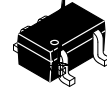
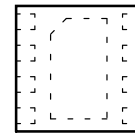




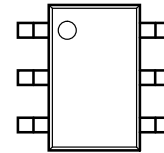
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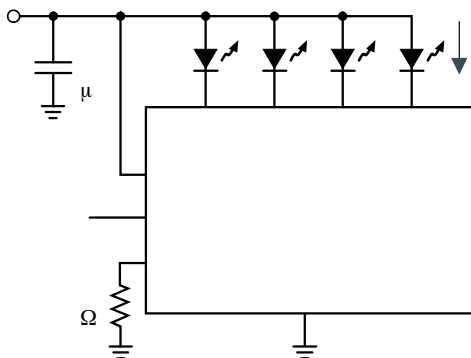


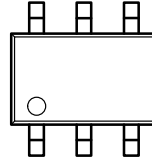
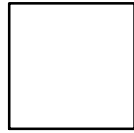
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No Switching Noise

- Shutdown Current less than 1  $\mu$ A
- LED Current set by External Resistor
- Dimming via 1-wire EZDim Interface
- Thermal Shutdown Protection
- 6-lead SC-70, and 8-pad UDFN 2 mm x 2 mm Packages
- These Devices are Pb-Free, Halogen Free/BFR Free and are RoHS Compliant

- LCD Display Backlight
- Cellular Phones
- Digital Still Cameras
- Handheld Devices





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μ

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The CAT400XA uses tightly matched current sinks to accurately regulate LED current in each channel proportional to the current sourced from the RSET pin.

There are 32 different settings for LED brightness that can be programmed through the EN/DIM pin. Tight current regulation for all channels is possible over a wide range of input and LED voltages due to independent current sensing circuitry on each channel.

Each LED channel needs a minimum of 50 mV headroom to sink a constant regulated current of 20 mA. If the input supply falls below 2.0 V typical, the under-voltage lockout circuit disables all LED channels and resets the circuit to default values. Any unused LED channels should be left open.

After power-up, the LED current is set by the external resistor ( $R_{SET}$ ) value and the number of pulses (n) on the EN/DIM input as follows:

$$I_{LED} = I_{RSET} \times \left( \frac{1}{32^n} \right)$$

The full scale current is calculated from the above formula with n equal to zero.

The EN/DIM pin has two primary functions. One function enables and disables the device. The other function is LED current dimming with 32 different levels by pulsing the input signal, as shown on Figure 16. On each consecutive pulse rising edge, the LED current is decreased by about 3.2% ( $1/31^{th}$  of the full scale value). After 30 pulses, the LED current is 3.2% of the full scale current. On the 31<sup>st</sup> pulse, the current

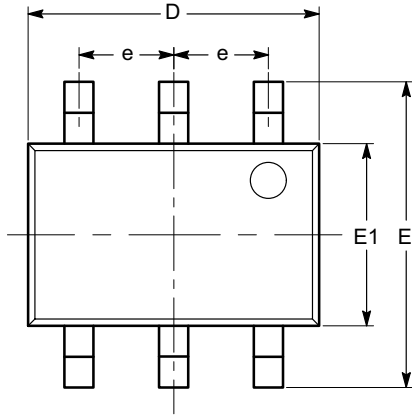




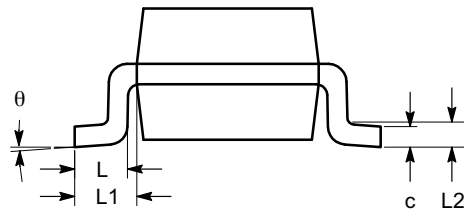
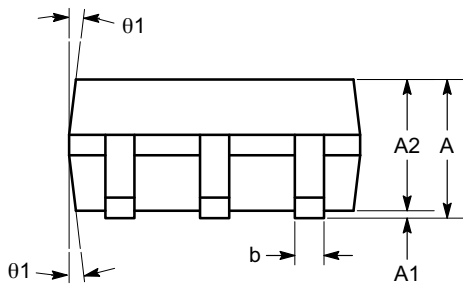


CASE 419AD  
ISSUE A

DATE 07 JUL 2010



A	0.80		1.10
A1	0.00		0.10
A2	0.80		1.00
b	0.15		0.30
c	0.10		0.18
D	1.80	2.00	2.20
E	1.80	2.10	2.40
E1	1.15	1.25	1.35
e	0.65 BSC		
L	0.26	0.36	0.46
L1	0.42 REF		
L2	0.15 BSC		
$\theta$	0°		8°
$\theta_1$	4°		10°

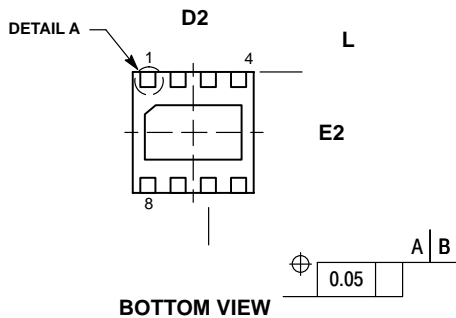
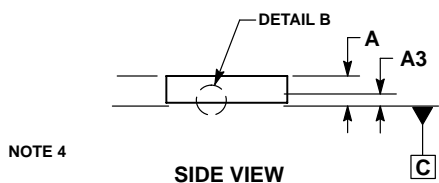
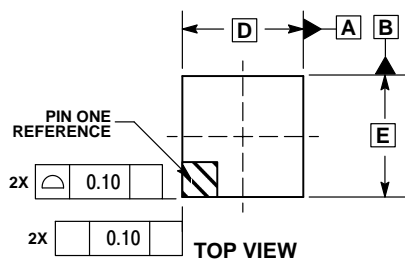


- (1) All dimensions are in millimeters. Angles in degrees.
- (2) Complies with JEDEC MO-203.

UDFN8, 2x2  
CASE 517AW  
ISSUE A

1  
SCALE 2:1

DATE 13 NOV 2015

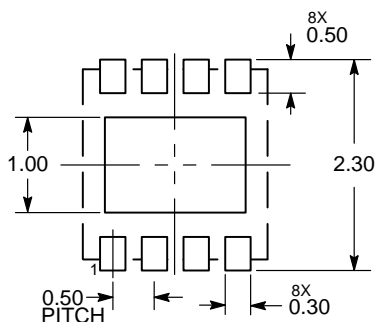


NOTES:

1. DIMENSIONING AND TOLERANCING PER ASME Y14.5M, 1994.
2. CONTROLLING DIMENSION: MILLIMETERS.
3. DIMENSION b APPLIES TO PLATED TERMINALS AND IS MEASURED BETWEEN 0.15 AND 0.30 MM FROM THE TERMINAL TIP.
4. COPLANARITY APPLIES TO THE EXPOSED PAD AS WELL AS THE TERMINALS.
5. FOR DEVICE OPN CONTAINING W OPTION, DETAIL B ALTERNATE CONSTRUCTION IS NOT APPLICABLE.

DIM	MILLIMETERS	
	MIN	MAX
A	0.45	0.55
A1	0.00	0.05
A3	0.13 REF	
b	0.18	0.30
D	2.00 BSC	
D2	1.50	1.70
E	2.00 BSC	
E2	0.80	1.00
e	0.50 BSC	
L	0.20	0.45

SOLDERING FOOTPRINT\*



DIMENSIONS: MILLIMETERS

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

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