



High Performance Synchronous CV/CC Buck Converter

GENERAL DESCRIPTION

The DF2601 is a High Efficiency Synchronous DCDC Buck Converters with CV / CC modes, which can output up to 3.5 A in a wide input range from 6 V to 30 V. The DF2601 operates either in CV (Constant Voltage) mode or CC (Constant Current) mode. With the CV / CC mode, adjustable output voltage, The DF2601 is particularly suitable for QC 2.0 / 3.0 (12 V / 1.5 A, 9 V / 2 A and 5 V / 3 A), Type-C PD (5 V / 3 A) and Apple portable device (5 V / 2.4 A) applications. The output voltage can be programmed through the FB pin respectively. In order to achieve better EMI performance, the switching frequency was fixed at 165 kHz. Features such as output cord voltage drop compensation is especially suitable for car charger. DF2601 is available in SOP8-EP package which is beneficial for compact solution as well as thermal dissipation.

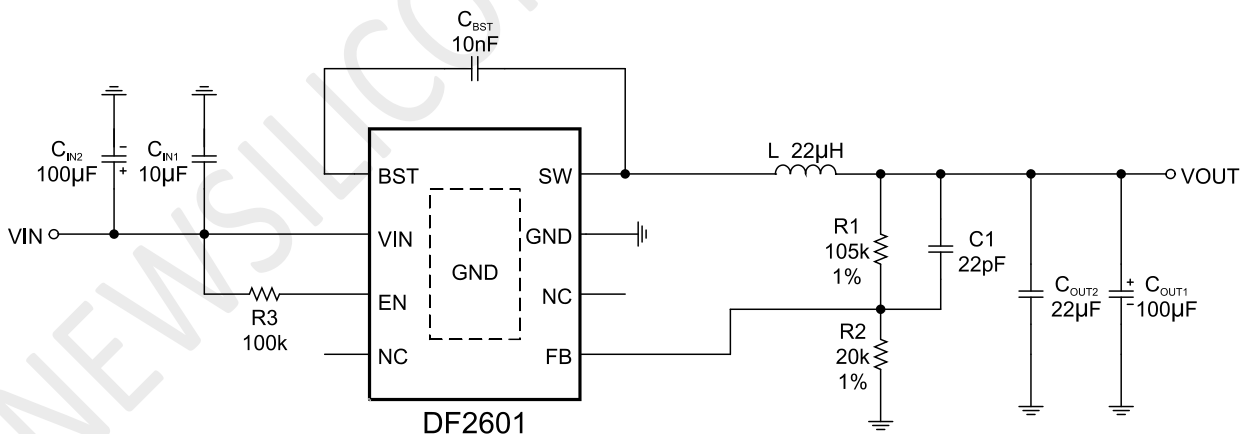
FEATURES

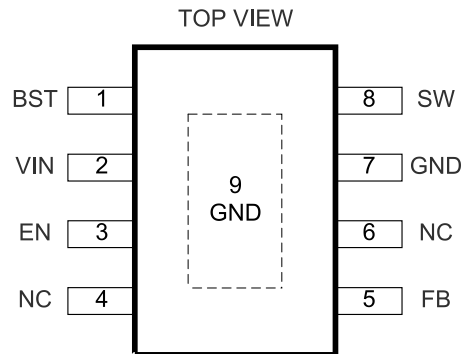
- Wide Input Voltage Range: 6V ~ 30V
- Low $R_{DS(ON)}$ for Internal Switches (Top/Bottom): 90mΩ/65 mΩ
- Up to 3.5A output current capability
- Up to 94 % Efficiency
- 165kHz Switching Frequency Minimize the External Components
- Internal 1.5-ms Soft-Start
- Compensation for Output Cord Voltage Drop
- Input Under Voltage Lockout I
- Input Over Voltage Protection
- Cycle by Cycle Peak Current Limit
- Thermal Shutdown
- Thermally Enhanced SOP8-EP Package

