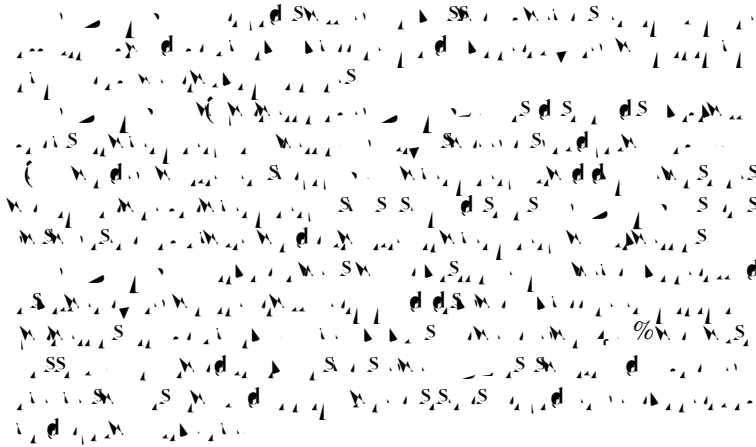


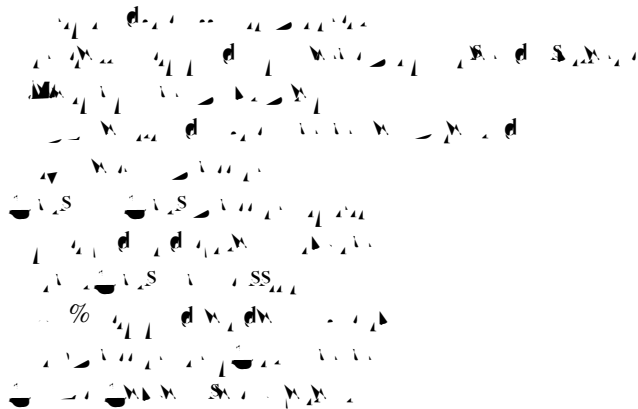
# CS2841B

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## Automotive Current Mode PWM Control Circuit



### Features



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PDIP-8  
N SUFFIX  
CASE 626

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### 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.

# CS2841B

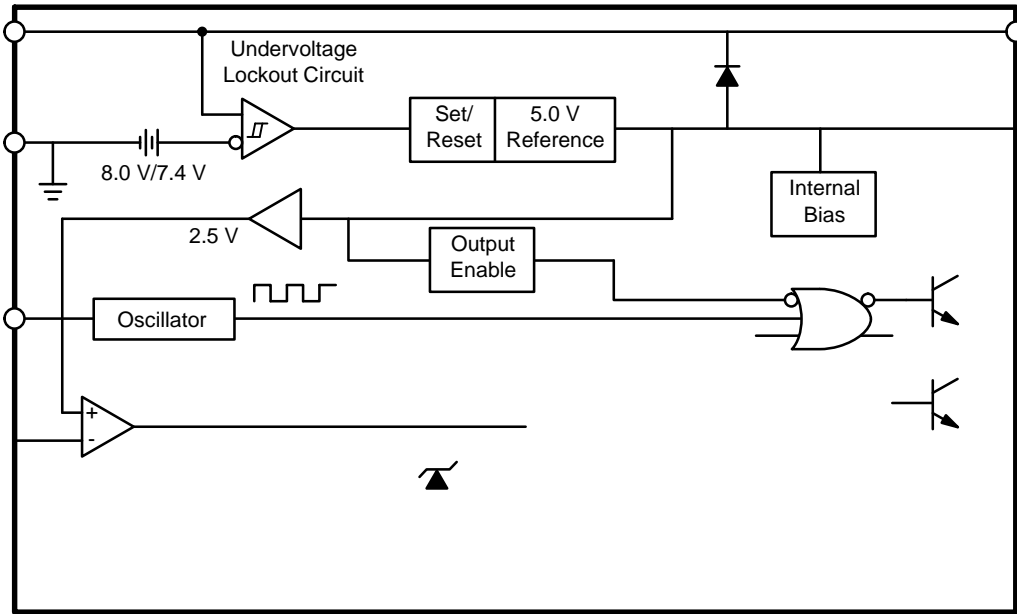


Figure 1. Block Diagram

# CS2841B

**ELECTRICAL CHARACTERISTICS** ( $-40^{\circ}\text{C} \leq T_A \leq 85^{\circ}\text{C}$ ,  $R_T = 680\text{ k}\Omega$ ,  $C_T = 0.022\text{ }\mu\text{F}$  for Triangular Mode,  $V_{CC} = 15\text{ V}$  (Note 3),  $R_T = 10\text{ k}\Omega$ ,  $C_T = 3.3\text{ nF}$  for Sawtooth Mode (see Figure 7); unless otherwise specified.)

