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V_{CC}

IGN

Sense

LAMP

V_{SUP}

Figure 1. Block Diagram

ELECTRICAL CHARACTERISTICS ($-40°C < T_A < 125°C$, $-40°C < T_J < 150°C$, $9.0 V \leq V_{CC} \leq$

PACKAGE PIN DESCRIPTION

PACKAGE PIN #		PIN SYMBOL	FUNCTION
SOIC–14	Flip Chip		
1	1	Driver	Output driver for external power switch–Darlington
2	2	GND	Ground
3, 6, 7, 9, 13	3	NC	No Connection
4	4	OSC	Timing capacitor for oscillator
5	5	Lamp	Base driver for lamp driver indicates no stator signal or overvoltage condition
8	6	IGN	Switched ignition powerup
10	7	Stator	Stator signal input for stator timer (CS3351 also powerup)
11	8	Sense	Battery sense voltage regulator comparator input and protection
12	9	V_{CC}	Supply for IC
14	10	SC	Short circuit sensing

ORDERING INFORMATION

Device	Package	Shipping†
CS3341YD14	SOIC–14	55 Units/Rail
CS3341YD14G	SOIC–14 (Pb–Free)	55 Units/Rail
CS3341YDR14	SOIC–14	2500 Tape & Reel
CS3341YDR14G	SOIC–14 (Pb–Free)	2500 Tape & Reel
CS3351YD14	SOIC–14	55 Units/Rail
CS3351YD14G	SOIC–14 (Pb–Free)	55 Units/Rail
CS3351YDR14	SOIC–14	2500 Tape & Reel
CS3351YDR14G	SOIC–14 (Pb–Free)	2500 Tape & Reel
CS387H	Flip Chip	Contact Sales

†For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specifications Brochure, BRD8011/D.

TYPICAL PERFORMANCE CHARACTERISTICS

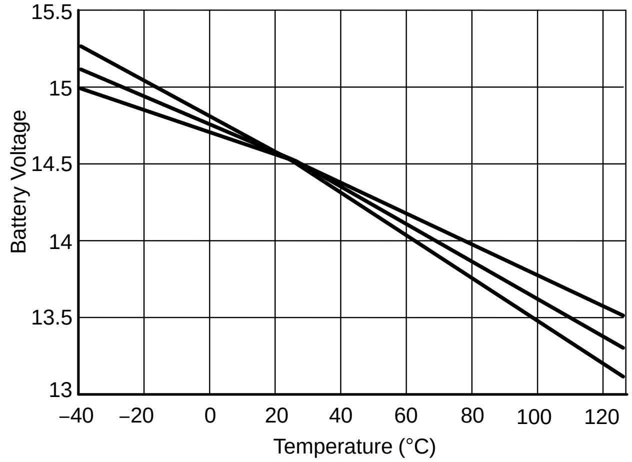


Figure 2. Battery Voltage vs. Temperature (°C) Over Process Variation

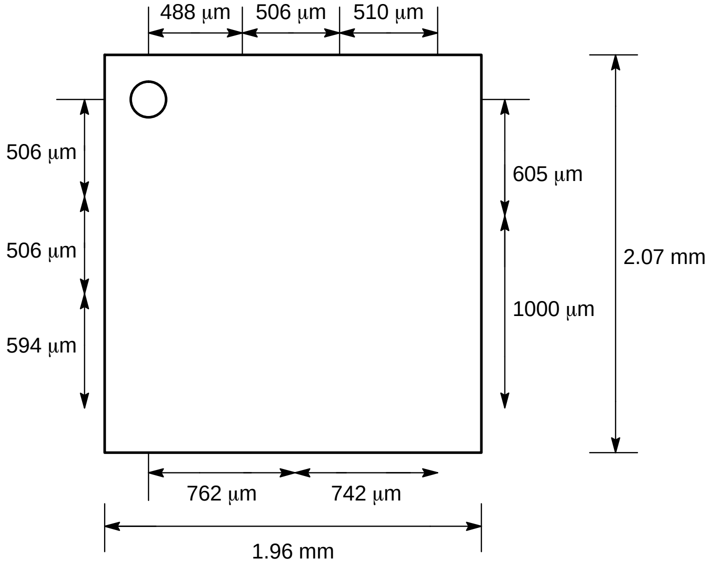
REGULATION WAVEFORMS

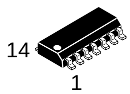
The CS3341/3351/387 utilizes proportion control to maintain regulation. Waveforms depicting operation are shown in Figures 4, 5 and 6, where $V_{BAT/N}$ is the divided down voltage present on the Sense pin using R1 and R2 (Figure 7). A sawtooth waveform is generated internally. The amplitude of this waveform is listed in the electric parameter section as proportion control. The oscillator voltage is summed with $V_{BAT/N}$, and compared with the internal voltage regulator (V_{REG}) in the regulation comparator which controls the field through the output "Device Driver."

Figure 4 shows typical steadyĭstate operation. A 50% duty cycle is maintained.

Figure 5 shows the effect of a drop in voltage on ($V_{BAT/N}$ + V_{OSC}). Notice the duty cycle increase to the field drive.

Figure 6 shows the effect of an increase in voltage (above the regulation voltage) on ($V_{BAT/N}$


488 μm
506 μm
510 μm
506 μm
506 μm
594 μm
605 μm
1000 μm
2.07 mm
762 μm
742 μm
1.96 mm



SCALE 1:1

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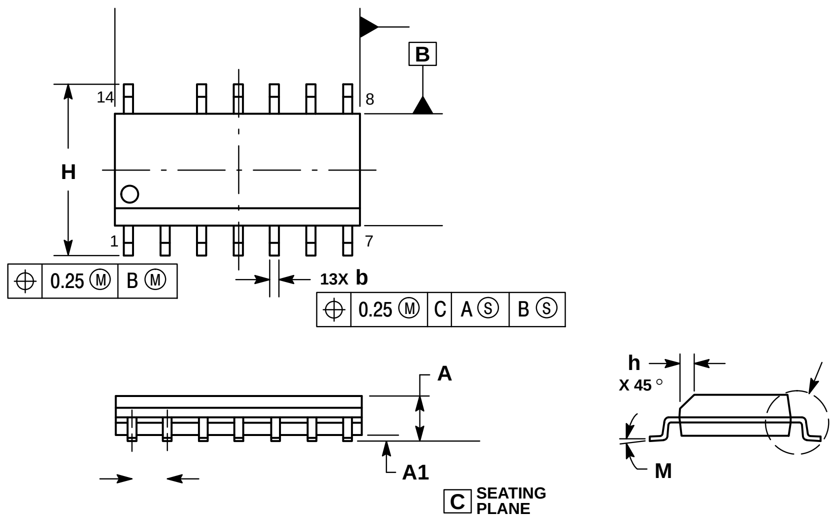
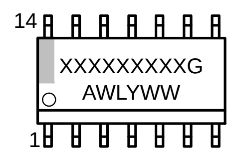


NOTES:
1. DIMENSIONING AND TOLERANCING PER ASME Y14.5M, 1994.
2. CONTROLLING DIMENSION: MILLIMETERS.
3. DIMENSION b DOES NOT INCLUDE DAMBAR PROTRUSION. ALLOWABLE PROTRUSION SHALL BE 0.13 TOTAL IN EXCESS OF AT MAXIMUM MATERIAL CONDITION.
4. DIMENSIONS D AND E DO NOT INCLUDE MOLD PROTRUSIONS.
5. MAXIMUM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