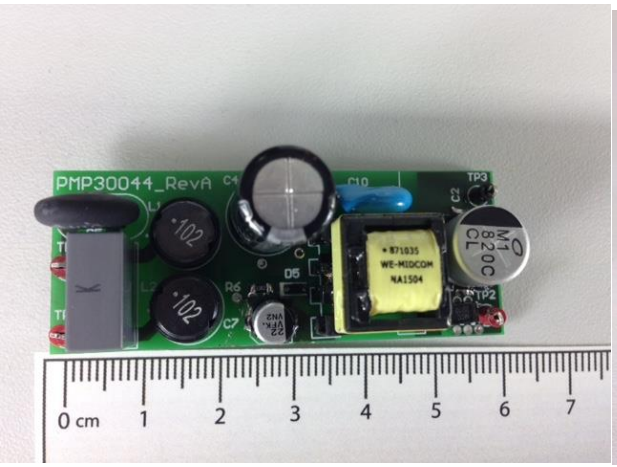
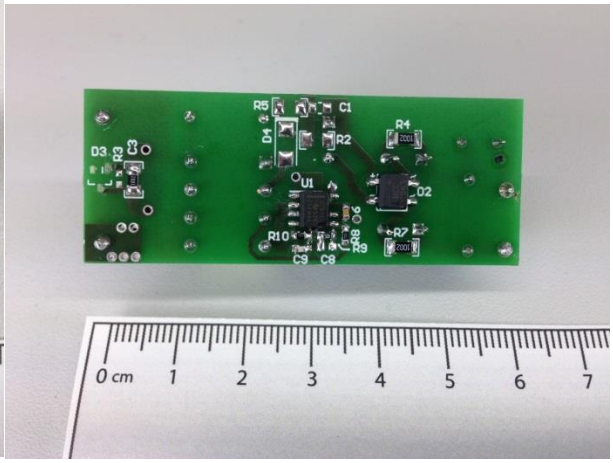
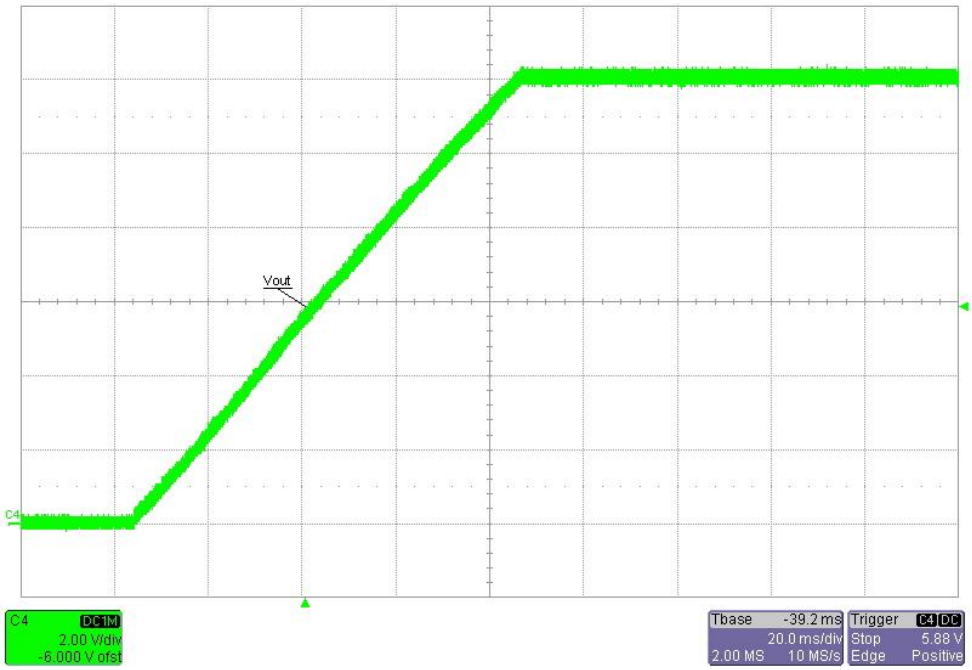


