CS2841B

Automotive Current Mode PWM Control Circuit

Features

PDIP-8
N SUFFIX
CASE 626

PIN CONNECTIONS AND MARKING DIAGRAM€

CS2841B	= Device Code
A	= Assembly Location
WL	= Wafer Lot
YY, Y	= Year
WW	= Work Week
G	= Pb-Free Package

*For additional information on our Pb-Free strategy and soldering details, please download the ON Semiconductor Soldering and Mounting Techniques Reference Manual, SOLDERRM/D.

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CS2841B/D

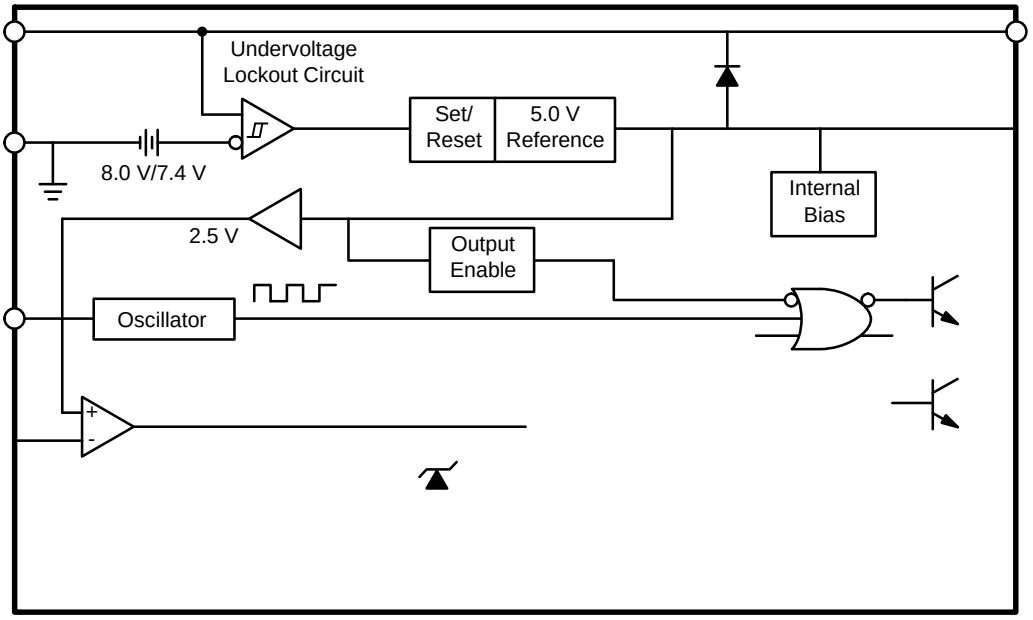


Figure 1. Block Diagram

ELECTRICAL CHARACTERISTICS (-40°C ≤ T_A ≤ 85°C, R_T = 680 kΩ, C_T = 0.022 μF for Triangular Mode, V_{CC} = 15 V (Note 3), R_T = 10 kΩ, C_T = 3.3 nF for Sawtooth Mode (see Figure 7); unless otherwise specified.)

Characteristic	Test Conditions	Min	Typ	Max	Unit
Reference Section					
Output Voltage	T_J = 25°C, I_{OUT} = 1.0 mA	4.9	5.0	5.1	V
Line Regulation	8.4 ≤ V_{CC} ≤ 16 V	-	6.0	20	mV
Load Regulation	1.0 ≤ I_{OUT} ≤ 20 mA	-	6.0	25	mV
Temperature Stability	Note 4	-	0.2	0.4	mV/°C
Total Output Variation	Line, Load, Temp. Note 4	4.82	-	5.18	V
Output Noise Voltage	10 Hz ≤ f ≤ 10 kHz, T_J = 25°C. Note 4	-	50	-	μV
Long Term Stability	T_A = 125°C, 1000 Hrs. Note 4	-	5.0	25	mV
Output Short Circuit	T_A = 25°C	-30	-100	-180	mA
Oscillator Section					
Initial Accuracy	Sawtooth Mode: T_J = 25°C. See Figure 7. Sawtooth Mode: -40°C ≤ T_A				

