

**Test Data
For PMP7895
1/16/2013**

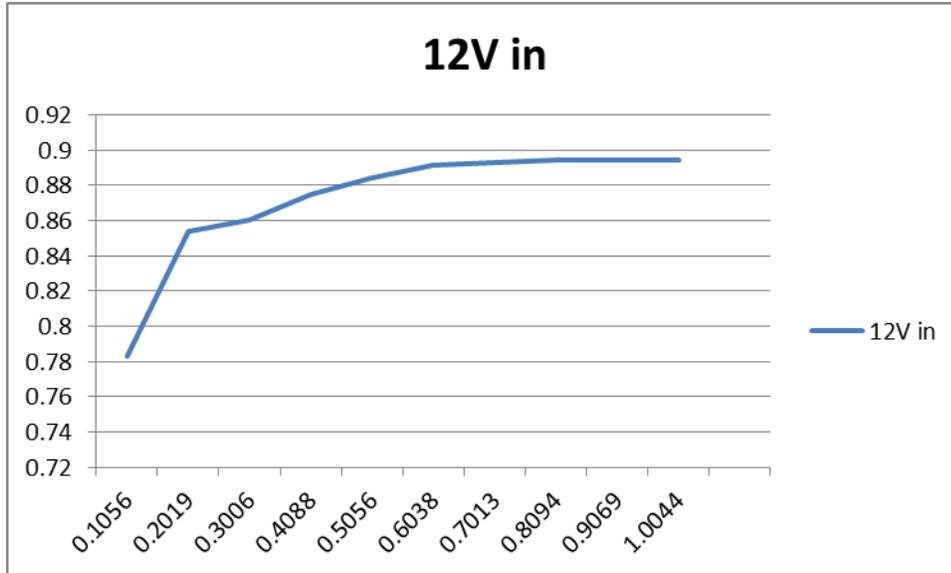


Test SPECIFICATIONS

Vin min	10.8
Vin max	13.2
Vout	12
Iout	1A Max
Fsw	200kHz

TYPICAL PERFORMANCE

EFFICIENCY

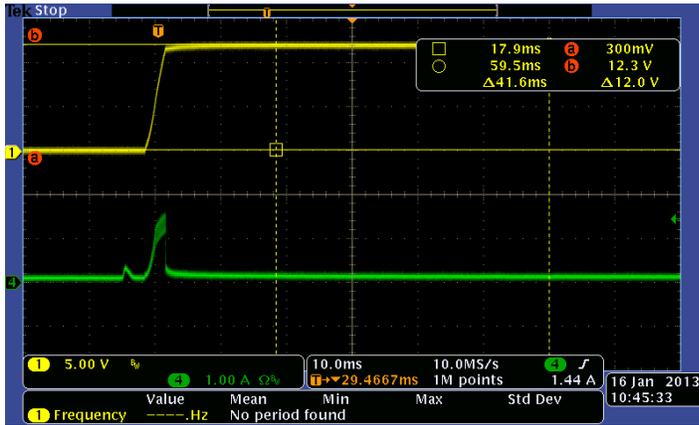


Vin	Iin	Vout	Iout	Pin	Pout	Ploss	Efficiency
12	0.134	11.924	0.1056	1.608	1.259174	0.348826	0.783069
12	0.235	11.924	0.2019	2.82	2.407456	0.412544	0.853708
12	0.347	11.921	0.3006	4.164	3.583453	0.580547	0.860579
12	0.464	11.92	0.4088	5.568	4.872896	0.695104	0.875161
12	0.568	11.92	0.5056	6.816	6.026752	0.789248	0.884207
12	0.673	11.92	0.6038	8.076	7.197296	0.878704	0.891196
12	0.78	11.919	0.7013	9.36	8.358795	1.001205	0.893034
12	0.899	11.918	0.8094	10.788	9.646429	1.141571	0.894181
12	1.007	11.918	0.9069	12.084	10.80843	1.275566	0.894442
12	1.115	11.916	1.0044	13.38	11.96843	1.41157	0.894502

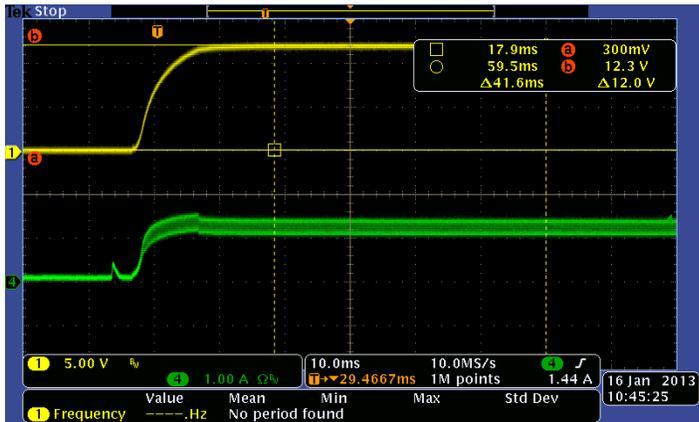
Placed RC on drain of the Reset MOSFET. Tuned RC Values to maximize efficiency. Efficiency improvement of 1% was observed by tuning the RC.