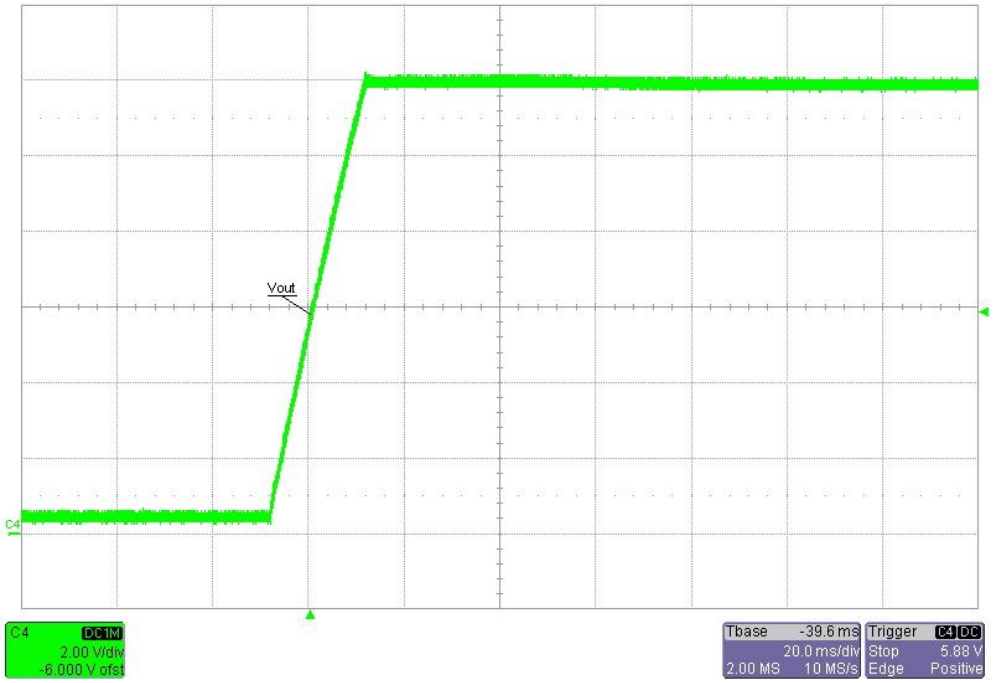


1 Startup

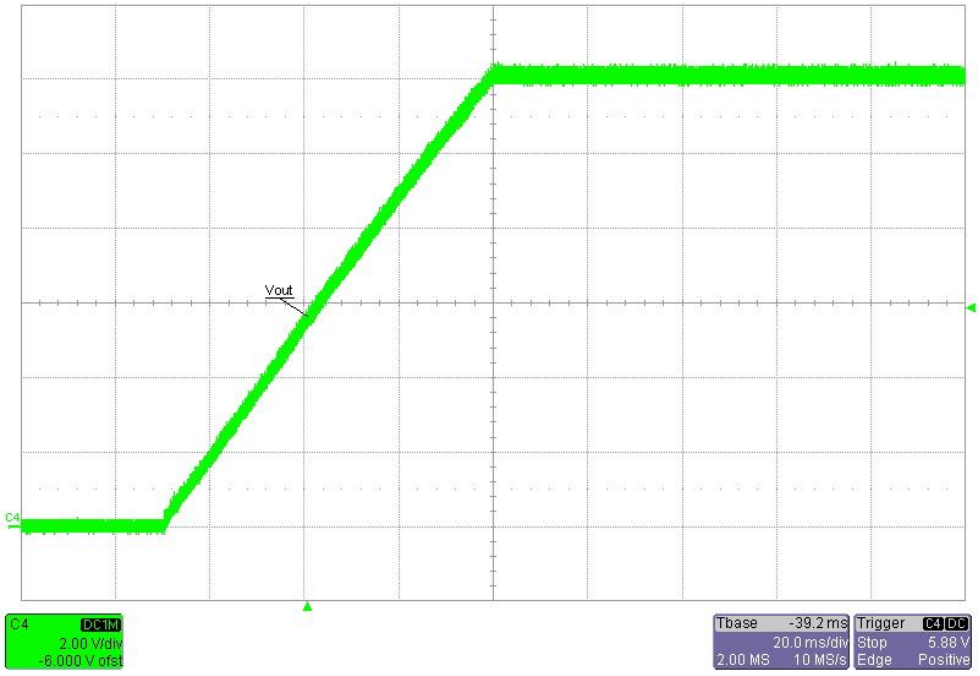
Input voltage = 85VAC
Load current = 0.35A



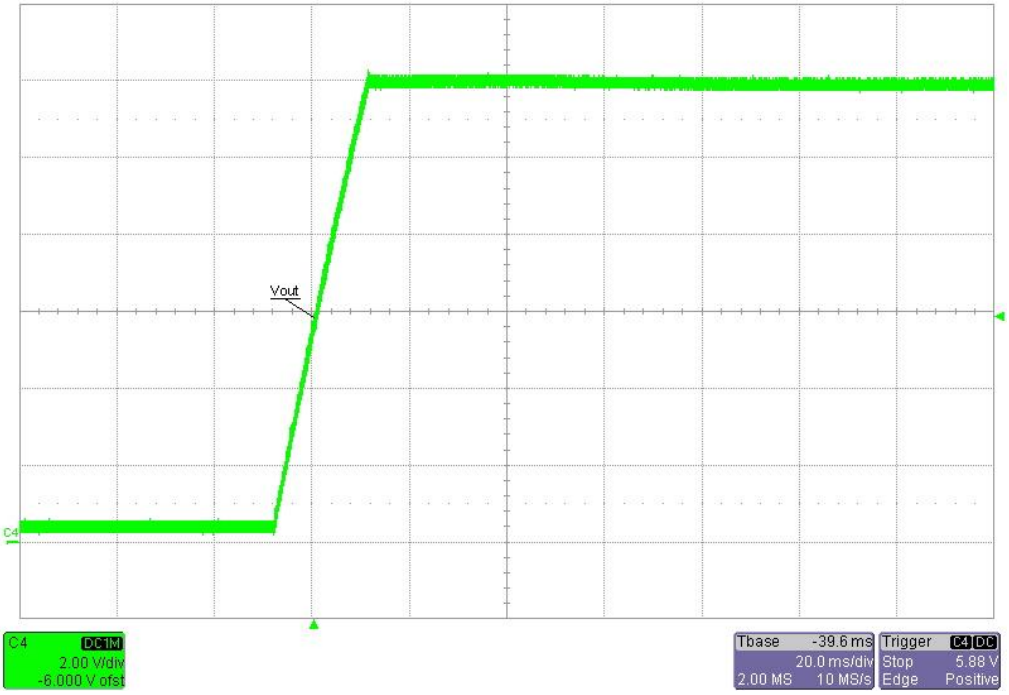
Input voltage = 85VAC
Load current = no load



