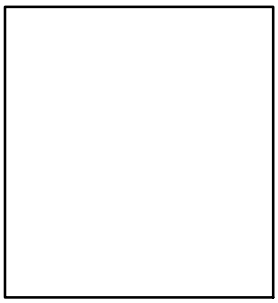
Description

The CAT4003B and CAT4004B provide respectively three and four matched low dropout current sources to drive LEDs. The CAT400XB requires no external RSET resistor. The LED current is internally set to 25 mA when the dev2Eei3V6bppr3first H[illegible]



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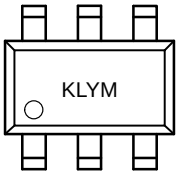
January, 2012 − Rev. 2
Publication Order Number:
CAT4003B/D

0.2SV0Tm(TION.386 13.27.1874.d(EN/DIM0Tm961l4.31088 10.12.5.d(CAT45.0B0Tm961l4.3046 3 0 m0100.d(VIN)Tm-5[illegible]

MARKING DIAGRAMS

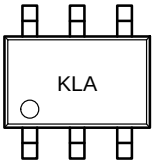
UDFN8 (2 x 2 mm)

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



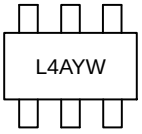
TSOT23−6L

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



SC70−6L

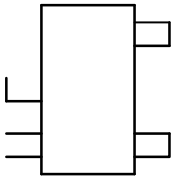
KL = CAT4003B Device Code
A = Assembly Location Code



TSOP−6

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

PIN CONNECTIONS (Top View)



TYPICAL CHARACTERISTICS

(CAT4003B, V_{IN} = 4 V, V_F = 3.3 V, I_{OUT} = 75 mA (3 LEDs at 25 mA), C_{IN} = 1 μF, T_{AMB} = 25°C unless otherwise specified.)