CS2841B

TYPICAL PERFORMANCE CHARACTERISTICS

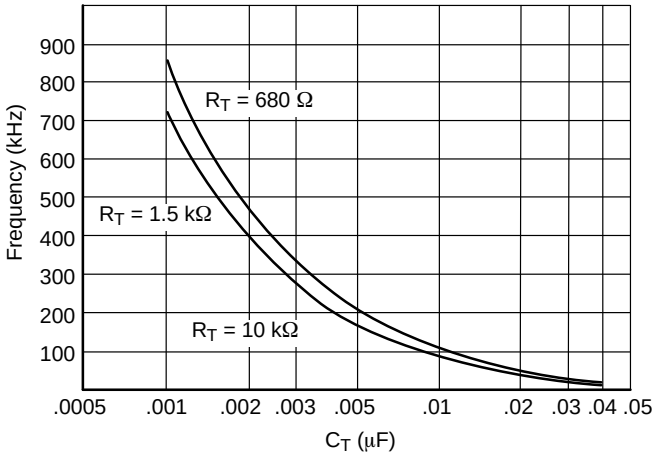


Figure 2. Oscillator Frequency vs. C_T

Figure 3. Oscillator Duty Cycle vs. R_T

CIRCUIT DESCRIPTION

Undervoltage Lockout

ON/OFF Command
to Reset of IC

Figure 5. Typical Undervoltage Characteristics

$$t_c = R_T C_T \ln\left(\frac{V_{REF} - V_{lower}}{V_{REF} - V_{upper}}\right)$$

$$t_d = R_T C_T \ln\left(\frac{V_{REF} - I_d R_T - V_{upper}}{V_{REF} - I_d R_T - V_{lower}}\right)$$

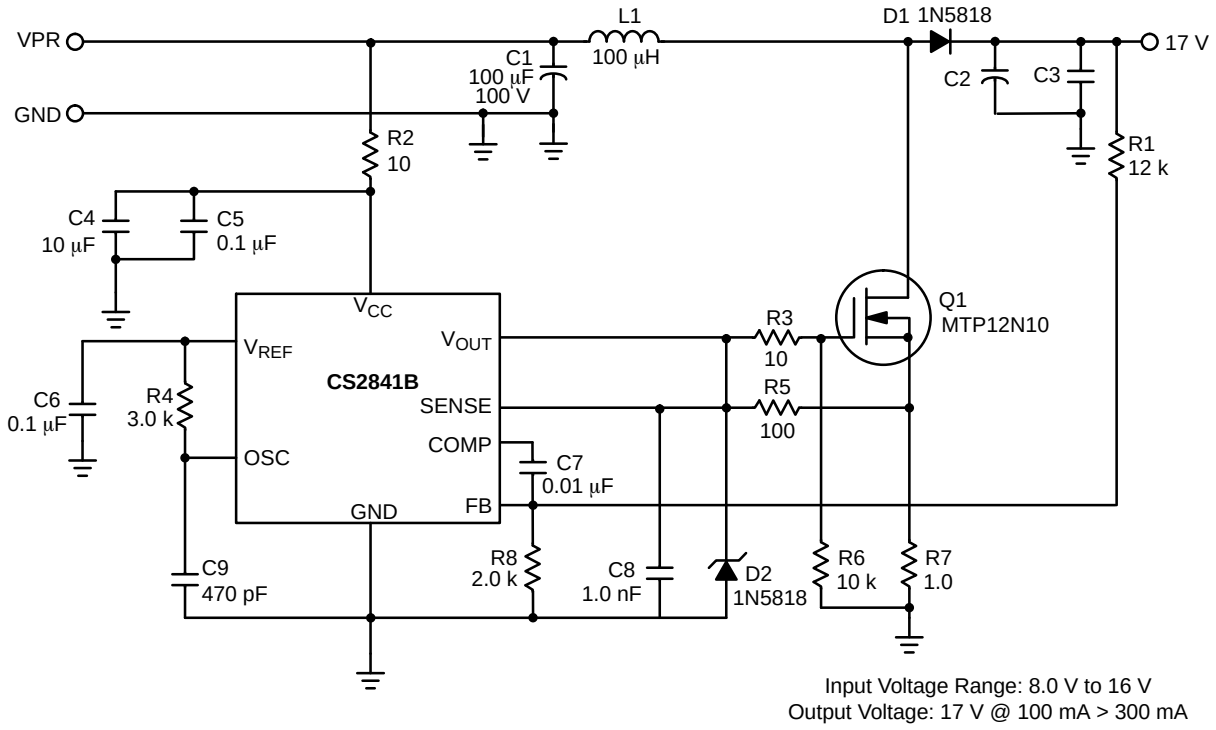
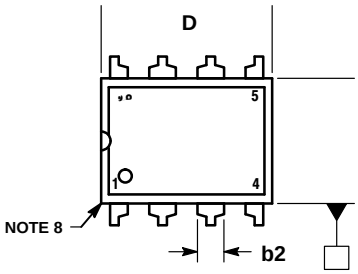
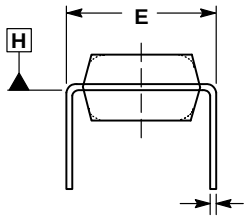