Input voltage = 265VAC
Load current = 0.35A



Input voltage = 265VAC
Load current = 0.35A

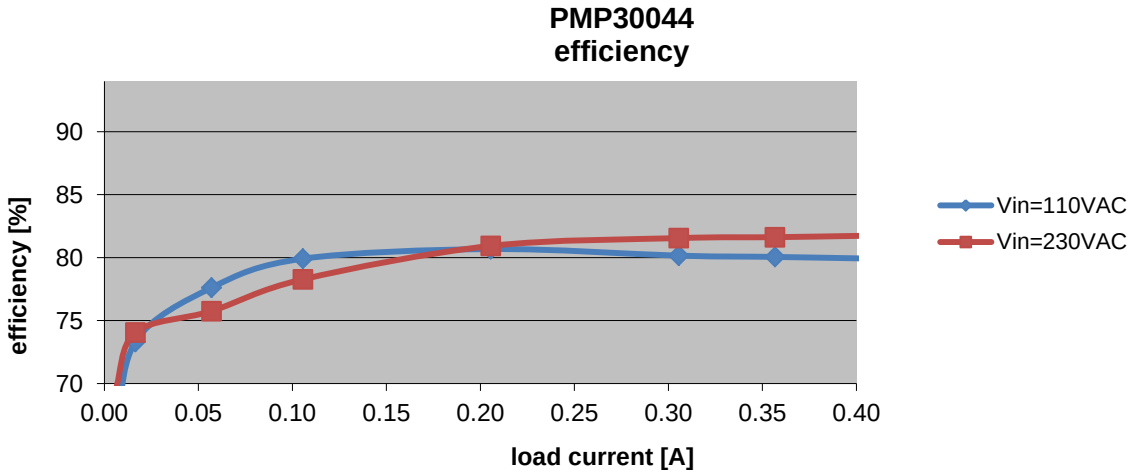


2 Shutdown

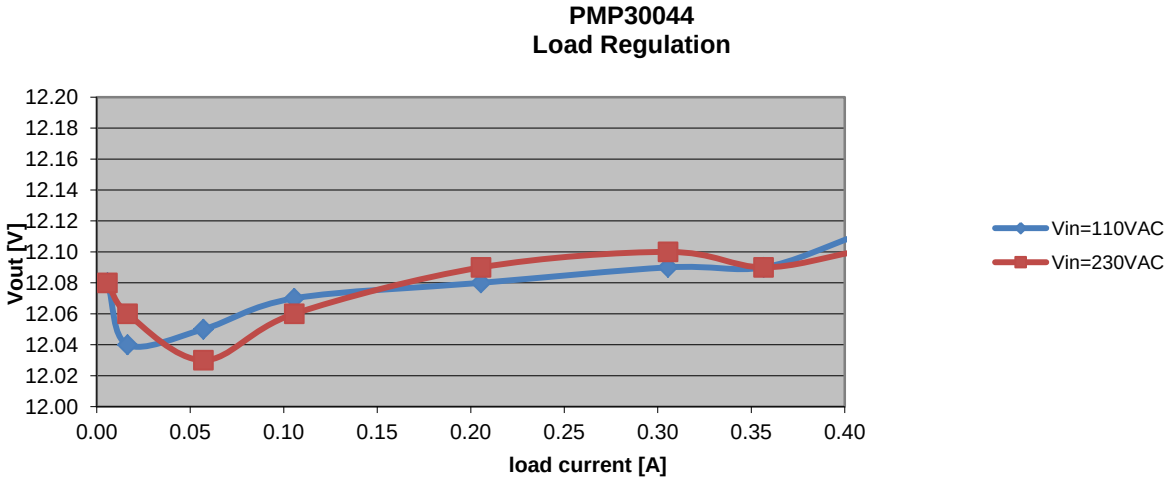
Input voltage = 85VAC
Load current = 0.35A

