



New Product Announcement

DMTHxxxxSPGWQ

100V PowerDI®8080 Automotive MOSFET Sets Industry Benchmark for Ultra-Low $R_{DS(ON)}$ to Drive High-Power ICE & EV Applications

Diodes Incorporated (Diodes) expands its thermally efficient PowerDI8080-5 packaged MOSFET portfolio with the introduction of an industry-leading, ultra-low $R_{DS(ON)}$, automotive-compliant* 100V MOSFET, alongside 40V to 80V-rated MOSFETs. The portfolio is targeted at high-power BLDC motors and DC-DC converters in ICE, electric, and hybrid vehicles.

Applications such as battery disconnect switches, on-board chargers, and 48V high-power BLDC motor drive applications can reduce conduction losses and maximize efficiency by leveraging the 1.5mΩ maximum drain-source on-resistance of the 100V-rated DMTH10H1M7SPGWQ MOSFET.

The DMTH4M40SPGWQ 40V-rated gullwing-packaged MOSFET features a 0.4mΩ max. $R_{DS(ON)}$, one of the lowest in the industry. This is ideal for 12V BLDC motors and DC-DC applications. The 60V-rated DMTH6M70SPGWQ offers high performance for 24V applications.

The PowerDI8080-5 package has a PCB footprint of 64mm², which is 40% less than that occupied by the TO263 package format. It also has an off-board profile of 1.7mm, which is 63% lower than that of the TO263 (D2PAK).

The copper clip bonding between the die and the terminals facilitates a low junction-to-case thermal resistance as low as 0.3°C/W, enabling the PowerDI8080-5 to handle currents as high as 847A and deliver a power density eight times greater than the TO263 package.

Standard-compliance versions are also available and are suitable for industrial and commercial applications.

**Automotive-compliant - AEC qualified, manufactured in sites certified to IATF 16949 supporting PPAP documents.*

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The DIODES Advantage

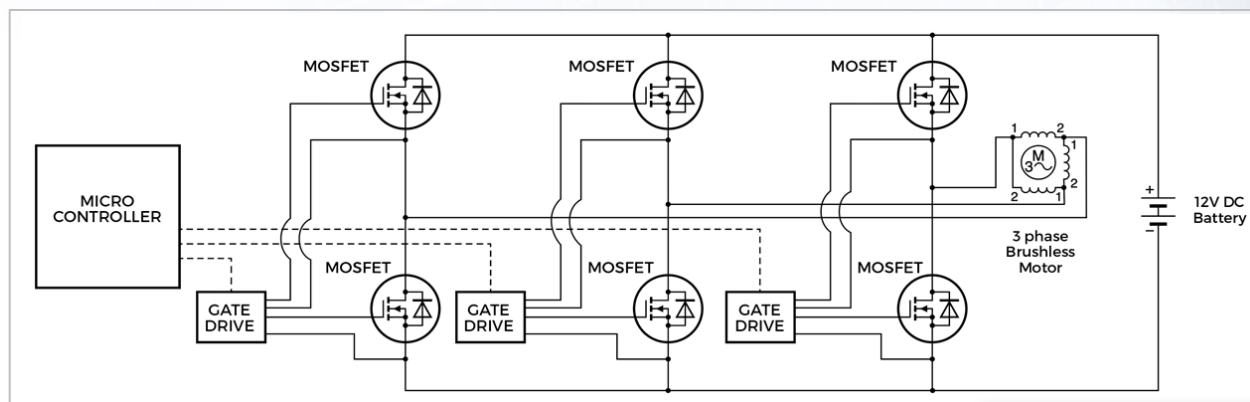
Leverage industry-leading $R_{DS(ON)}$ to reduce on-state losses and maximize efficiency in power-hungry automotive systems.

- **Industry-leading Ultra-Low $R_{DS(ON)}$**
Maximizes efficiency with 1.5mΩ on-resistance
- **R_{thJC} as Low as 0.3°C/W**
Enables current handling as high as 847A
- **PowerDI8080-5 PCB Footprint of 64mm²**
Occupies just 40% of the TO263's PCB area, facilitating higher power density designs
- **Low Package Inductance**
Clip design reduces parasitic inductance and EMI
- **Gullwing Leads**
Enables visual inspection by using AOI and improves high-temperature cycling reliability

Applications

- 48V steering and braking systems
- High-power DC-DC converters—disconnect switch
- Charging system applications
- High-power BLDC motor control

Typical Application



Product Portfolio

Part Number	BV _{DSS}	V _{GS}	Continuous Drain Current (A)		Max. R _{DS(ON)} @ V _{GS} = 10	C _{iss}	Package
	V	±V	Tc = 25°C	Tc = 100°C	mΩ	pF	
DMTH4M40LPGWQ	40	20	847	599	0.4	16,698	PowerDI8080-5
DMTH4M40SPGWQ	40	20	824	583	0.4	18,011	PowerDI8080-5
DMTH4M72SPGWQ	40	20	584	413	0.7	9,522	PowerDI8080-5
DMTH6M70SPGWQ	60	20	455	322	0.85	15,859	PowerDI8080-5
DMTH81M2SPGWQ	80	20	390	275	1.25	10,969	PowerDI8080-5
DMTH10H1M7SPGWQ	100	20	352	249	1.5	10,881	PowerDI8080-5

Ordering Information

Orderable Part Number	Compliance (Only Automotive Supports PPAP)	Package	Moisture Sensitivity	Packing	
				Quantity	Carrier
DMTH4M40LPGWQ-13	Automotive	PowerDI8080-5	MSL-1	2,000	Tape & Reel
DMTH4M40SPGWQ-13	Automotive	PowerDI8080-5	MSL-1	2,000	Tape & Reel
DMTH4M72SPGWQ-13	Automotive	PowerDI8080-5	MSL-1	2,000	Tape & Reel
DMTH6M70SPGWQ-13	Automotive	PowerDI8080-5	MSL-1	2,000	Tape & Reel
DMTH81M2SPGWQ-13	Automotive	PowerDI8080-5	MSL-1	2,000	Tape & Reel
DMTH10H1M7SPGWQ-13	Automotive	PowerDI8080-5	MSL-1	2,000	Tape & Reel