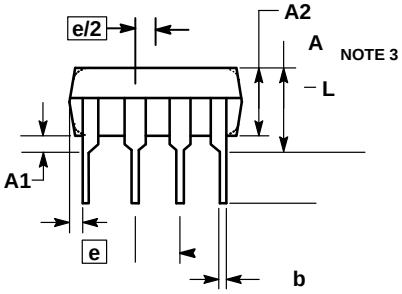
Figure 9. Boost Application

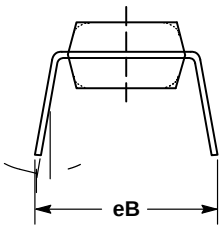
PDIP 8



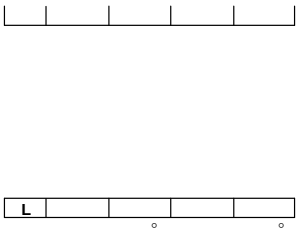


NOTE 5

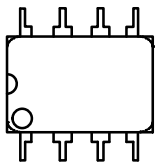


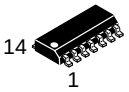


Ⓜ B Ⓜ NOTE 6



GENERIC MARKING DIAGRAM*





SCALE 1:1

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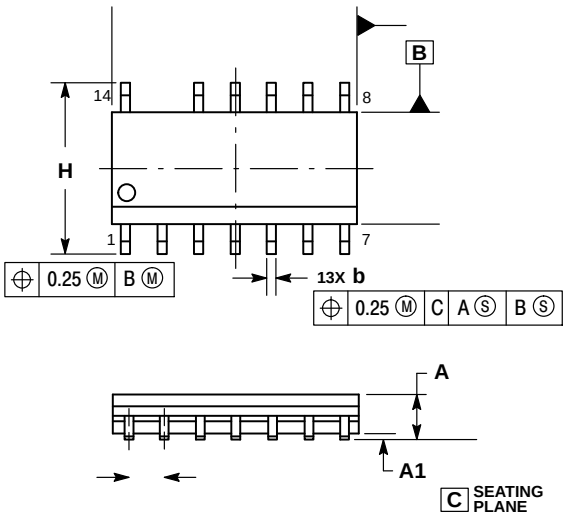
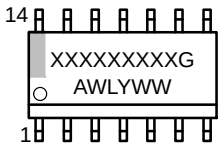


NOTES:
1. DIMENSIONING AND TOLERANCING PER ASME Y14.5M, 1994.
2. CONTROLLING DIMENSION: MILLIMETERS.
3. DIMENSION b DOES NOT INCLUDE DAMBAR PROTRUSION. ALLOWABLE PROTRUSION SHALL BE 0.13 TOTAL IN EXCESS OF AT MAXIMUM MATERIAL CONDITION.
4. DIMENSIONS D AND E DO NOT INCLUDE MOLD PROTRUSIONS.
5. MAXIMUM MOLD PROTRUSION 0.15 PER SIDE.

GENERIC
MARKING DIAGRAM*



XXXXX = Specific Device Code
A = Assembly Location
WL = Wafer Lot
Y = Year
WW = Work Week
G = Pb−Free Package

STYLES ON PAGE 2

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STYLE 7:
PIN 1. ANODE/CATHODE
2. COMMON ANODE
3. COMMON CATHODE
4. ANODE/CATHODE
5. ANODE/CATHODE