Input voltage = 264VAC
Load current = 0.35A

2 Efficiency

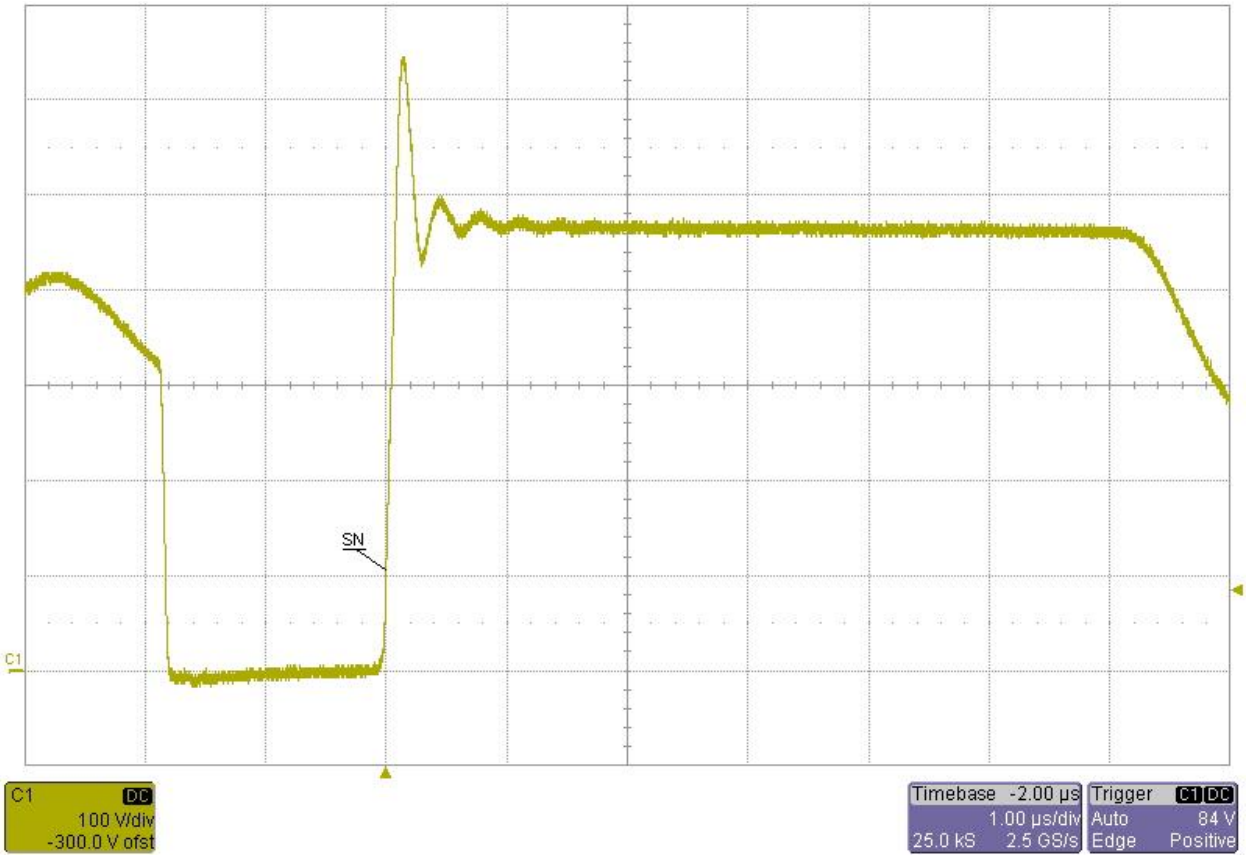


3 Load regulation



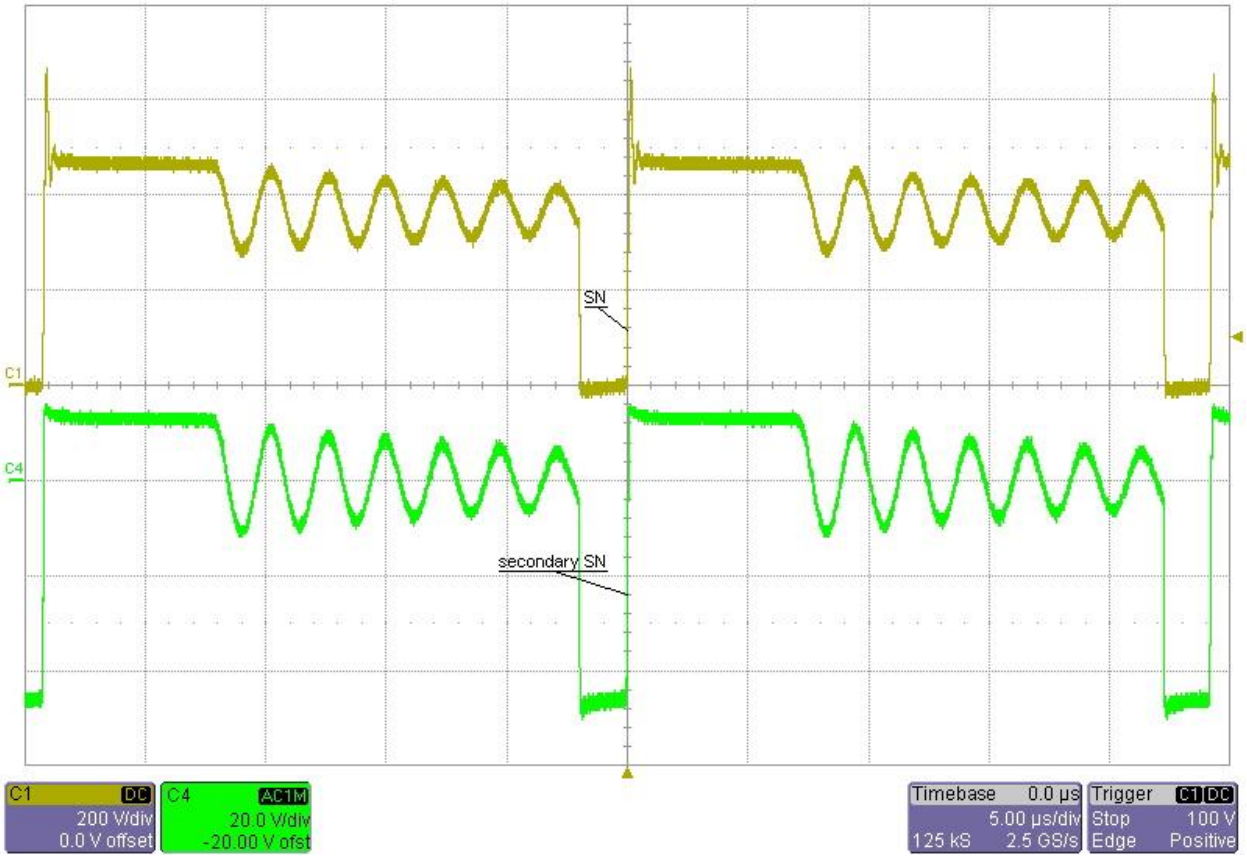
4 Switch Node

Input voltage = 374VDC
Load current = 0.35A



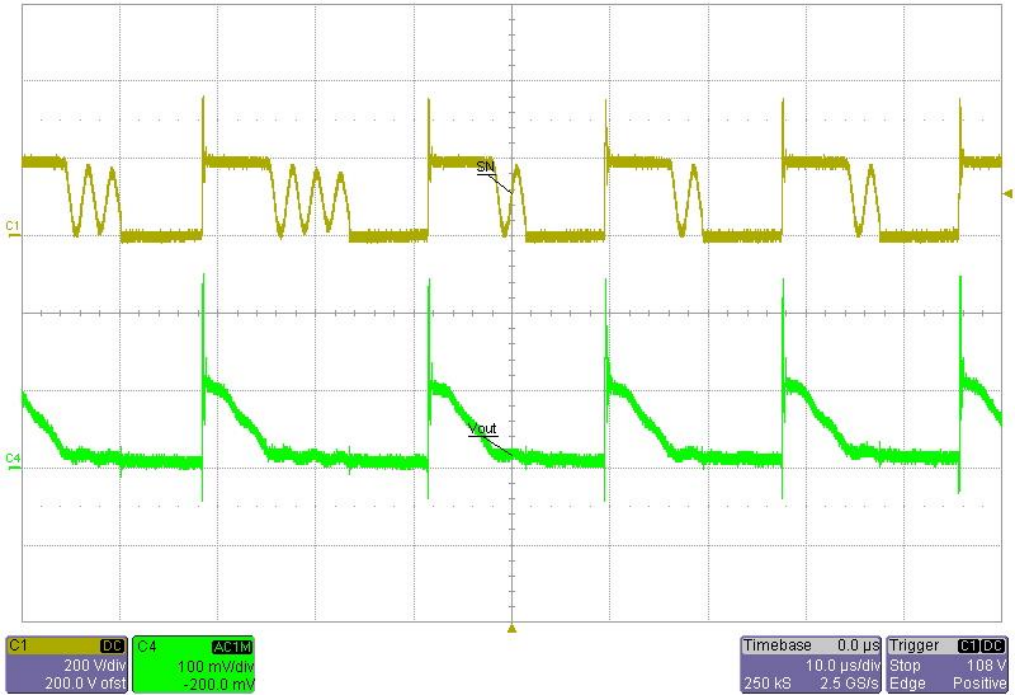
