

Fault Protected High-speed CAN FD Transceiver with Standby Mode

Features

- Meet the ISO 11898-2:2016 and SAE J2284-1 to SAE J2284-5 Physical Layer Standards
- Support CAN FD and Data Rates up to 5 Mbps
- Short propagation delay times and fast loop times
- 5 V power supply, I/O voltage range supports 3V to 5.5V MCU interface
- Very low current standby mode with bus wake-up capability
- Ideal passive behavior to CAN bus when unpowered
- Common-Mode Input Voltage: ± 30 V
- Protection feature:
 - IEC 61000-4-2 ESD protection up to ± 15 kV
 - Bus Fault protection: ± 70 V
 - V_{CC} and V_{IO} (V variants only) undervoltage protection
 - TXD dominant time-out function and Bus-dominant time-out function
 - Thermal shutdown protection
- Available in SOP8 package and leadless DFN3X3 package
- Qualified for Automotive Applications with AEC-Q100 Reliability Test

Applications

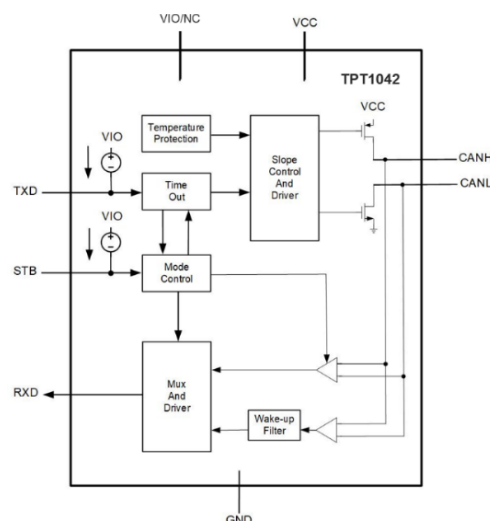
- All Devices Supporting Highly Loaded CAN Networks
- Automotive and Transportation
- Field Industrial Automation, Sensor and Drive Systems
- Building, Security Control Systems

Description

The TPT1042 is a CAN transceiver that meets the ISO11898 high-speed CAN (Controller Area Network) physical layer standard. The device is designed in CAN FD networks up to 5 Mbps and enhances timing margin and higher data rates in long and highly loaded networks. As the design, the device features cross-wire, overvoltage and loss of ground protection from -70 V to $+70$ V, overtemperature shutdown, and a -30 V to $+30$ V common-mode input Voltage range. The TPT1042V has a secondary power supply input for I/O level shifting the input pin thresholds and RXD output level. This family has low current standby mode with CAN BUS waked up capability. Additionally, all devices include many protection features to enhance the device and network robustness.