Waveforms

Startup

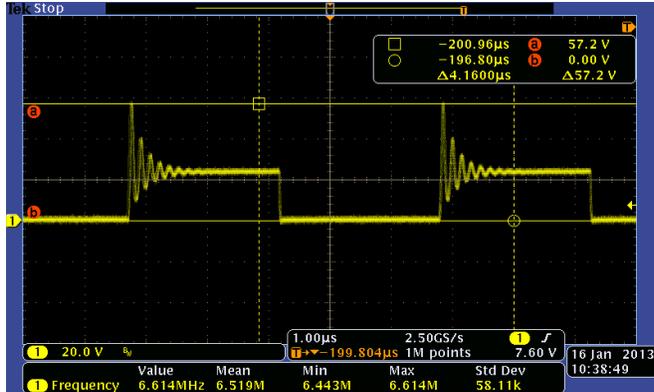


Startup into No Load (12Vin)



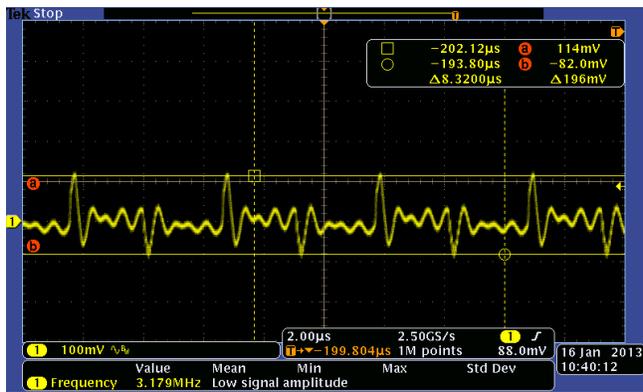
Startup into 1A Load (12Vin)

Primary-Side Switch Voltage

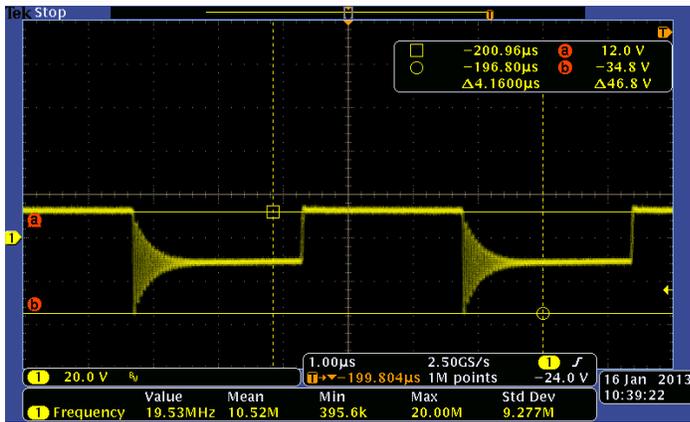


Primary-Side Switch Voltage at 12Vin and 1Aout (Energy spike does exceed the max VDS rating of MOSFET (40V)) – Recommend Infineon, BSZ042N06 as a direct higher voltage replacement. Another alternative for possible improvement in efficiency in the Infineon, BSZ067N06.

Output Voltage Ripple and Secondary-Side Switch Node

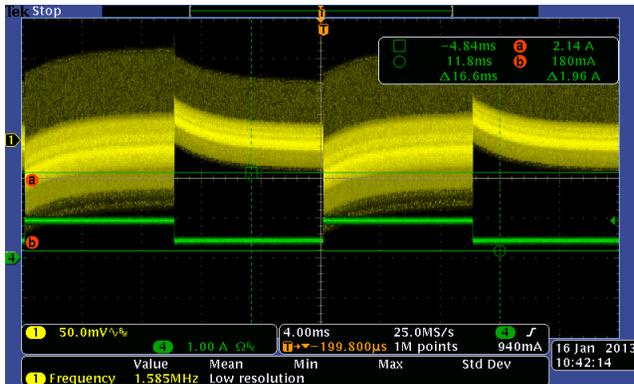


Output Voltage Ripple 12V in 1A out.



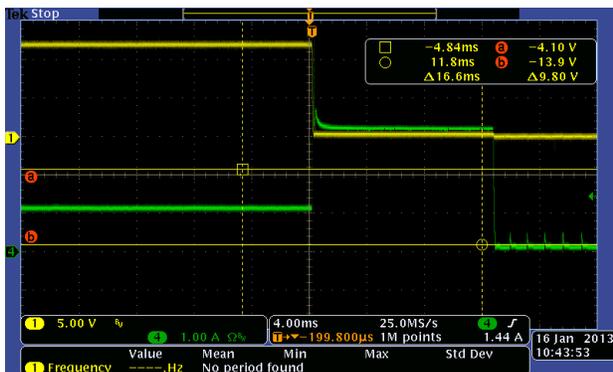
Secondary-Side Switch Node at 12Vin 1A load (ringing is exceeding max VRRM of diode (40V))
 Recommend On Semi, MBRD350 as a suitable replacement.