5 Secondary side Switch Node

Input voltage = 374VDC
Load current = 0.35A

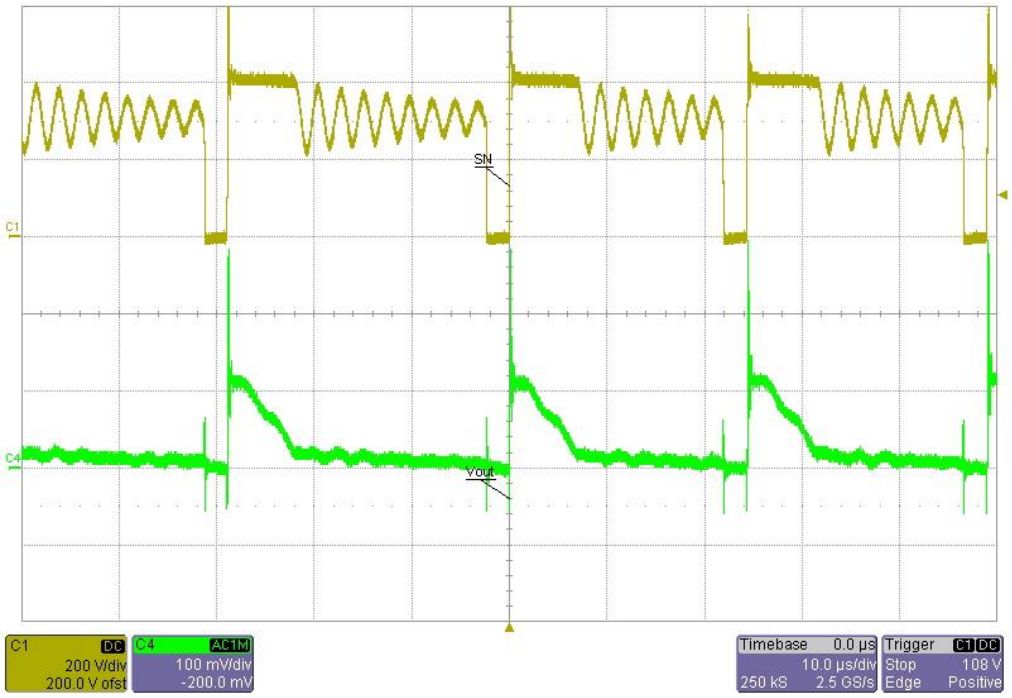


6 Output ripple voltage

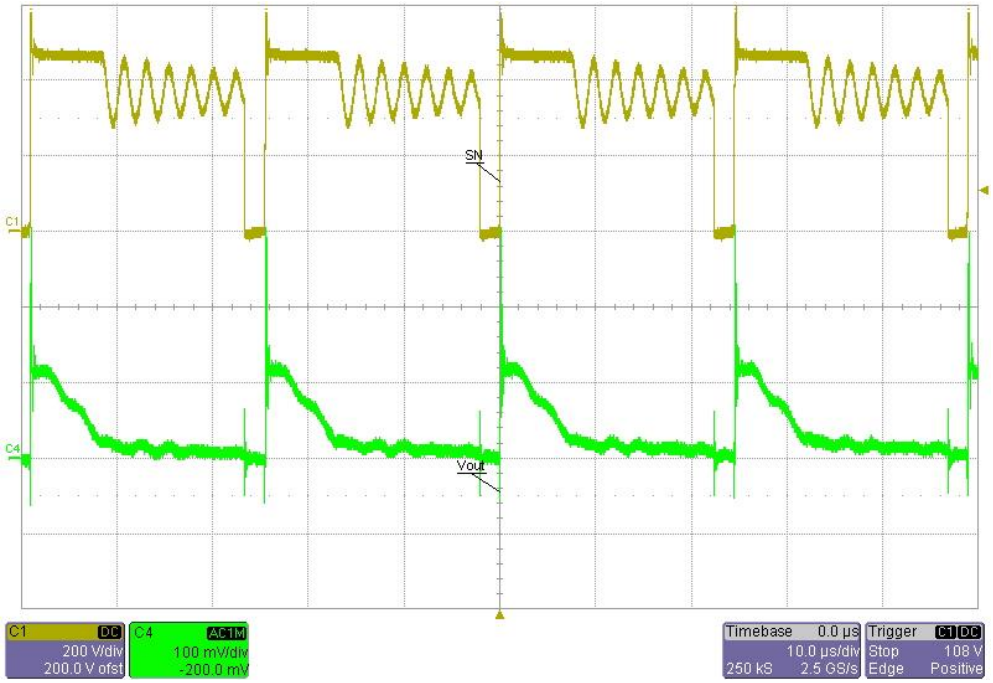
Input voltage = 85VAC
Load current = 0.35A



