

Semiconductor Components Group

Analog, Logic and Discretes

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Advanced Pulsed Mode GreenLine™
SMPS Controller



Introduction

The MC44608 is a high performance, very high voltage SWITCHMODE™ Power Supply (SMPS) controller designed for off-line switching regulator circuits. Offered in a DIP-8 package, this highly integrated device features a start-up current source eliminating the need for the start-up resistor which results in a lower current draw and an increase in the overall system efficiency for fast lossless start up. Also integrated into the MC44608 is an on-chip oscillator with switching frequencies of 40, 75 or 100KHz for fast lossless off-line start-ups. This high level of integration reduces the number of external components required and saves on board space.

The MC44608 is the latest addition to the GreenLine™ family of SMPS controllers that reduce power consumption of the end product in standby mode. By using the MC44608, this standby power consumption is lowered to approximately 1W in a 150W SMPS. This significant reduction happens as a result of the SMPS secondary reconfiguration which allows the unused output voltages to decrease while keeping the wake up block power supply nominal.

This SMPS controller also features multiple on-chip safety protection features such as demagnetization, current limitation, max duty cycle, thermal protection and open loop over-voltage protection.

Features / Benefits

- ◆ Integrated Start-Up Current Source for Fast Lossless Off-Line Start-Up
- ◆ Low Start-Up Current
- ◆ Programmable Pulsed Mode During Stand-By Operation
- ◆ On-Chip Oscillator Switching Frequency of 40, 75 or 100KHz
- ◆ Voltage Mode of Operation
- ◆ Secondary Feedback loop with few external components
- ◆ Multiple Protection Features (Demagnetization, Current Limitation, Thermal Protection, Max Duty Cycle, Over Vcc Protection against Open Loop and Open Loop Overvoltage Protection)
- ◆ GreenLine SMPS Controller
- ◆ Low dV/dT MOSFET Control for EMI Reduction

Types of Applications

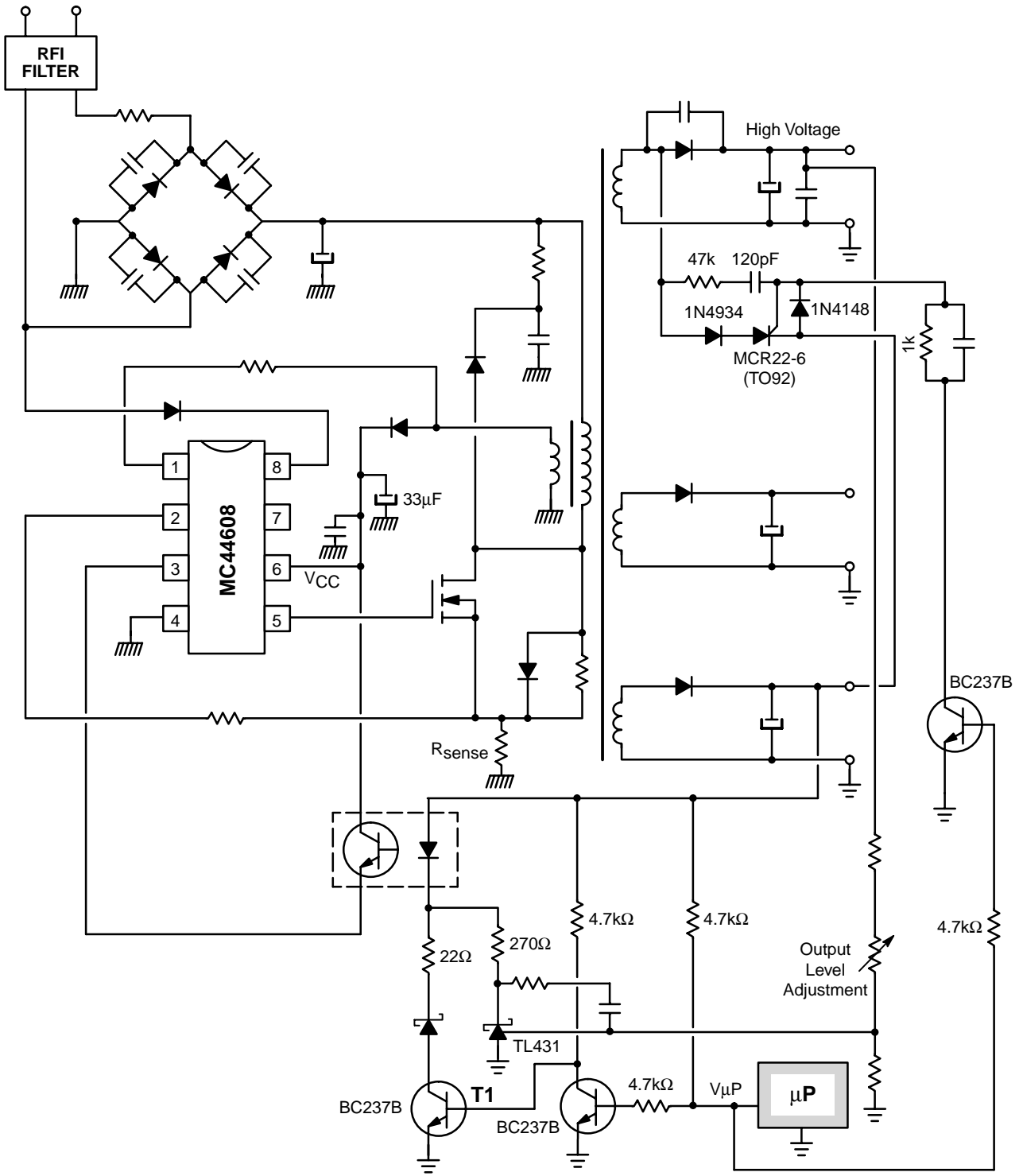
- ◆ TVs
- ◆ VCRs
- ◆ Monitors
- ◆ Printers, Fax machines, Copy Machines
- ◆ Off-Line Power Supplies up to 300W