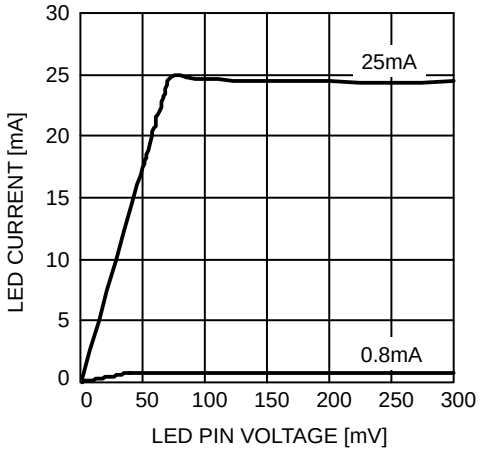


Figure 6. Dropout Characteristics

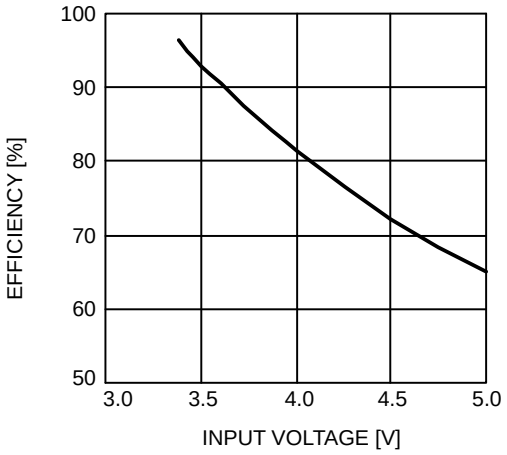


Figure 7. Efficiency vs. Input Voltage

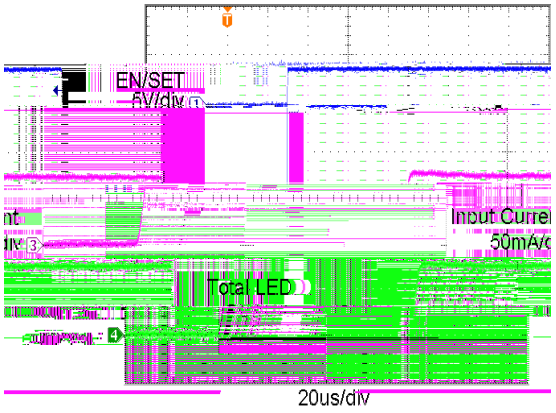


Figure 8. Power Up Waveform

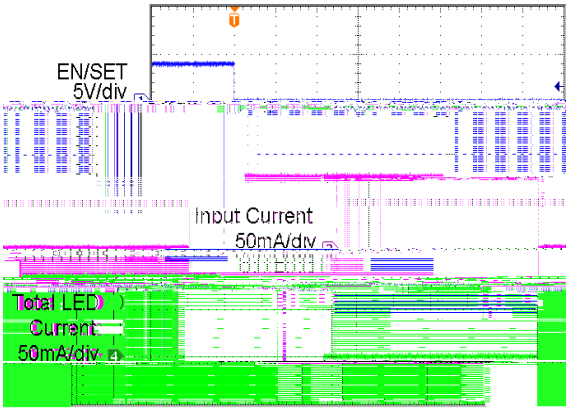


Figure 9. Power Down Waveform

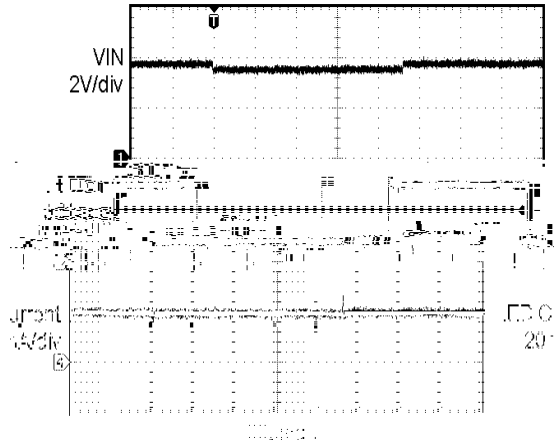


Figure 10. Line Transient Waveform

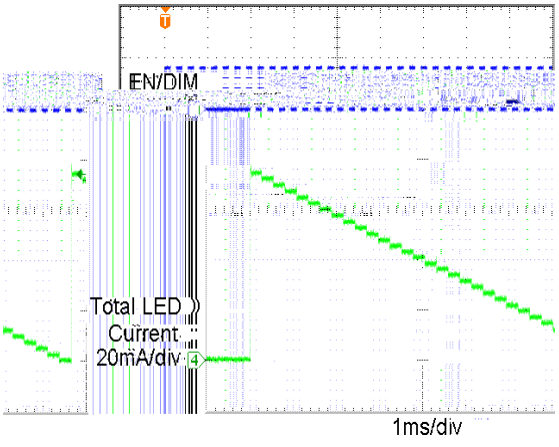


Figure 11. Dimming Levels

Pin Functions

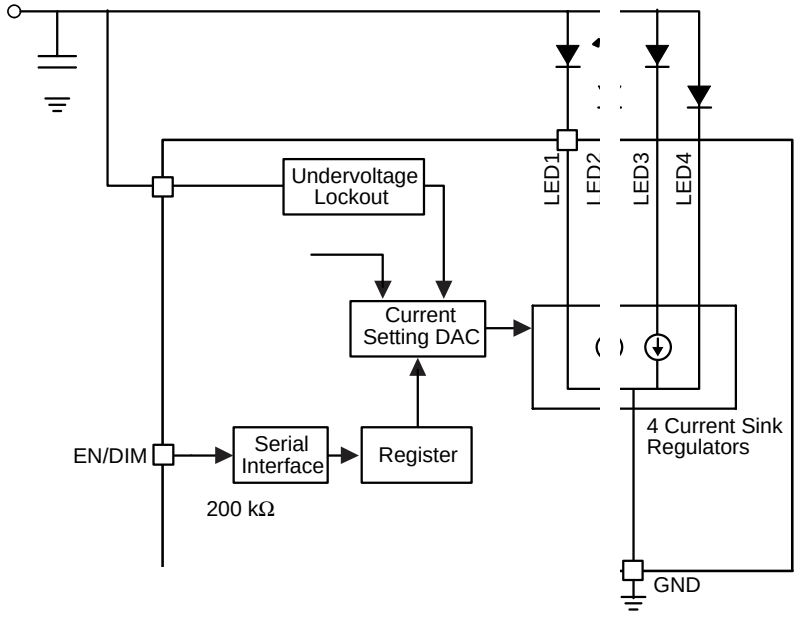
VIN is the supply pin for the charge pump. A small 1 μF ceramic bypass capacitor is required between the VIN pin and ground near the device. The operating input voltage range is from 2.4 V to 5.5 V. Whenever the input supply falls below the under−voltage threshold (2.0 V), all the LED channels are disabled 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 ırrent" shutdown mode, the EN/DIM pin must be held lov for 3 ms typical

LED1 to **ED4** provide the internal regulated current for each of the LED cathodes. The pins enter a high impedance zero curren state whenever the device is placed in shutdown mode.