Input voltage = 230VAC
Load current = 0.35A

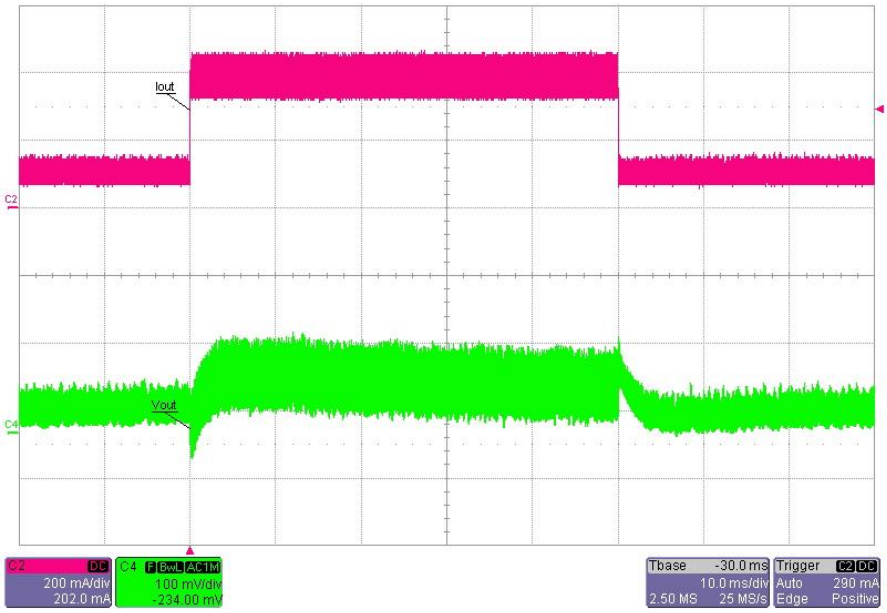


Input voltage = 264VAC
Load current = 0.35A

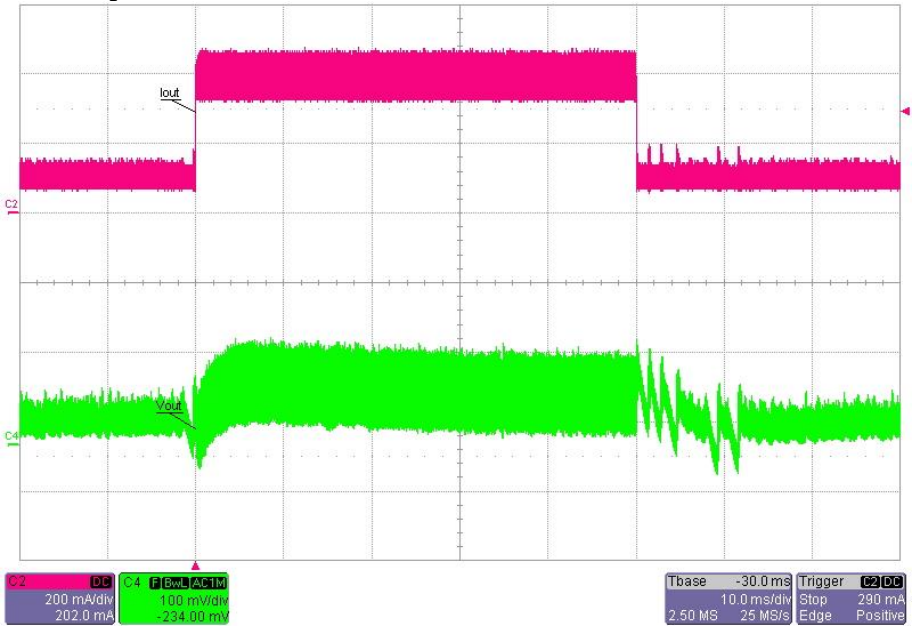


7 Transient Response

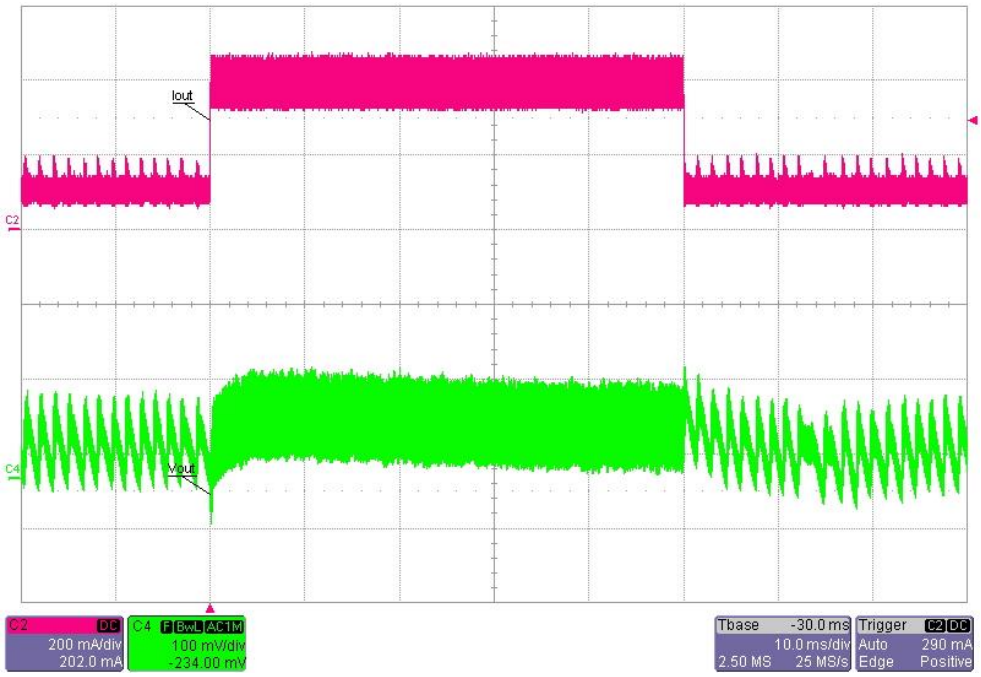
Input voltage = 85VAC
Load step = 0.1A-0.35A