Characteristic	Test Conditions	Min	Typ	Max	Unit
<b>Reference Section</b>					
Output Voltage	$T_J = 25^{\circ}\text{C}$ , $I_{OUT} = 1.0\text{ mA}$	4.9	5.0	5.1	V
Line Regulation	$8.4 \leq V_{CC} \leq 16\text{ V}$	-	6.0	20	mV
Load Regulation	$1.0 \leq I_{OUT} \leq 20\text{ mA}$	-	6.0	25	mV
Temperature Stability	Note 4	-	0.2	0.4	mV/ $^{\circ}\text{C}$
Total Output Variation	Line, Load, Temp. Note 4	4.82	-	5.18	V
Output Noise Voltage	$10\text{ Hz} \leq f \leq 10\text{ kHz}$ , $T_J = 25^{\circ}\text{C}$ . Note 4	-	50	-	$\mu\text{V}$
Long Term Stability	$T_A = 125^{\circ}\text{C}$ , 1000 Hrs. Note 4	-	5.0	25	mV
Output Short Circuit	$T_A = 25^{\circ}\text{C}$	-30	-100	-180	mA

## Oscillator Section

Initial Accuracy

Sawtooth Mode:  $T_J = 25^{\circ}\text{C}$ . See Figure 7.  
Sawtooth Mode:  $-40^{\circ}\text{C} \leq T_A$