Load Transient Response



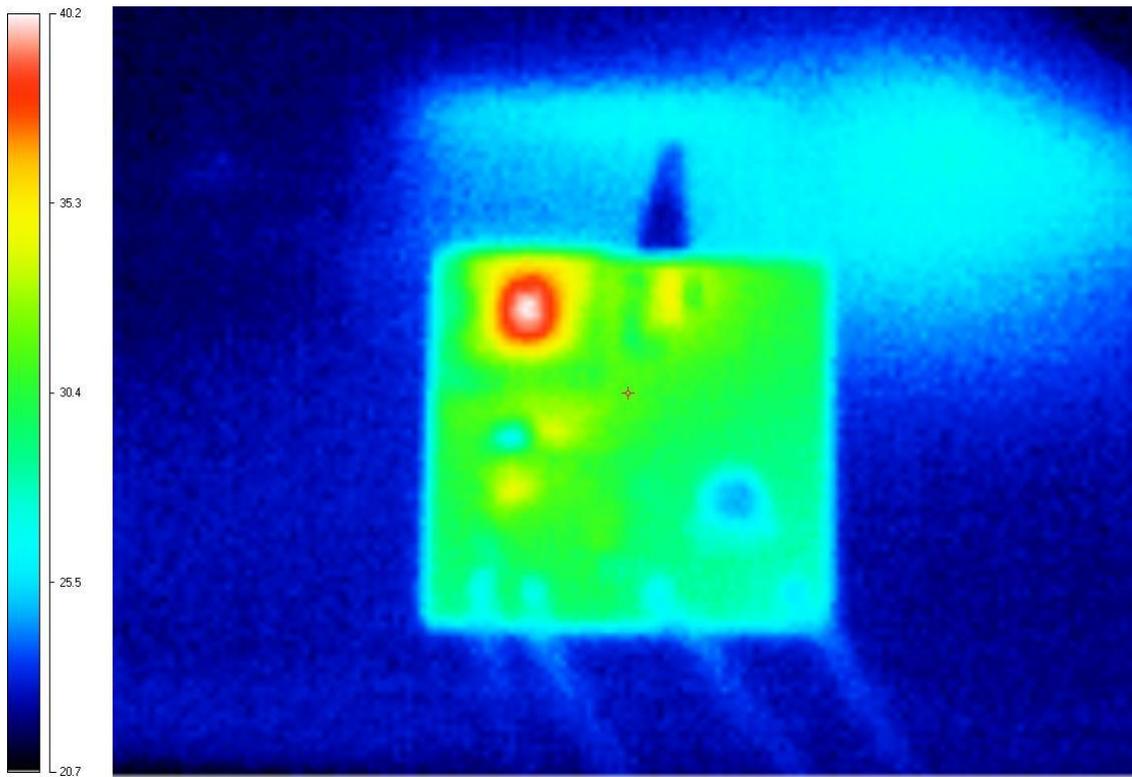
Undershoot at 12Vin 50%-to-100% Load Step (0.5A to 1A)

Short Circuit Test



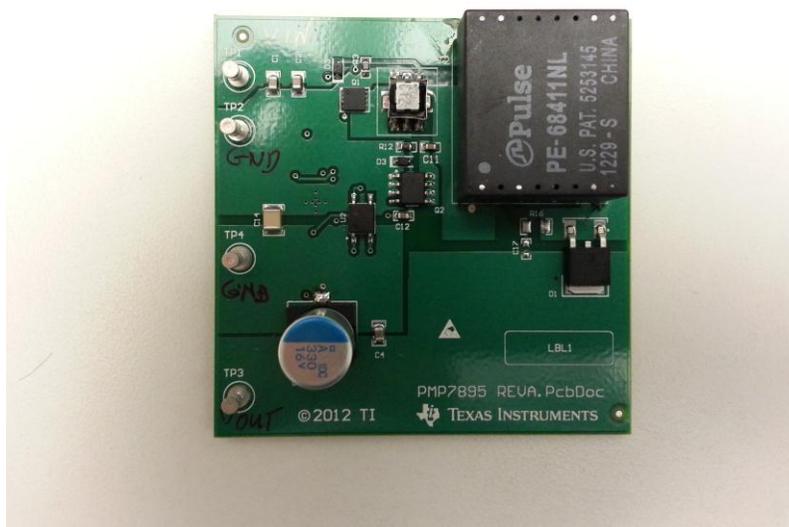
12Vin Shorted output.

Thermal Data



IR Thermal Image taken after running at 12V in, 1A load running for 15 Minutes; Room Temp = 24.5C

Board Photo



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