



## New Product Announcement

### AP3983B/C/D/E/R

# High-Performance Primary-Side Power Switcher for Off-Line SMPS

The AP3983B/C/D/E/R is a family of enhanced-performance power switchers delivering improved:

- Conversion efficiency
- Voltage & current accuracy
- Protection functions

The family regulates the output voltage and current on the primary side by piece-wise Pulse Frequency Modulation (p-PFM) in discontinuous conduction mode with an operating frequency up to 80kHz.

The AP3983B/C/D/E/R family has built-in fixed cable voltage compensation. Typical applications include chargers, Data-comms adapters and home appliance power supplies.

The AP3983B/C/R are packaged in SO-7, delivering output powers up to 10W and the AP3983C/D/E are packaged in PDIP-7, delivering powers up to 20W.



## The Diodes Advantage

- **Accurate Primary Side Regulation**  
Eliminates Opto-coupler and '431/CC-CV components, reducing overall BOM size and cost
- **Built-in MOSFET:**  
**650 BV<sub>DSS</sub> for AP3983B/C/D**  
**700 BV<sub>DSS</sub> for AP3983E/R**  
Reduces solution size; High-drain voltage meets wide AC input
- **Internal Output Cable Voltage Drop Compensation**  
Reduces external components and solution size
- **Switching Frequency Dithering Function**  
Improves EMC performance
- **Multi-Interval Pulse Frequency Modulation**  
Avoids audible noise
- **Hiccup Function**  
Improves Short Circuit Protection

## Applications

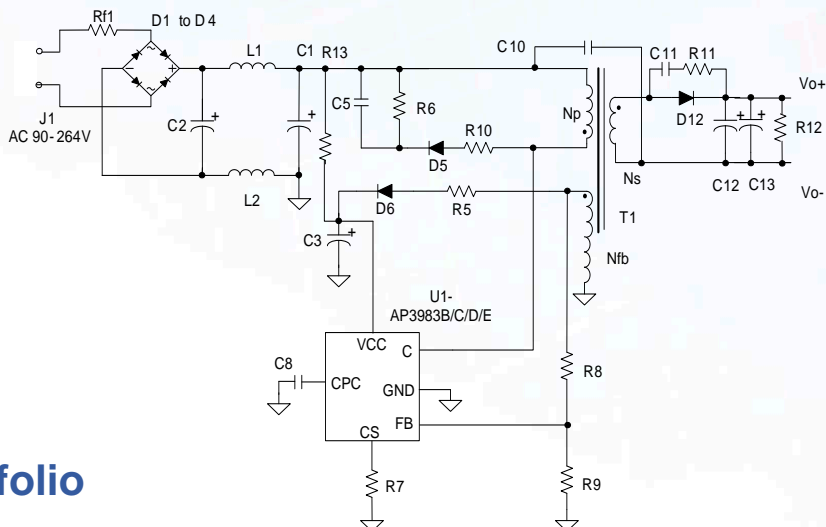
- <20W Adapters
- Appliance power supplies
- Data-comms adapters
- Chargers



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## AP3983B/C/D/E/R

### Typical Application Schematic



### Product Portfolio

Part Number	BVDSS (V)	Drain Current (A)	Startup Current (μA)	Operating Current (μA)	UVLO Threshold on/off (V)	Power Rating (W)	Standby Power (mW)	Package
AP3983B	650	1	0.6	650	15.5/6.8	Up to 6	75	SO-7
AP3983C	650	2	0.6	650	15.5/6.8	Up to 7.5	75	SO-7
AP3983C	650	2	0.6	650	15.5/6.8	Up to 10	75	PDIP-7
AP3983D	650	4	0.6	650	15.5/6.8	Up to 18	75	PDIP-7
AP3983E	700	5	0.6	650	15.5/6.8	Up to 20	75	PDIP-7
AP3983R	700	5	0.6	650	15.5/6.8	Up to 10	75	SO-7

Family page: [http://www.diodes.com/catalog/Primary\\_Side\\_Regulation\\_Switchers\\_143](http://www.diodes.com/catalog/Primary_Side_Regulation_Switchers_143)

Datasheets: <http://diodes.com/datasheets/AP3983R.pdf>  
[http://diodes.com/datasheets/AP3983B\\_C\\_D.pdf](http://diodes.com/datasheets/AP3983B_C_D.pdf)

### Ordering Information

Part Number	Package	Temperature Range	Marking ID	Packing
AP3983BMTR-G1	SO-7	-40°C to +85°C	3983BM-G1	4,000/Tape & Reel
AP3983CMTR-G1	SO-7	-40°C to +85°C	3983CM-G1	4,000/Tape & Reel
AP3983CP7-G1	PDIP-7	-40°C to +85°C	AP3983CP7-G1	50/Tube
AP3983DP7-G1	PDIP-7	-40°C to +85°C	AP3983DP7-G1	50/Tube
AP3983EP7-G1	PDIP-7	-40°C to +85°C	AP3983EP7-G1	50/Tube
AP3983RMTR-G1	SO-7	-40°C to +85°C	3983RM-G1	4,000/Tape & Reel