New Product Announcement

AP64060Q

40V, 600mA, Synchronous Buck Converter Delivers High Efficiency in Automotive Point-of-Load (PoL) Applications

The DIODES™ AP64060Q is a 600mA synchronous buck converter with a wide input voltage range of 4.5V to 40V. The integrated 600mΩ high-side and 300mΩ low-side power MOSFETs provide high-efficiency step-down conversion.

The AP64060Q minimizes the external component count by its adoption of peak-current mode control along with an integrated loop compensation network, making it easy to design with and use.

The AP64060Q design is optimized for electromagnetic interference (EMI) reduction.

The device has a proprietary gate driver design to resist switching node ringing without sacrificing MOSFET turn-on and turn-off times. This reduces high-frequency radiated EMI noise caused by MOSFET switching.

The AP64060Q is available in the TSOT26 package.

Automotive compliant – AEC-Q100 grade 1 qualified in IATF 16949 certified manufacturing sites and supports PPAP documentation.

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The DIODES™ Advantage

The AP64060Q provides highly-efficient DC-DC conversion for automotive PoL applications.

- **Wide 4.5V to 40V Input Voltage Range**
  Works across the full automotive voltage range, including load dump
- **High Switching Frequency of 2.2MHz**
  Delivers reduced solution footprint beyond MW band frequency
- **Low (90µA) Quiescent Current (I_Q) and 1µA Shutdown Current**
  Enables systems to meet <100µA standby requirements of many automotive applications
- **Packaged in the TSOT26**
  Maintains a small footprint and is industry-standard

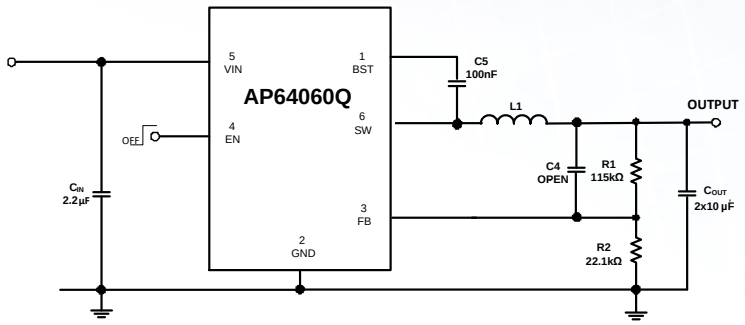
Automotive Applications

- Power systems
- Infotainment
- Instrument clusters
- Telematics
- Body electronics and lighting
- Advanced driver assistance systems (ADAS)

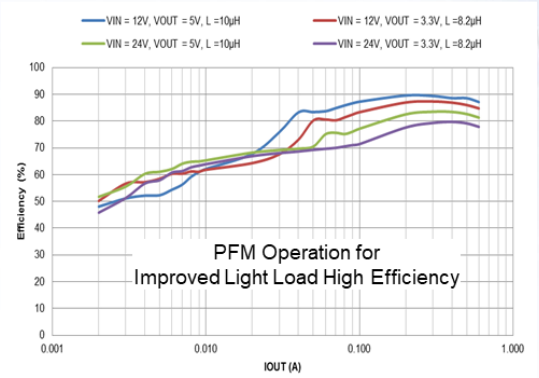
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Typical Application



Efficiency vs. Output Current



40V Automotive-Compliant Buck Converter Portfolio

Part Number	V_{IN} Range (V)	V_{OUT} Range (V)	Output Current (A)	LS / HS $R_{DS(ON)}$ (mΩ)	Switching Frequency (kHz)	I_Q (µA)	Key Features				Ambient Temperature (°C)	AEC-Q100 Grade	Package
							Adj. f_{SW}	Ext. Sync	Ext. Comp	Adj. SS			
AP64060Q	**3.8 – 40**	**0.8 - 24**	**0.60**	**600/300**	**2200**	**90**	**-**	**-**	**-**	**-**	**-40 to +125**	**1**	**TSOT26**
AP64100Q	3.8 – 40	0.8 - V_{IN}	1.0	150 / 80	100 - 2200	25	Y	Y	Y	-	-40 to +125	1	SO-8EP
AP64102Q							Y	Y	-	Y			
AP64200Q	3.8 – 40	0.8 - V_{IN}	2.0	150 / 80	100 - 2200	25	Y	Y	Y	-	-40 to +125	1	SO-8EP
AP64202Q							Y	Y	-	Y			
AP64350Q	3.8 – 40	0.8 - V_{IN}	3.5	75 / 45	100 - 2200	22	Y	Y	Y	-	-40 to +125	1	SO-8EP
AP64351Q					570		-	-	Y	Y			
AP64352Q					100 - 2200		Y	Y	-	Y			
AP64500Q	3.8 – 40	0.8 - V_{IN}	5.0	45 / 20	100 - 2200	25	Y	Y	Y	-	-40 to +125	1	SO-8EP
AP64501Q					570		-	-	Y	Y			
AP64502Q					100 - 2200		Y	Y	-	Y			

Ordering Information

Orderable Device	Package Code	Package	Moisture Sensitivity	Reel Size	Quantity
AP64060QWU-7	WU	TSOT26	MSL-1	7 inches	3,000