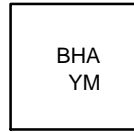


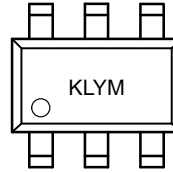
CAT4003B, CAT4004B

MARKING DIAGRAMS



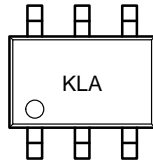
UDFN8 (2 x 2 mm)

BH = CAT4004B Device Code
A = Assembly Location Code
Y = Production Year (last digit)
M = Production Month: 1 – 9, O, N, D



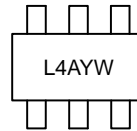
TSOT23-6L

KL = CAT4003B Device Code
Y = Production Year (last digit)
M = Production Month: 1 – 9, O, N, D



SC70-6L

KL = CAT4003B Device Code
A = Assembly Location Code

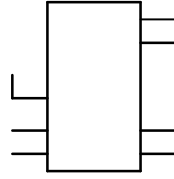


TSOP-6

L4 = CAT4003B Device Code
A = Assembly Location Code
YW = Year and Work Week

CAT4003B, CAT4004B

PIN CONNECTIONS (Top View)



CAT4003B, CAT4004B

CAT4003B, CAT4004B

TYPICAL CHARACTERISTICS

(CAT4003B, $V_{IN} = 4\text{ V}$, $V_F = 3.3\text{ V}$, $I_{OUT} = 75\text{ mA}$ (3 LEDs at 25 mA), $C_{IN} = 1\text{ }\mu\text{F}$, $T_{AMB} = 25^\circ\text{C}$ unless otherwise specified.)

