



# New Product Announcement

## AP7368

### Low-Noise LDO Regulator with Selectable 0.5A/1A Output Current Optimized for Portable Applications

The DIODES™ AP7368 is an ultra-low dropout linear regulator with high 80dB PSRR and is optimized for applications that require low-noise voltage rails while occupying only a very small space.

For increased versatility, the device has a selectable maximum output current of either 0.5A or 1A, allowing designs to optimize for the required output loads and thereby mitigating thermal or protection issues.

Built-in current-foldback varies with output current selection: 60mA for low-current mode and 110mA for high-current mode. This alleviates thermal-shutdown cycling during short-circuit fault conditions and helps protect the IC from damage.

The AP7368 has an active-high enable pin. Bringing this pin low disables the LDO and engages an active output-discharge circuit. This ensures that the system/rail always starts up in a known state.

The AP7368 is available in the tiny X-DFN1612-8 (Type B) package, which features an exposed thermal pad and occupies a PCB area of only 1.2mm x 1.6mm.

DIODES is a trademark of Diodes Incorporated in the United States and other countries.

The Diodes logo is a registered trademark of Diodes Incorporated in the United States and other countries.

© 2022 Copyright Diodes Incorporated. All Rights Reserved.



#### The Diodes Advantage

The AP7368 is a high-power-density and low-noise LDO for portable point-of-load (POL) applications.

- **High PSRR (80dB @ 1kHz) for  $V_{out} \geq 1.8V$**   
Rejects line-based noise in audio, video, and RF sub-systems
- **Ultra-Low (190mV) Dropout Voltage ( $V_{out} = 3.3V$ ,  $I_{out} = 1A$ )**  
Maximizes usable supply voltage range, particularly in battery-powered devices (this drops to 90mV at 500mA load current)
- **1.0% Output Accuracy from -40 to +85°C**  
Maintains accuracy under all conditions
- **Small Footprint, Low Thermal Impedance X1-DFN1612-8 Package ( $\theta_{JC} = 15.4 \text{ }^{\circ}C/W$ )**  
Suitable for high-power-density POL equipment
- **Wide Input Voltage: 1.7 V to 5.5 V**  
Supports standard rails and core-to-core LDO POL applications

#### Applications

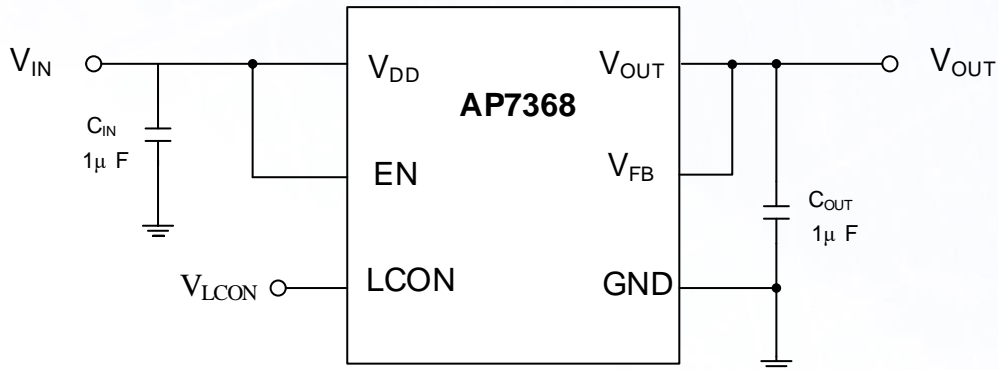
- Smartphones/tablets
- RF supplies
- Cameras
- Wireless adaptors
- Portable media players



# New Product Announcement

## AP7368

### Typical Application Circuit



Enable (EN) is active HIGH, defined as > 1.0V and disabled when EN < 0.4V.

The VFB pin is not for an adjustable voltage but instead monitors the output voltage externally, eliminating bond wire resistance errors.

### Low-Noise, Small-Footprint, LDO Product Portfolio

Part Number	V <sub>IN</sub>	V <sub>OUT</sub>	I <sub>OUT</sub>	V <sub>DROP</sub> @ Full Load	I <sub>Q</sub>	Output Accuracy	Enable	Power Good	Output Discharge	PSRR @1kHz	Package
	(V)	(V)	(mA)	(mV)	(µA)	(%)				(dB)	
<a href="#">AP7353</a>	2.0 to 5.5	1.8, 2.5, 2.8, 2.85, 2.9, 3.0, 3.1, 3.2, 3.3, 3.6, 4.5	250	142	18	1	Yes	No	Yes/No	90	X1-WLB0707-4, X2-DFN1010-4
<a href="#">AP7366</a>	2.2 to 6.0	ADJ, 1.0, 1.2, 1.5, 1.8, 2.0, 2.5, 2.8, 3.0, 3.3, 3.9	600	320	60	1	Yes	No	No	75	SOT25, U-DFN2020-6
<a href="#">AP7368</a>	1.7 to 5.5	0.9, 1.0, 1.2, 1.5, 1.8, 2.5, 2.8, 3.0, 3.3	500 1000	125	110	1	Yes	No	Yes	80	X1-DFN1612-8 (Type B)
<a href="#">AP7361E</a>	2.2 to 6.0	ADJ, 1.0, 1.2, 1.5, 1.8, 2.5, 3.3	1000	340	68	1	Yes	Yes	No	75	U-DFN3030-8 (Type E)

### Ordering Information

Orderable Part Number	Compliance (Only Automotive Supports PPAP)	Output Voltage	Package Code	Package	Moisture Sensitivity	Reel Size (Inches)	Quantity per Reel
<a href="#">AP7368D-09RS4-7</a>	Standard	0.9	RS4	X1-DFN1612-8 (Type B)	MSL-1	7	5000
<a href="#">AP7368D-10RS4-7</a>		1.0					
<a href="#">AP7368D-12RS4-7</a>		1.2					
<a href="#">AP7368D-15RS4-7</a>		1.5					
<a href="#">AP7368D-18RS4-7</a>		1.8					
<a href="#">AP7368D-25RS4-7</a>		2.5					
<a href="#">AP7368D-28RS4-7</a>		2.8					
<a href="#">AP7368D-30RS4-7</a>		3.0					
<a href="#">AP7368D-33RS4-7</a>		3.3					