Typical Application

MC44608 + MTP6N60E 80W Output SMPS

System Standby: 1.3W Input with 300mW Output

(See Schematic on Next Page)



Customer Benefits

- ◆ Low End Product Stand-By Power Consumption
 - can reach less than 1.3W in monitor during the OFF mode using secondary reconfiguration
- ◆ System Cost Savings
 - fewer external components required
- ◆ Inventory Cost Savings
- ◆ Smaller PCB and More Compact End Products
- ◆ EMI Standard Easily Achievable

Competitive Analysis

	MC44608	Competitor A
Package	DIP-8	DIP-14
Burst Duty Cycle	Adjustable	N/A
SMPS Regulation	Secondary	Primary/Secondary
Start Up Current	300 μ A	230 μ A
On/Off Pin	No	Yes

Literature

Data sheets containing full specifications and pin descriptions are available under the respective part numbers, followed by a “/D”. See the last page for detailed information on how to obtain technical literature.

Lead Time

Samples and production quantities are currently available. Pricing for the MC44608 SMPS Controller is suggested at \$0.75 for quantities of 10K.




How to Obtain Technical Literature

There are several ways to obtain Motorola Technical Literature and Publications. If you need any assistance, or if you are having difficulty, please email us at: SCGMKTG1@email.sps.mot.com or call us at (602) 244-3882. You can order hardcopies of this product bulletin from LDC - refer to document number [PBM44608/D](#).

- ◆ Motorola Semiconductor Literature Search Website <http://sps.motorola.com/cgi-bin/dlsrch>
- ◆ Motorola Literature Distribution Center, Americas
 - CD-ON-DEMAND, Literature Ordering <http://ldcformotorola.com/mtrl> (Motorolans, Distributors & Partners)
 - From US & Canada Only (Toll free) **1-800-441-2447**, email: ldcformotorola@hibbertco.com
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1-303-675-2130 (Tue-Fri 9:00am to 1:00pm, Hong Kong Time)
- ◆ Japan (Toll free within Japan) **0120-191014**, email: w3spd-tech@www.mot.co.jp
- ◆ Motorola Mfax™ Fax-Back System
 - From US & Canada Only (Toll free) **1-800-774-1848**, email: RMFAX0@email.sps.mot.com
 - From All Other Global Locations **1-602-244-6609**
- ◆ Motorola SPS Home Page <http://sps.motorola.com/cgi-bin/my-mot/moto.cgi/>
- ◆ SPS Sales and Support <http://sps.motorola.com/sps/General/sales.html/>
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