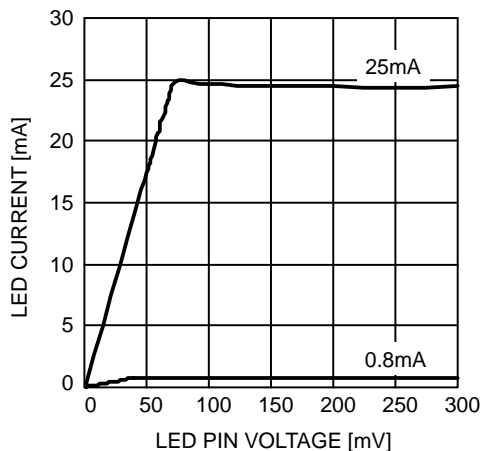


Figure 6. Dropout Characteristics

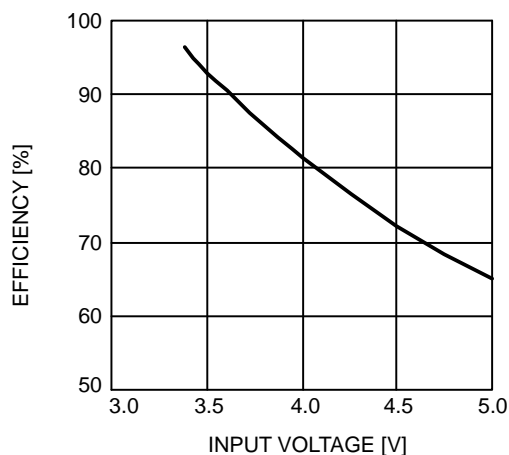


Figure 7. Efficiency vs. Input Voltage

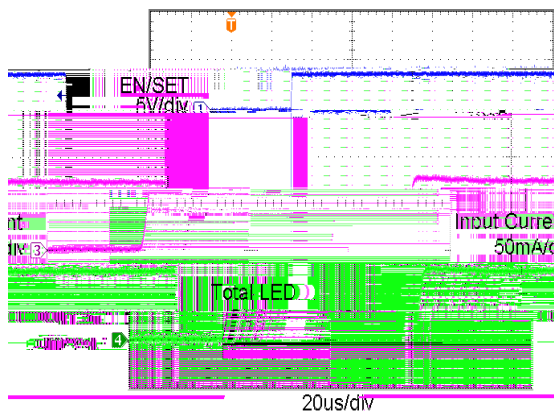


Figure 8. Power Up Waveform

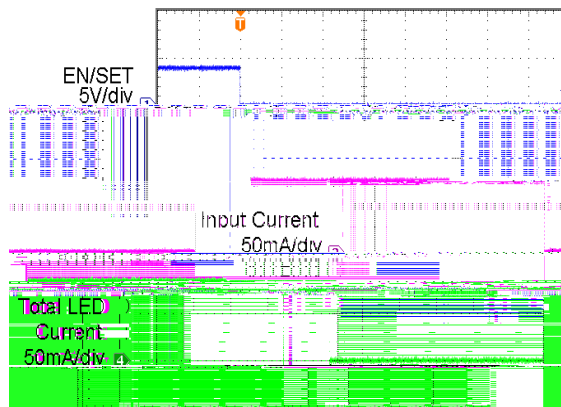


Figure 9. Power Down Waveform

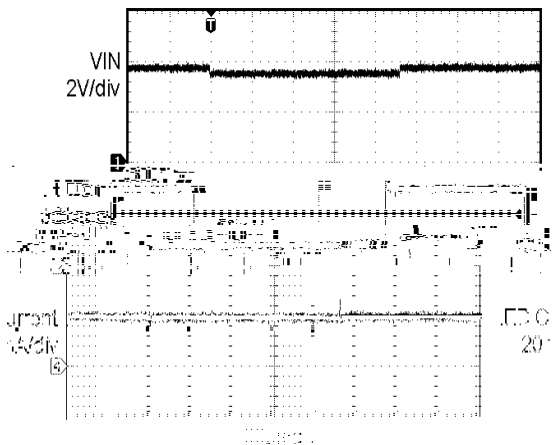


Figure 10. Line Transient Waveform

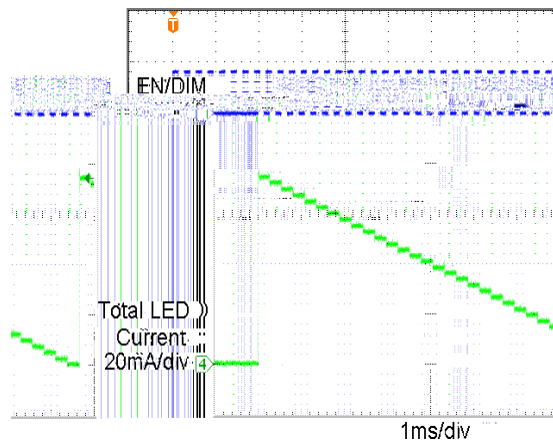


Figure 11. Dimming Levels

CAT4003B, CAT4004

Pin Functions

VIN is the supply pin for the charge pump. A small 1 μ F ceramic bypass capacitor is required between the VIN pin and ground near the device. The operating input voltage range is from 2.4 V to 5.5 V. Whenever the input supply falls below the undervoltage threshold (2.0 V), all the LED channels are disabled and the device enters shutdown mode.

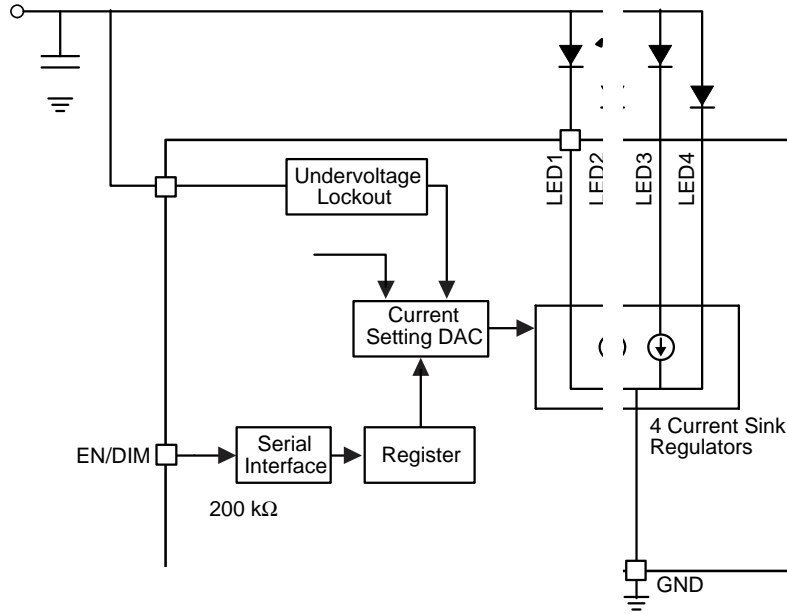
EN/DIM is the enable and one wire dimming input for all LED channels. Levels of logic high and logic low are set at 1.3 V and 0.4 V respectively. When EN/DIM is initially taken high, the CAT400XB becomes enabled and all LED currents are set to the full scale 25 mA. To place the device

into “zero current” shutdown mode, the EN/DIM pin must be held low for 3 ms typical

LED1 to LED4 provide the internal regulated current for each of the LED cathodes. The pins enter a high impedance zero current state whenever the device is placed in shutdown mode.