Input voltage = 230VAC
Load step = 0.1A-0.35A



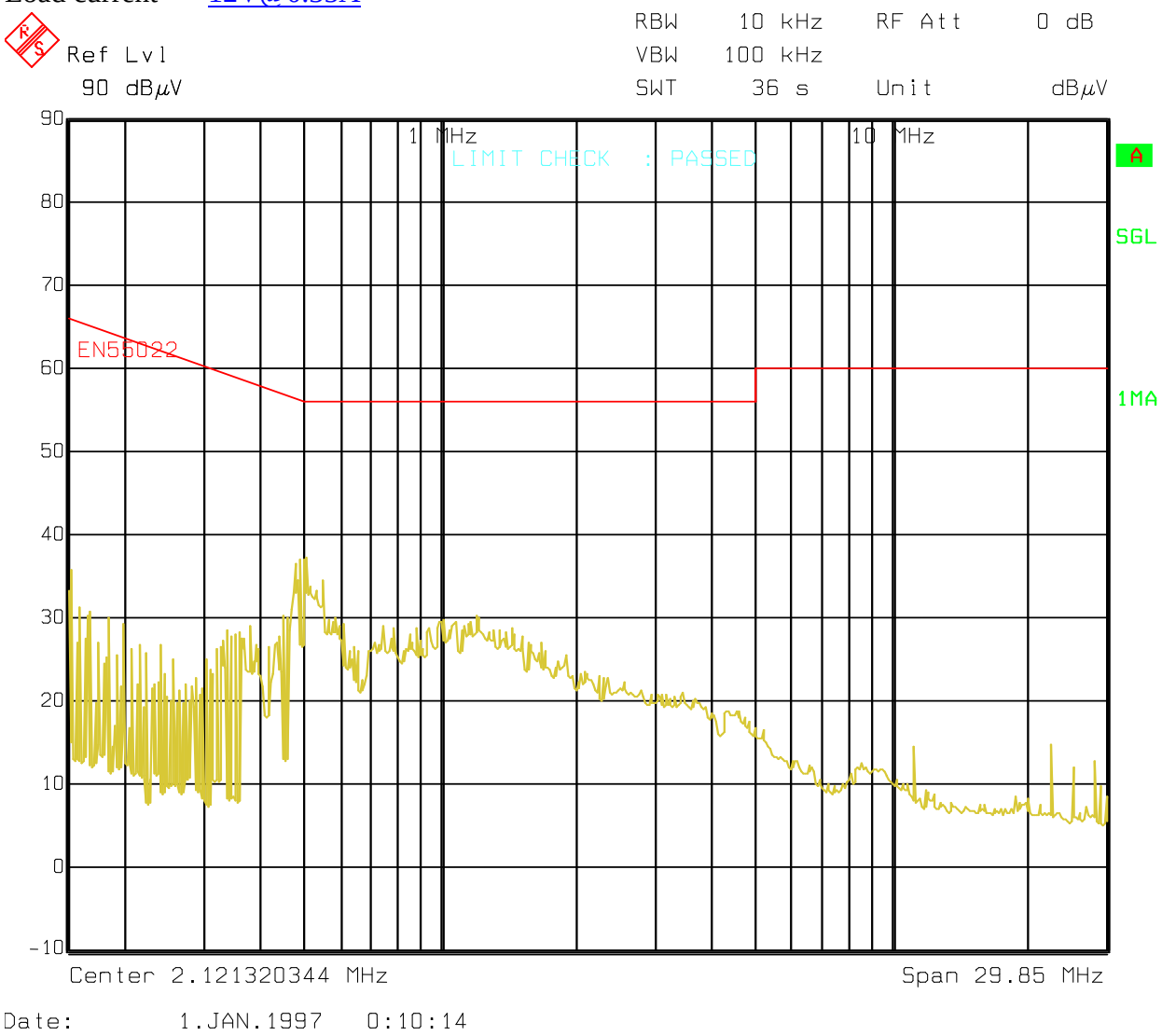
Input voltage = 264VAC
Load step = 0.1A-0.35A



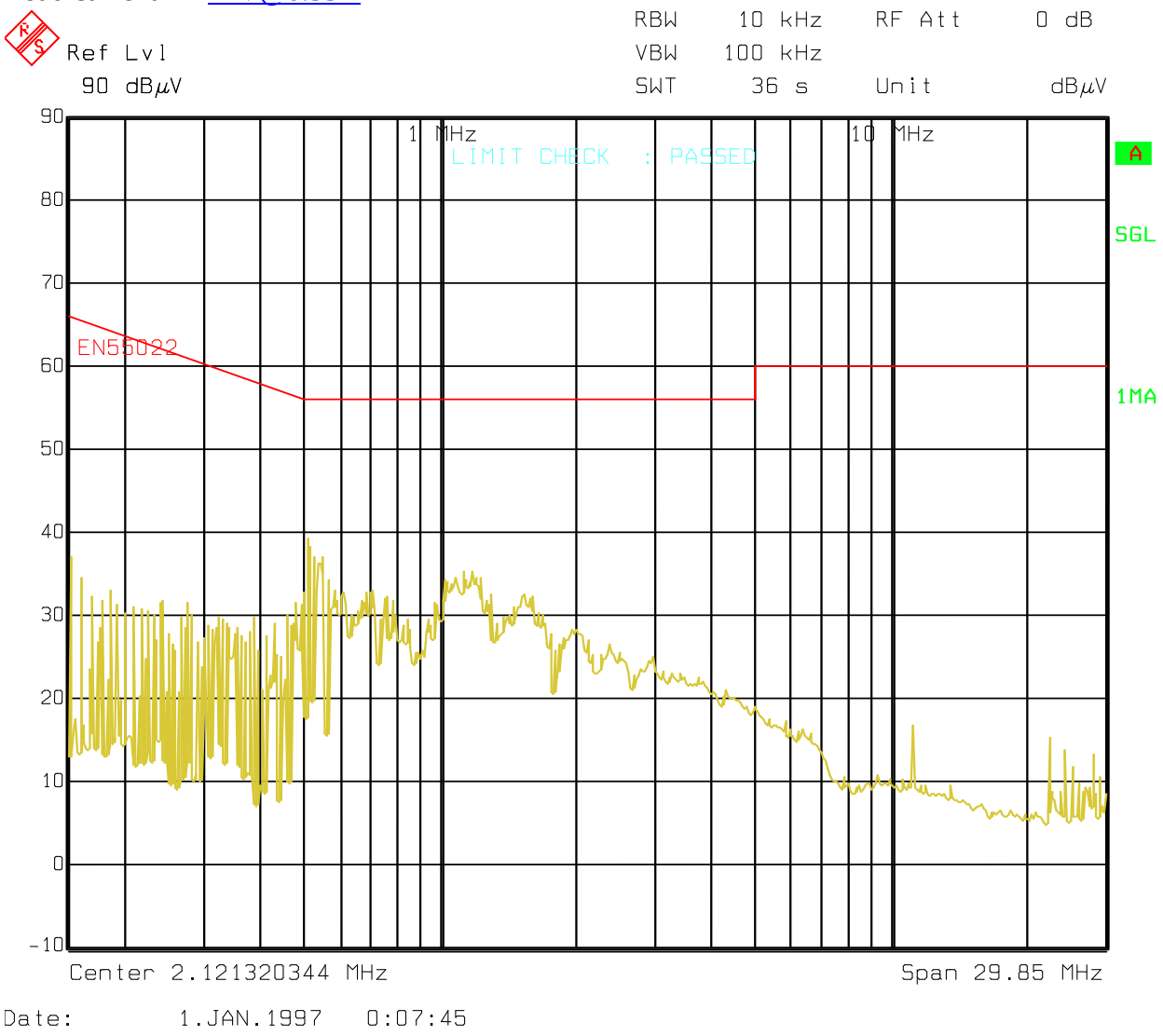
8 EMI Measurement

The graph below shows the conducted emission EMI noise and the EN55022 Class-B Quasi-Peak limits (measurement from the worst case line). The measurement is not certified. The load was connected to a LISN and an isolation transformer; the load was a power resistors. The receiver was set to Quasi-peak detector, 10 KHz bandwidth.