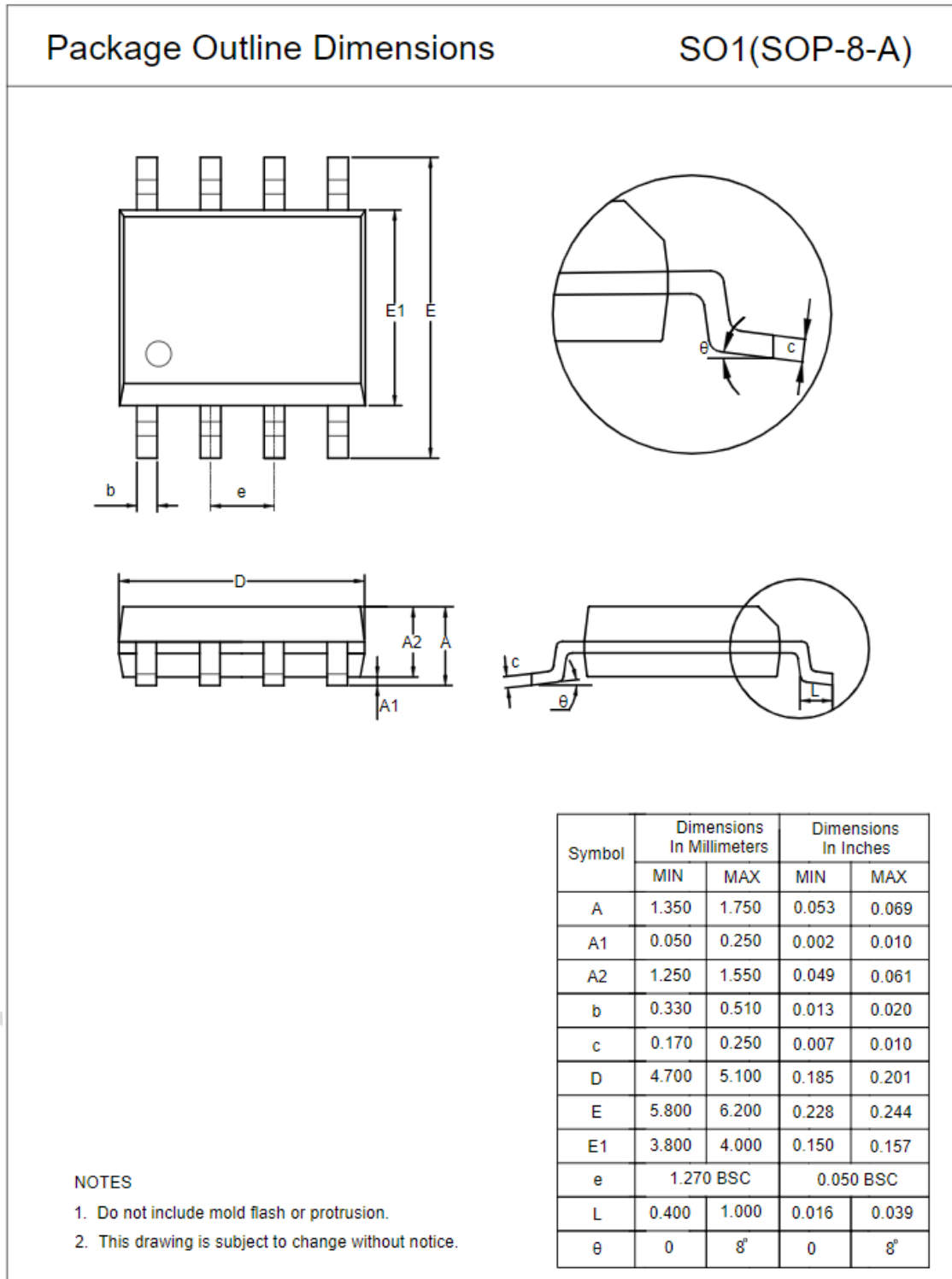
The TPT1042 and TPT1042V are available in SOP-8 and DFN3X3-8L packages and is characterized from -40°C to $+125^{\circ}\text{C}$.