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

TAB (CAT 004B only) is the exposed pad underneath the package. F r best thermal performance, the tab should be soldered to he 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

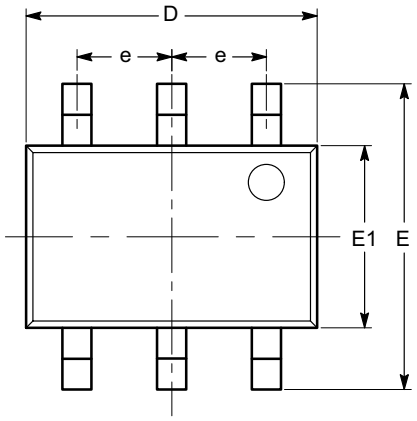
STYLE 10:
PIN 1. D(OUT)+
2. GND
3. D(OUT)−
4. D(IN)−
5. VBUS
6. D(IN)+

STYLE 11:
PIN 1. SOURCE 1
2. DRAIN 2
3. DRAIN 2
4. SOURCE 2
5. GATE 1
6. DRAIN 1/GATE 2

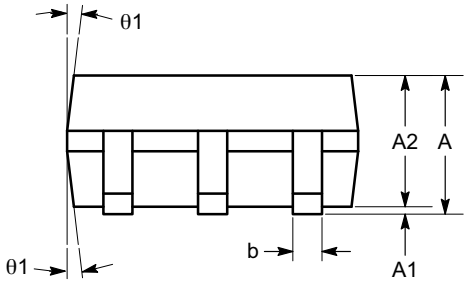
STYLE 12:
PIN 1. I/O
2. GROUND
3. I/O
4. I/O
5. VCC
6. I/O

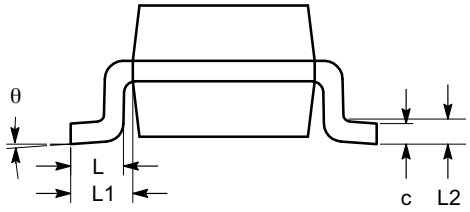
CASE 419AD
ISSUE A

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°
θ1	4°		10°

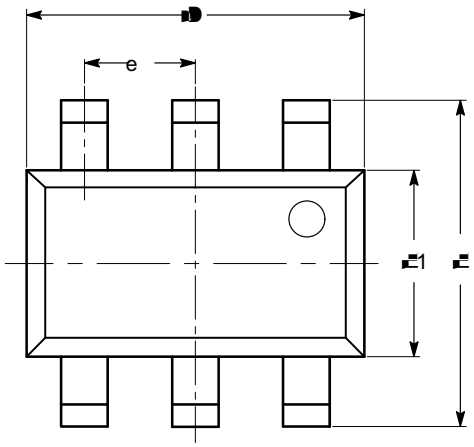




(1) All dimensions are in millimeters. Angles in degrees.
(2) Complies with JEDEC MO-203.

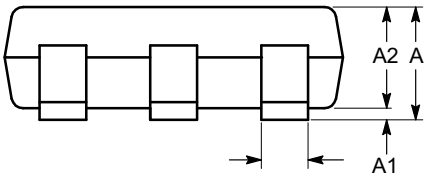
TSOT−23, 6 LEAD
CASE 419AF−01
ISSUE O

DATE 19 DEC 2008

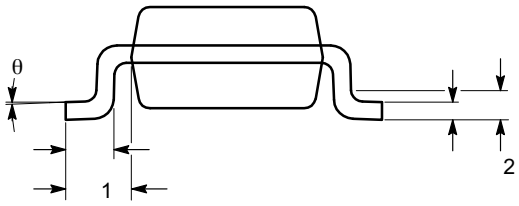


TOP VIEW

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 1.93 1 1.18 e .
(2) C e w h -193.

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DESCRIPTION:	TSOT−23, 6 LEAD	PAGE 1 OF 1

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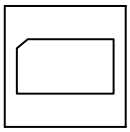
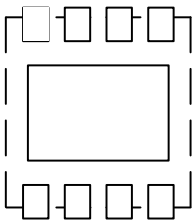
UDFN8, 2x2
CASE 517AW
ISSUE A

DATE 13 NOV 2015





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