IJARSCT
ISSN (Online) 2581-9429
International Journal of Advanced Research in Science, Communication and Technology (IJARSCT)
International Open-Access, Double-Blind, Peer-Reviewed, Refereed, Multidisciplinary Online Journal
Impact Factor: 7.301
Volume 8, Issue 1, August 2023

Enhanced the Efficiency of AC to DC Power Adapter

Pooja Mangraiya[1] and Brijendra Mishra[2]
Department of ECE
Nagaji Institute of Technology & Management Gwalior, MP, India[1, 2]

Abstract: *AC to DC Power adapter or power converter is a vital area of research nowadays is efficiency enhancement. In this research work we designed two circuit of 45 watt AC to DC power adapter and we used different diode in both circuit. First circuit which we designed which we considerd as real circuit and we used 1N4148 diode in this circuit full bridge rectifier. And simulate this circuit in LTSPICE software. After analysis the result and using the latest Efficiency Enhancement, High-Frequency Operation, Wide Bandgap Semiconductors, Miniaturization and Integration, eliability and Lifetime, Digital Control Techniques, Power Factor Correction, Renewable Energy Integration, Multi-Port Converters, Harmonic Distortion and EMI, Smart Grid and Demand Response, Environmental Impact and Sustainability, Biomedical Applications, and Safety and Standardization factors because These areas of research collectively contribute to the advancement of AC to DC power conversion technology, making it more efficient, reliable, and adaptable to the evolving needs of various industries. We design second circuit which we consider as ideal circuit we used MURS320 diode ideal circuit full bridge rectifier. And we simulate this circuit in LTSPICE software and analysis the simulation result. We get 2.5% efficiency in ideal circuit of 45 watt AC to DC power adapter*

Keywords:. Wireless power transfer (WPT), Inductive power transfer (IPT), Conductive power transfer (CPT), Coupling facter (CF), Voltage-current characteristics (VI)

REFERENCES

[1]. Zeenal Aafreen Khan , Amjad Quazi , Mohd Abdulla on “Broad Band Low Noise Amplifier for Wireless Application Using Double Order Gain Flatting Technique” in Proceeding International conference on Recent Innovations is Signal Processing and Embedded Systems (RISE-2017) 27-29 October,2017 ISBN 978-1-5090-4760-4/17/$31.00©2017 IEEE

[2]. Israa Y. AbuShawish , Soliman A. Mahmoud on “Constant Tera-ohm Pseudo-resistor Over Wide Dynamic Range” in 978-1-6654-4067-7/21/$31.00 ©2021 IEEE Authorized licensed use limited to:UNIVERSITY OF WESTERN ONTARIO. Downloaded on May 26,2021 at 13:01:58 UTC from IEEE Xplore. Restrictions apply

[3]. Yajing Zhang1, Yan Li2, Member, IEEE, Jing Wang3, Jiuhe Wang1, Trillion Q. Zheng2, SeniorMember, IEEE, Qian Chen4 on “Investigations on Driver and Layout for Paralleled GaN HEMTs in Low VoltageApplication” in This article has been accepted for publication in a future issue of this journal, but has not been fully edited. Content may change prior to final publication. Citation information: DOI 10.1109/ACCESS.2019.2957190, IEEE Access

[4]. Branislav Dobrucky, Slavomir Kascak, Michal Prazenica, Miriam Jarabicova, Roman Konarik on “Computation and Comparison Power Losses of Three- and Five-Phase Converters (VSI) Based on Datasheet Characteristics” in 978-1-7281-2209-0/19/$31.00 ©2019 IEEE

[5]. Shahbaz Tahir , Muhammad Azmat Ali Rathore on “Medium Range Resonant Inductive Wireless Power Transfer” in 2020 IEEE Electric Power and Energy Conference (EPEC) | 978-1-7281-6489-2/20/$31.00 ©2020 IEEE | DOI: 10.1109/EPEC48502.2020.9320031