APPLICATION

- Car Charger
- Portable Charging Devices
- CV / CC regulation DC / DC converter

TYPICAL APPLICATIONS



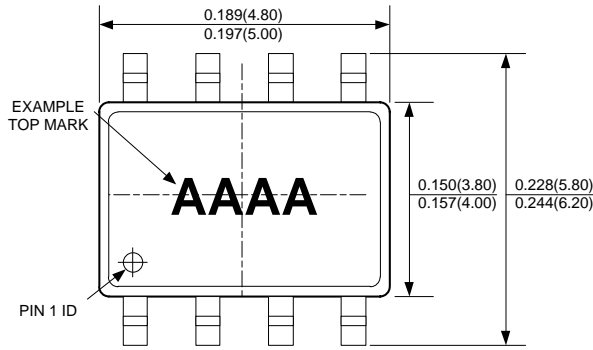
PIN CONFIGURATION

PIN DESCRIPTIONS

PIN	NAME	DESCRIPTION
1	BST	Boot-Strap Pin. Supply high side gate driver. Decouple this pin to SW pin with 10nF ceramic cap.
2	VIN	Supply Voltage. The DF2601 operates from a 6V to 30V input rail. Requires C_{IN} to decouple the input rail. Connect using a wide PCB trace.
3	EN	Pull High to enable the DF2601. For automatic start-up, connect EN to IN using a resistor. Do not float.
4	NC	NC
5	FB	Output Feedback Pin. Connect this pin to the center point of the output resistor divider to program the output voltage
6	NC	NC
7	GND	System Ground. Reference ground of the regulated output voltage: requires extra care during PCB layout. Connect to GND with copper traces and vias.
8	SW	Switch Output. Connect using a wide PCB trace.
9	GND	EPAD, connect to GND

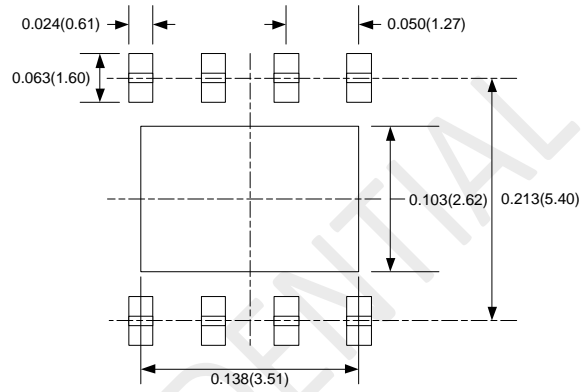


PACKAGE

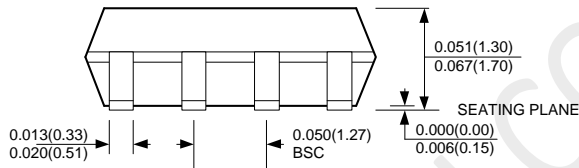
SOP8(EXPOSED PAD)



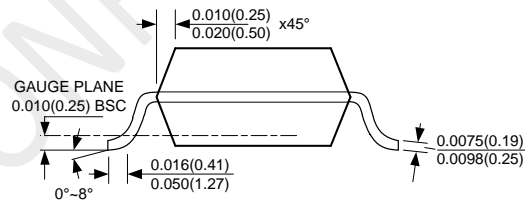
TOP VIEW



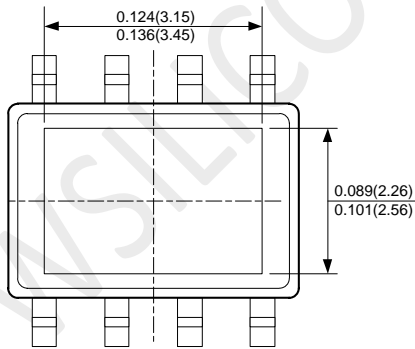
RECOMMENDED SOLDER PAD LAYOUT



FRONT VIEW



SIDE VIEW



BOTTOM VIEW

- NOTE:
- 1) CONTROL DIMENSION IS IN INCHES. DIMENSION IN BRACKET IS IN MILLIMETERS.
 - 2) PACKAGE LENGTH DOES NOT INCLUDE MOLD FLASH, PROTRUSIONS OR GATE BURRS.
 - 3) PACKAGE WIDTH DOES NOT INCLUDE INTERLEAD FLASH OR PROTRUSIONS.
 - 4) LEAD COPLANARITY (BOTTOM OF LEADS AFTER FORMING) SHALL BE 0.004" INCHES MAX.
 - 5) DRAWING CONFORMS TO JEDEC MS-012, VARIATION BA.
 - 6) DRAWING IS NOT TO SCALE.