TYPICAL PERFORMANCE CHARACTERISTICS

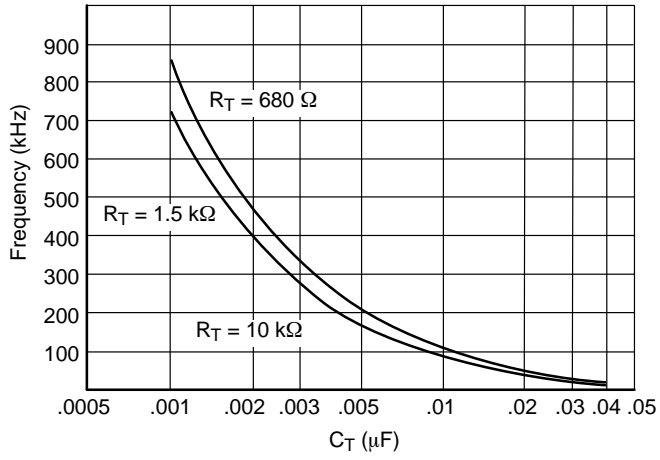


Figure 2. Oscillator Frequency vs.  $C_T$

Figure 3. Oscillator Duty Cycle vs.  $R_T$

CIRCUIT DESCRIPTION

Undervoltage Lockout



ON/OFF Command  
to Reset of IC



Figure 5. Typical Undervoltage Characteristics

## CS2841B

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

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

# CS2841B

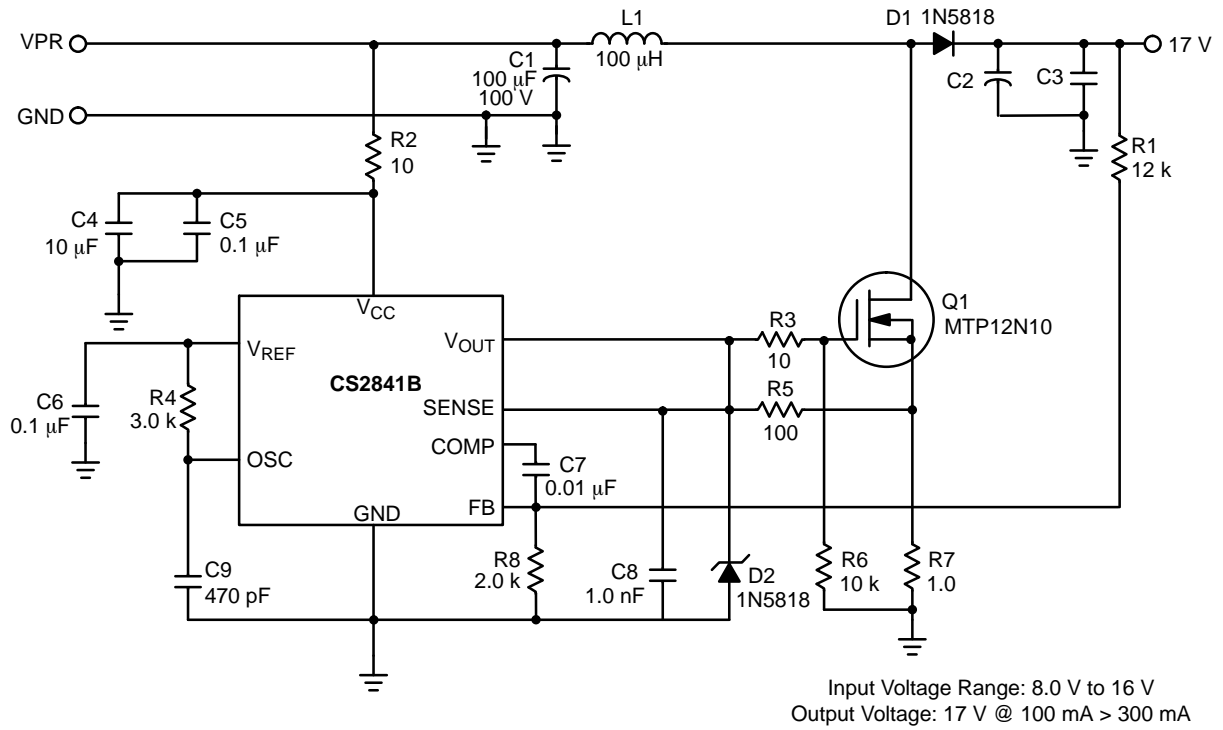
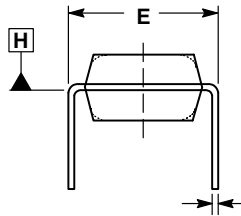
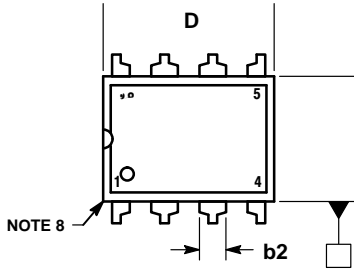


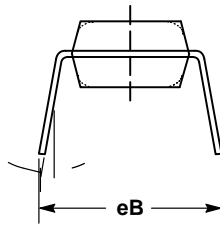
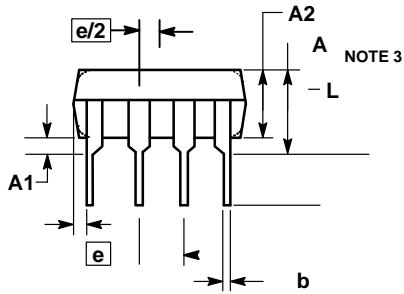
Figure 9. Boost Application



PDIP 8



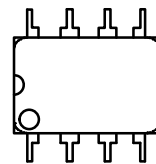
NOTE 5

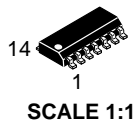


Ⓜ B Ⓜ NOTE 6



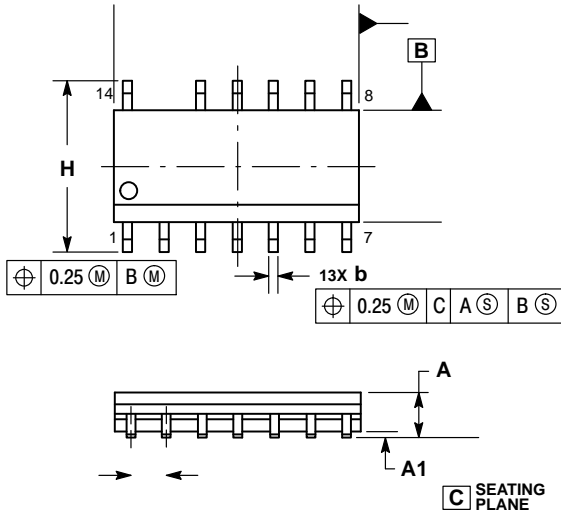
GENERIC MARKING DIAGRAM\*





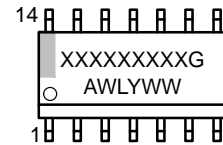
**SOIC 14 NB**  
CASE 751A-03  
ISSUE L

DATE 03 FEB 2016



- 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\***



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

STYLES ON PAGE 2

**SOIC 14**  
CASE 751A-03  
ISSUE L

DATE 03 FEB 2016

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

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