GND is the ground reference for the device. The pin must be connected to the ground plane on the PCB.

TAB (CAT4004B only) is the exposed pad underneath the package. For best thermal performance, the tab should be soldered to the PCB and connected to the ground plane.





TSOP-6 3.00x1.50x0.90, 0.95P
CASE 318G
ISSUE W

DATE 26 FEB 2024

NOTES:

1. DIMENSIONING AND TOLERAN

TSOP-6 3.00x1.50x0.90, 0.95P
CASE 318G
ISSUE W

DATE 26 FEB 2024

**GENERIC
MARKING DIAGRAM***



XXX = Specific Device Code
A =Assembly Location
Y = Year
W = Work Week
▪ = Pb-Free Package

STYLE 1:

- PIN 1. DRAIN
- 2. DRAIN
- 3. GATE
- 4. SOURCE
- 5. DRAIN
- 6. DRAIN

STYLE 2:

- PIN 1. EMITTER 2
- 2. BASE 1
- 3. COLLECTOR 1
- 4. EMITTER 1
- 5. BASE 2
- 6. COLLECTOR 2

STYLE 3:

- PIN 1. ENABLE
- 2. N/C
- 3. R BOOST
- 4. Vz
- 5. V in
- 6. V out

STYLE 4:

- PIN 1. N/C
- 2. V in
- 3. NOT USED
- 4. GROUND
- 5. ENABLE
- 6. LOAD

STYLE 5:

- PIN 1. EMITTER 2
- 2. BASE 2
- 3. COLLECTOR 1
- 4. EMITTER 1
- 5. BASE 1
- 6. COLLECTOR 2

STYLE 6:

- PIN 1. COLLECTOR
- 2. COLLECTOR
- 3. BASE
- 4. EMITTER
- 5. COLLECTOR
- 6. COLLECTOR

STYLE 7:

- PIN 1. COLLECTOR
- 2. COLLECTOR
- 3. BASE
- 4. N/C
- 5. COLLECTOR
- 6. EMITTER

STYLE 8:

- PIN 1. Vbus
- 2. D(in)
- 3. D(in)+
- 4. D(out)+
- 5. D(out)
- 6. GND

STYLE 9:

- PIN 1. LOW VOLTAGE GATE
- 2. DRAIN
- 3. SOURCE
- 4. DRAIN
- 5. DRAIN
- 6. HIGH VOLTAGE GATE

STYLE 10:

- PIN 1. D(OUT)+
- 2. GND
- 3. D(OUT)-
- 4. D(IN)-
- 5. VBUS
- 6. D(IN)+

STYLE 11:

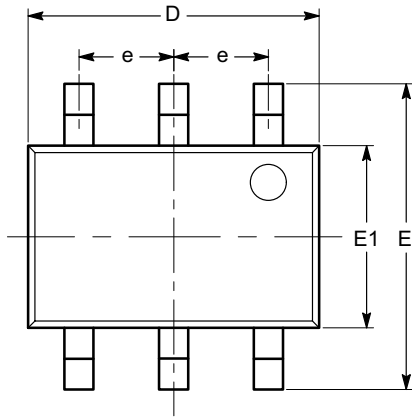
- PIN 1. SOURCE 1
- 2. DRAIN 2
- 3. DRAIN 2
- 4. SOURCE 2
- 5. GATE 1
- 6. DRAIN 1/GATE 2

STYLE 12:

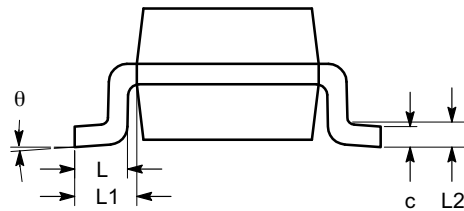
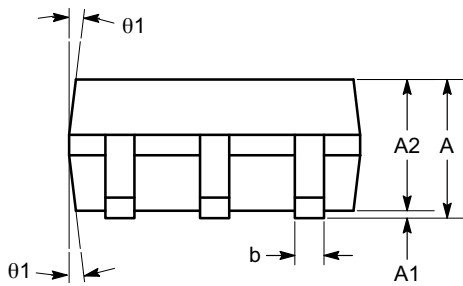
- PIN 1. I/O
- 2. GROUND
- 3. I/O
- 4. I/O
- 5. VCC
- 6. I/O