IJARSCT
ISSN (Online) 2581-9429
International Journal of Advanced Research in Science, Communication and Technology (IJARSCT)
International Open-Access, Double-Blind, Peer-Reviewed, Refereed, Multidisciplinary Online Journal
Impact Factor: 7.301
Volume 8, Issue 1, August 2023

[6]. Uvir Gordhan , Sampath Jayalath on "Wireless Power Transfer System for an Unmanned Aerial Vehicle" in 2021 12th Power Electronics, Drive Systems, and Technologies Conference (PEDSTC) | 978-1-6654-0366-5/20/$31.00 ©2021 IEEE | DOI: 10.1109/PEDSTC52094.2021.9405902

[7]. Gaurav Yadav , Soumya Shubhra Nag on "Review of Factors Affecting Current Sharing and Techniques for Current Balancing in Paralleled Wide Bandgap Devices" in 2020 3rd International Conference on Energy, Power and Environment: Towards Clean Energy Technologies | 978-1-6654-2536-0/21/$31.00 ©2021 IEEE | DOI: 10.1109/ICEPE50861.2021.9404434

[8]. ArashEdvinRisseh1_,Hans-PeterNee1,KonstantinKostov2 on Fast Switching Planar Power Module With SiC MOSFET sand Ultra-lo"Parasitic Inductance" in The 2018 International Power Electronics Conference "©2018 IEEJ

[9]. Yuliia Kozhushko, Tetiana Karbivska , Danijel Pavković , Oleksandr Bondarenko on "Peak Current Control of Battery-Supercapacitor Hybrid Energy Storage" in 978-1-6654-0501-0 31.00 ©2020 IEEE 2020 IEEE KhPI Week on Advanced Technology (KhPIWeek

[10]. Deniz Özenli , H.Hakan Kuntman on "MOS-Only Circuit Design Automation"in ISBN 978-1-4673-7835-2/16/$31.00©2016 IEEE IEEE Catalog Number CFP16LAS-ART VII Latin American Symposium on Circuits and Systems (LASCAS) 2016

[11]. Samah F. Milhem and Soliman A. Mahmoud on "CMOS Digitally Programmable Lock-in Amplifier for EEG Detection System"in 978-1-5386-0872-2/17/$31.00 ©2017 IEEE 2017 International Conference on Electrical and Computing Technologies and Applications (ICECTA)

[12]. Tasnim B. Nazzal and Soliman A. Mahmoud on "Low-Power Bootstrapped Sample and Hold Circuit for Analog-to-Digital Converters" in 978-1-5090-0916-9/16/$31.00 ©2016 IEEE 2016 IEEE 59th International Midwest Symposium on Circuits and Systems (MWSCAS), 16-19 October 2016, Abu Dhabi, UAE

[13]. Sangani Prasanth , Udaya Bhasker Manthati , Vishnu Sidharthan P , Srinivas Punna on "Efficient Interleaved Buck Converter Driver for LED Applications" in 978-1-5386-6971-6/19/$31.00 ©2019 IEEE ICSETS 2019

[14]. Cheikh Ibra Wade , Noriyuki Hayashi, Yu Fukamachi , Ryo Torihara, Tatsuya Sakoda , on "Numerical Analysis of I-V Characteristics and Diode Currents of a PV Modu" in 978-1-5090-2597-8/16/$31.00 ©2016 IEEE 2016 IEEE Region 10 Conference (TENCON) - Proceedings of the International Conference.

[15]. Asaf Jair Romero-Hern´andez, Juan Alfonso Salazar- , Torres and Gerardo Marx Ch´avez-Campos , Mario Iba˜nez Olvera on "A Desing of Digital Synchronization System for a Three-Phase Alternating Current Regulator" in 978-1-5386-5935-9/18/$31.00 c 2018 IEEE 2018 IEEE International Autumn Meeting on Power, Electronics and Computing (ROPEC 2018). Ixtapa, Mexico