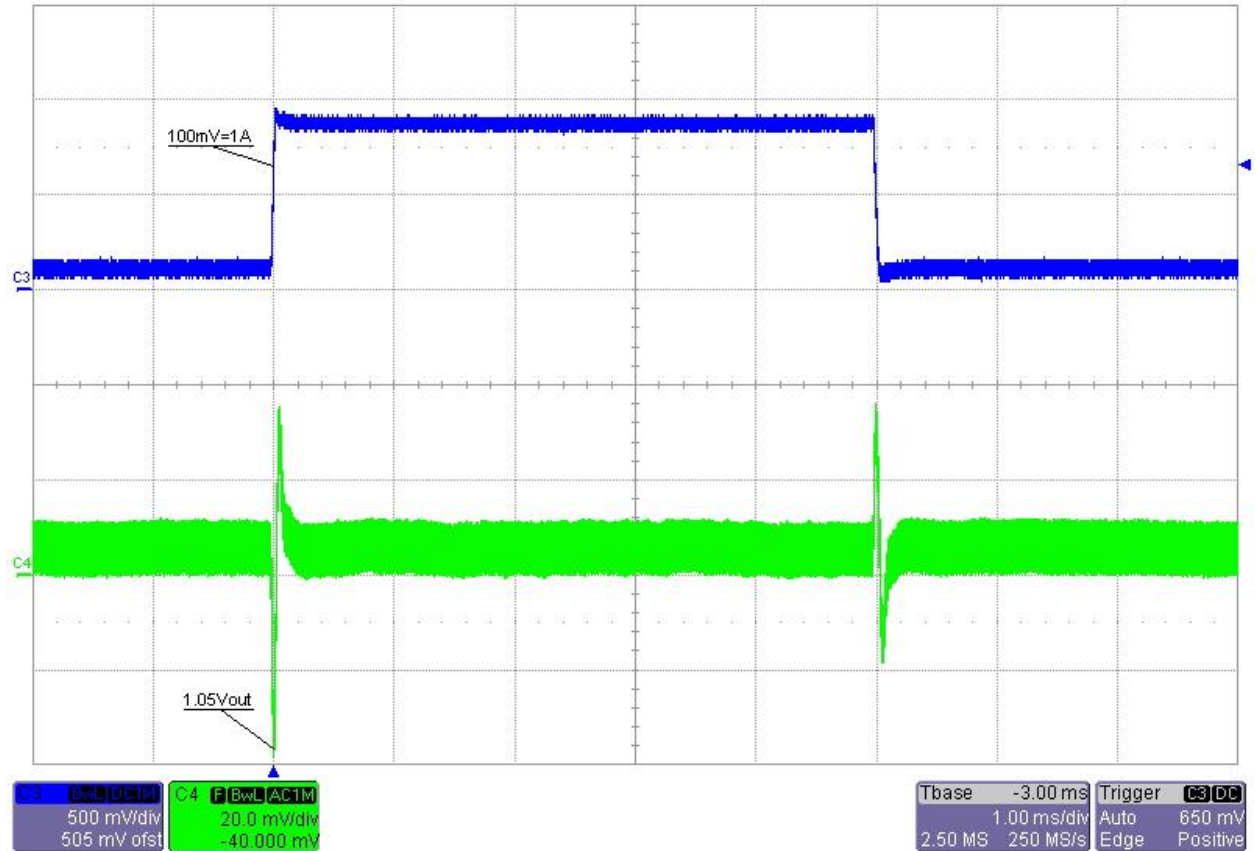
Load current = 9A



7 Load Transients

Input voltage = 12V

Load current = 1A to 9A

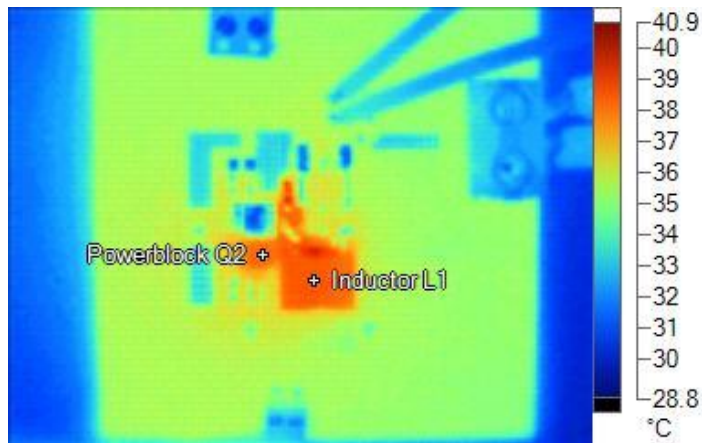


8 Thermal Analysis

The images below show the infrared images taken from the FlexCam after 15min at full load (1.05V@9A).

Input voltage = 12V

Ambient temperature = 25°C



Name	Temperature	
Inductor L1	38.7°C	
Powerblock Q2	38.2°C	

IMPORTANT NOTICE AND DISCLAIMER

TI PROVIDES TECHNICAL AND RELIABILITY DATA (INCLUDING DATASHEETS), DESIGN RESOURCES (INCLUDING REFERENCE DESIGNS), APPLICATION OR OTHER DESIGN ADVICE, WEB TOOLS, SAFETY INFORMATION, AND OTHER RESOURCES "AS IS" AND WITH ALL FAULTS, AND DISCLAIMS ALL WARRANTIES, EXPRESS AND IMPLIED, INCLUDING WITHOUT LIMITATION ANY IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR NON-INFRINGEMENT OF THIRD PARTY INTELLECTUAL PROPERTY RIGHTS.

These resources are intended for skilled developers designing with TI products. You are solely responsible for (1) selecting the appropriate TI products for your application, (2) designing, validating and testing your application, and (3) ensuring your application meets applicable standards, and any other safety, security, or other requirements. These resources are subject to change without notice. TI grants you permission to use these resources only for development of an application that uses the TI products described in the resource. Other reproduction and display of these resources is prohibited. No license is granted to any other TI intellectual property right or to any third party intellectual property right. TI disclaims responsibility for, and you will fully indemnify TI and its representatives against, any claims, damages, costs, losses, and liabilities arising out of your use of these resources.

TI's products are provided subject to TI's Terms of Sale (<https://www.ti.com/legal/termsofsale.html>) or other applicable terms available either on [ti.com](https://www.ti.com) or provided in conjunction with such TI products. TI's provision of these resources does not expand or otherwise alter TI's applicable warranties or warranty disclaimers for TI products.

Mailing Address: Texas Instruments, Post Office Box 655303, Dallas, Texas 75265
Copyright © 2021, Texas Instruments Incorporated