

Delphi Output Driver Module

▶ Description

The Delphi Output Driver Module (ODM) is a parallel interface driver module containing 7 DMOS power FETs. All outputs are fixed as low-side drivers and have built-in 50V inductive snub capabilities. Complete load diagnostics are provided covering shorts, opens, over-voltage shutdown, and over-temperature conditions. The ODM is commanded ON/OFF through a parallel interface, and interrogated for faults via a 5.4 Mhz serial SPI bus. External fault filtering is available via the FAULT B pin.

▶ Features

- One 0.5 ohm internal DMOS Driver
- Two 1.0 ohm internal DMOS Drivers
- Four 1.7 ohm internal DMOS Drivers
- Current Limit Protection of Internal DMOS Drivers
- Open and Shorted Load Fault Detection
- Independent Over Temperature Protection per Output
- Over Voltage Shutdown Protection
- SPI Bus Fault Interrogation

▶ Packaging

- 23-Pin JEDEC SIP
- Wire Type: Gold
- Wire Size: 2.0 mil

Delphi Output Driver Module

Recommended Operating Conditions		
Characteristic	Value	Unit
VIGN Supply Voltage	9 to 16	V
VDD Supply Voltage	4.75 to 5.25	V
Tab Temperature Range	-40 to 95	°C

Absolute Maximum Ratings			
Characteristic	Symbol	Value	Unit
Supply Voltage (CS, DI, DO, SCLK & PWMCLK)	VDD	0.3 to 7.0	V
VIGN Supply Voltage		-13 to 40	V
Current Limits of Outputs 1-4		2.75	A
Current Limits of Outputs 5 and 6		3.75	A
Current Limit of Output 7		6.25	A
Maximum Junction Temperature	Tj	150	°C
Operating Temperature Range	Tc	-40 to 125	°C
Storage Temperature Range		-65 to 150	°C

Electrical Performance Characteristics				
Characteristics	Condition	Min	Max	Unit
VDD Supply Current			5.0	mA
GD Supply Current	All Outputs On		1.5	mA
RDSon Outputs 1-4	Tj=150°C		2.1	Ohms
RDSon Outputs 5-6	Tj=150°C		1.2	Ohms
RDSon Outputs 7	Tj=150°C		0.6	Ohms
Current Limit Outputs 1-4		1.1	2.75	A
Current Limit Outputs 5-6		1.5	3.75	A
Current Limit Output 7		2.5	6.25	A
Outputs 1-7 Snub Voltage		50	65	V
FAULTB Filter Pulldown Current		40	80	mA
TTL Level Digital Input Thresholds		0.8	2.0	V
Outputs 1-7 Turn ON Slew Time		3.5	15	mS
Outputs 1-7 Turn OFF Slew Time		3.5	15	mS