Functional Block Diagram

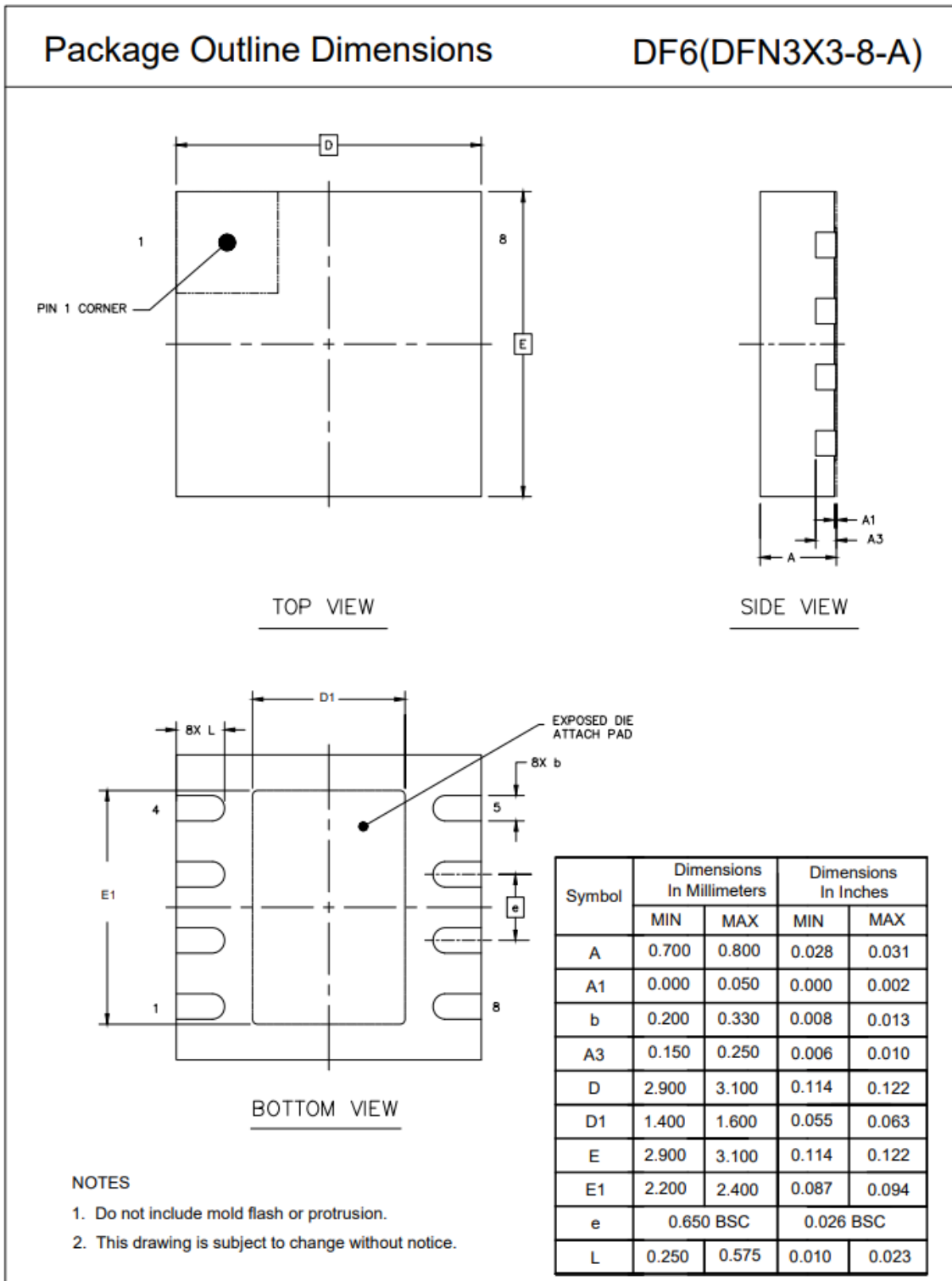


Package Outline Dimensions

SO1R(SOP-8)



DF6R (DFN3X3-8L)



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Transceiver with Standby Mode**
Order Information

Order Number	Operating Temperature Range	Package	Marking Information	MSL	Transport Media, Quantity	Eco Plan
TPT1042V-SO1R-S ⁽¹⁾	-40 to 125°C	SOP8	T42VQ	MSL1	Tape and Reel, 4000	Green
TPT1042V-DF6R-S ⁽¹⁾	-40 to 125°C	DFN3x3-8	T42VQ	MSL1	Tape and Reel, 4000	Green
TPT1042-SO1R-S ⁽¹⁾	-40 to 125°C	SOP-8	1042Q	MSL1	Tape and Reel, 4000	Green
TPT1042-DF6R-S ⁽¹⁾	-40 to 125°C	DFN3x3-8	1042Q	MSL1	Tape and Reel, 4000	Green
TPT1042V-SO1R ⁽¹⁾	-40 to 125°C	SOP8	T42VQ	MSL1	Tape and Reel, 4000	Green
TPT1042V-DF6R ⁽¹⁾	-40 to 125°C	DFN3x3-8	T42VQ	MSL1	Tape and Reel, 4000	Green
TPT1042-SO1R ⁽¹⁾	-40 to 125°C	SOP-8	1042Q	MSL1	Tape and Reel, 4000	Green
TPT1042-DF6R ⁽¹⁾	-40 to 125°C	DFN3x3-8	1042Q	MSL1	Tape and Reel, 4000	Green

(1) Future product, contact 3PEAK factory for more information and sample

(2) Green: 3PEAK defines "Green" to mean RoHS compatible and free of halogen substances.

(3) MSL will be updated depending on the qualification report.

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[TLE7250GXUMA2](#) [MCP2544FDT-H/MNY](#) [MCP2542WFDT-E/MNY](#) [MCP25625T-E/SS](#) [MCP2542FDT-E/MNY](#) [TLE9251VSJXUMA1](#)