CASE 419AD
ISSUE A

DATE 07 JUL 2010



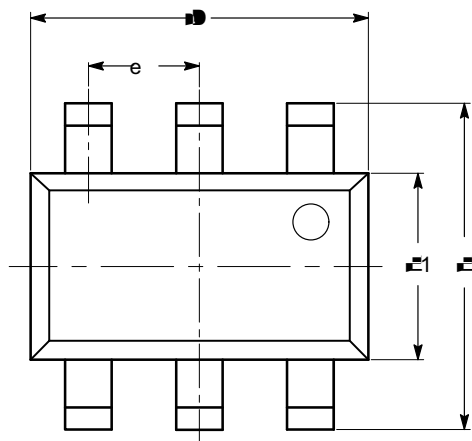
A	0.80		1.10
A1	0.00		0.10
A2	0.80		1.00
b	0.15		0.30
c	0.10		0.18
D	1.80	2.00	2.20
E	1.80	2.10	2.40
E1	1.15	1.25	1.35
e	0.65 BSC		
L	0.26	0.36	0.46
L1	0.42 REF		
L2	0.15 BSC		
θ	0°		8°
θ_1	4°		10°



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

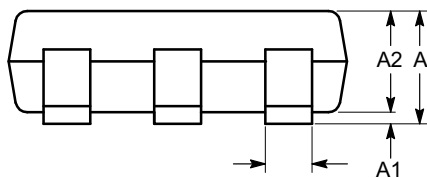
TSOT-23, 6 LEAD
CASE 419AF-01
ISSUE O

DATE 19 DEC 2008

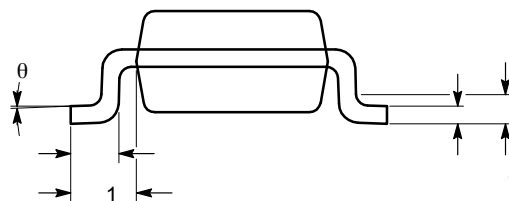


TOP VIEW

SYMBOL	MIN	NOM	MAX
A			1.00
A1	0.01	0.05	0.10
A2	0.80	0.87	0.90
b	0.30		0.45
c	0.12	0.15	0.20
D	2.90 BSC		
E	2.80 BSC		
E1	1.60 BSC		
e	0.95 TYP		
L	0.30	0.40	0.50
L1	0.60 REF		
L2	0.25 BSC		
θ	0		8



SIDE VIEW



END VIEW

Notes:

- (1) A .803 1.930 1.18 e .
- (2) C . h -193.

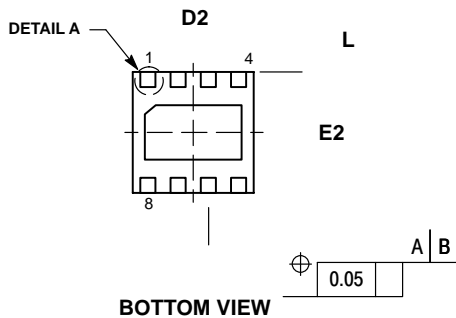
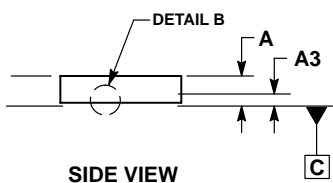
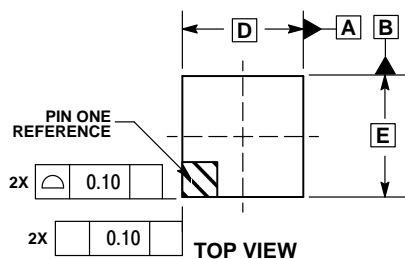
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UDFN8, 2x2
CASE 517AW
ISSUE A

1
SCALE 2:1

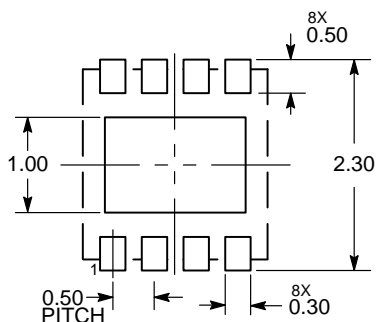
DATE 13 NOV 2015



- 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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