

Delphi Pre-driver Serial Data Variable Reluctance Interface

► Description

The Delphi Pre-driver Serial Data Variable Reluctance Interface (PSVI) is a custom IC that is an up-integration of many automotive engine control functions. It is designed for use as a flip chip, in bare die (109 bumps), KGD applications. The CAN and ISO9141 bus drivers have slew rate control via an external C and/or R.

The CAN two-wire transceiver offers high speed to 500Kb/s, slope control for RFI reduction, and can drive up to 32 nodes. The serial port interface is a 56-bit shift register used by the host CPU to control the six LED drivers, set T1 and T2 times in the phased turn-on circuit, and read fault diagnostics of the output devices.

► Features

- CAN bus transceiver
 - Based on the CAN generic transceiver specification XDE4002
- Serial peripheral interface
 - Serial P interface which provides diagnostic information and LED driver control
- Low side FET pre-drivers
 - Fault detection and protection for short to battery or ground
 - Gate drive programmable via an external resistor
 - Charge pump or logic level gate drive
- Programmable phased turn-on ignition coil drive
 - Prevents "Ignition on make"
- 2 operational amplifiers
 - Electrical characteristics similar to LM358 or LM2904
- 6 low-side LED drivers
 - Output sink current 30mA DC
 - Fault detection and protection for shortened loads and short to ground
- Variable reluctance sensor interface
 - Variable threshold receiver
 - Adaptive loading
 - Digital filter
- 3 EST output drivers
 - Supports a single high voltage switch, ICE-4 DIS, 6-cylinder coil at plug, 6-cylinder DIS

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► Packaging

- Available in flip chip with 109 solder bumps (eutectic) for bare die KGD applications 3.94 x 8.99 mm with 10 mil spaced bumps

► Typical Applications

- Engine controls

Recommended Operating Conditions			
Characteristic	Symbol	Value	Unit
Supply Voltage	Vdd	4.75 to 5.25	V
Operating Temp. Range, Ambient	Ta	-40 to 150	°C

Absolute Maximum Ratings			
Characteristic	Symbol	Value	Unit
Supply Voltage	Vdd	-0.3 to 6.5	V
Supply Voltage	Vign	4.5 to 26.5	V
Input Voltage	Vin	-0.3 to +6.5	V
Storage Temp. Range	Tstg	-65 to 150	°C
Max. Junction Temp.		150	°C