

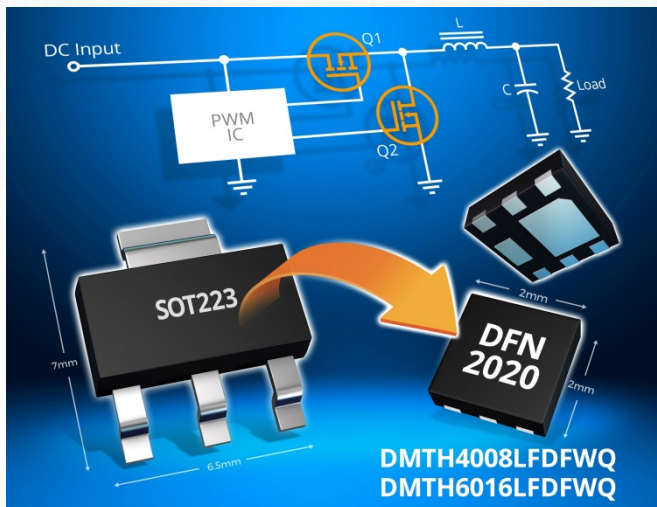
Automotive-Compliant Miniature MOSFETs Deliver Industry-Leading Performance

The 40V DMTH4008LFDFWQ and 60V DMTH6016LFDFWQ are automotive-compliant MOSFETs packaged in the tiny DFN2020 and rated to +175°C. The devices feature industry-leading $R_{DS(ON)}$ and gate charge.

These miniature MOSFETs occupy only 10% of the PCB area of larger packages, such as SOT223. This small size enables greater power density in DC-DC converters, LED backlighting, ADAS, and other 'under-the-hood' automotive applications.

When used in a typical application, such as a 12V 5A buck converter, the DMTH4008LFDFWQ dissipates 20% less power than comparable competitor MOSFETs. This significant improvement in efficiency provides automotive designers with greater flexibility and the freedom to increase power density in new or existing automotive applications.

The DMTH4008LFDFWQ has a typical $R_{DS(ON)}$ of 11.5mΩ at $V_{GS} = 10V$ and a gate charge, Q_G , of just 14.2nC. Similarly, the DMTH6016LFDFWQ has a typical $R_{DS(ON)}$ of 13.8mΩ at $V_{GS} = 10V$, and a Q_G of 15.2nC.



DIODES Advantage

- **Low Figure of Merit ($R_{DS(ON)} \times Q_G$)**
Minimizes power losses, increases efficiency
- **Maximum Junction Temperature of +175°C**
Ideal for use in high ambient temperature environments
- **Sidewall plated DFN2020**
For easy automated optical inspection (AOI)
- **PCB Footprint of just 4mm²**
Occupies just 10% of the PCB area of larger packages, such as SOT223
- **Automotive Compliant**
 - Qualified to AECQ-101
 - PPAP Capable
 - Manufactured in IATF16949:2016 certified facilities

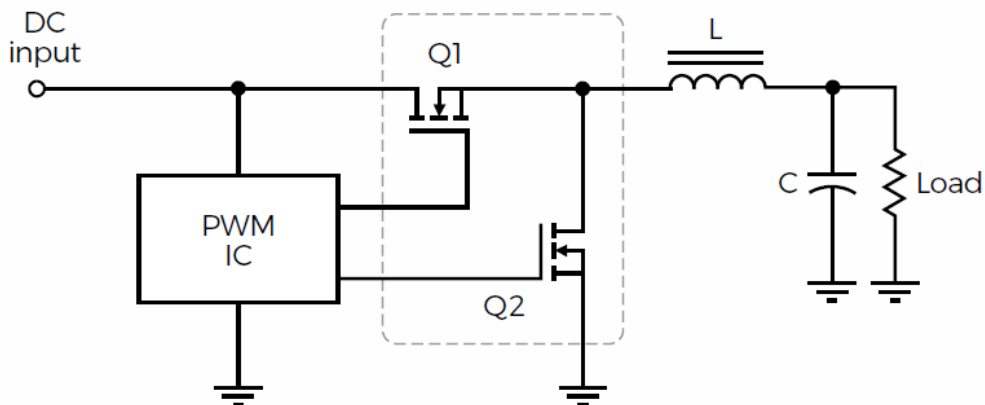
Circuit Function

- Synchronous Rectification

Applications

- Instrument Clusters
- Infotainment
- Head-Up Displays
- Driver Assistance System

Circuit Diagram



Product Portfolio

Product	Package	Polarity	V_{DS} (V)	V_{GS} (V)	I_b (A)	$V_{GS(TH)}$ (V)	$R_{DS(ON)}$ MAX (m Ω)		Q_g typ @ $V_{GS} = 10V$ (nc)	Typ. C_{ISS} (pF) @ $25V_{DSS}$	E_{AS} (mJ)	I_{AS} (A)	T_j (°C) Max
							@10V	@4.5V					
DMTH4008LFDFWQ	UDFN2020	N	40	20	11.6	1-3	11.5	18	14	1030	32	14.7	+175
DMTH6016LFDFWQ	UDFN2020	N	60	20	9	1-3	18	27.5	15.3	925	11.7	15.3	+175

Cross Reference (Near Equivalents)

Diodes	Nexperia	Vishay
DMTH4008LFDFWQ	BUK6D23-40E	SiAA40DJ
DMTH6016LFDFWQ	BUK6D43-60E	SiA106DJ