Input voltage = 110VAC
Load current = 12V@0.35A



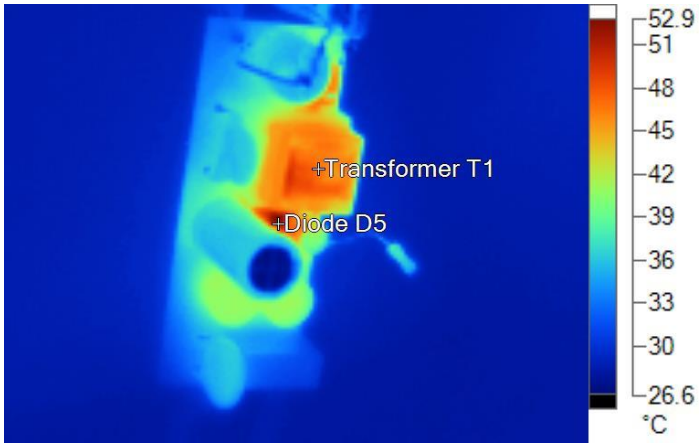
Input voltage = 230VAC
Load current = 12V@0.35A



9 Thermal Analysis

The images below show the infrared images taken from the FlexCam after 15min at full output power.

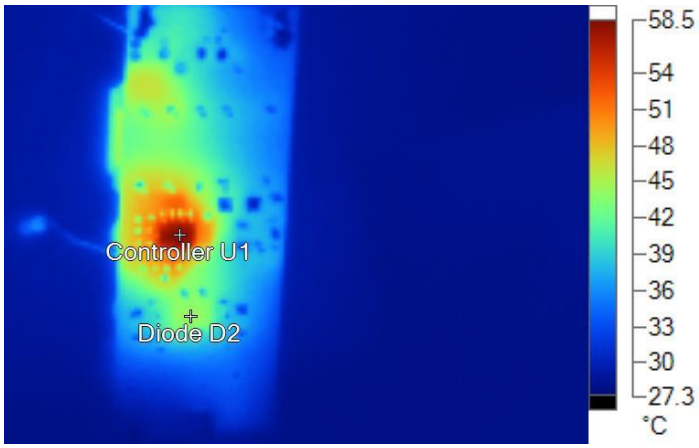
Input voltage = 85VAC
Output power = 12V@0.4A
Ambient temperature = 25°C
No heatsink, no airflow
TOP SIDE



85VAC 12V@0.4A top.is2

Name	Temperature	
Diode D5	52.5°C	
Transformer T1	47.1°C	

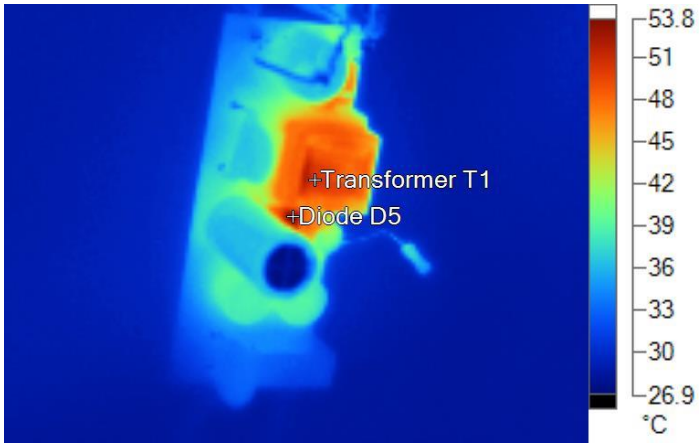
Input voltage = 85VAC
Output power = 12V@0.4A
Ambient temperature = 25°C
No heatsink, no airflow
BOTTOM SIDE



85VAC 12V@0.4A bottom.is2

Name	Temperature
Controller U1	58.5°C
Diode D2	44.3°C

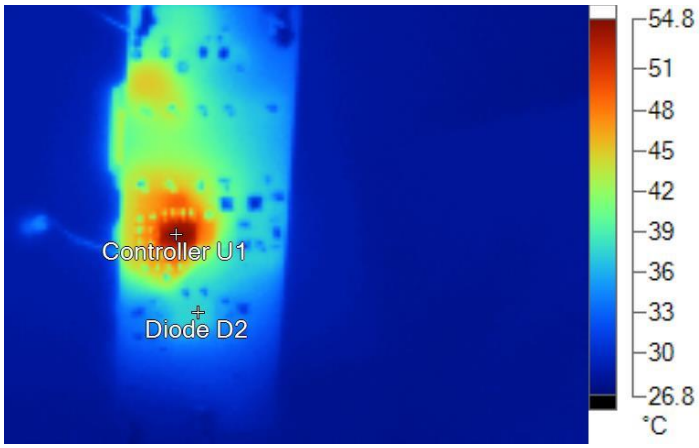
Input voltage = 265VAC
Output power = 12V@0.4A
Ambient temperature = 25°C
No heatsink, no airflow
TOP SIDE



Name	Temperature	
Transformer T1	50.9°C	
Diode D5	53.8°C	

265VAC 12V@0.4A top.is2

Input voltage = 265VAC
Output power = 12V@0.4A
Ambient temperature = 25°C
No heatsink, no airflow
BOTTOM SIDE



Name	Temperature
Controller U1	54.5°C
Diode D2	37.4°C

265VAC 12V@0.4A bottom.is2

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 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