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PAC1710

Single High-Side Current Sense Monitor with Power Calculation

PRODUCT FEATURES

Data Brief

General Description

The PAC1710 is a high-side bi-directional current sensing monitor with precision voltage measurement capabilities. The power monitor measures the voltage developed across an external sense resistor to represent the high-side current of a battery or voltage regulator. The PAC1710 also measures the SENSE+ pin voltage and calculates average power over the integration period. The PAC1710 can be programmed to assert the $\overline{\text{ALERT}}$ pin when high and low limits are exceeded for Current Sense and Bus Voltage.

Available in a RoHS compliant 3 X 3mm 10-pin DFN package.

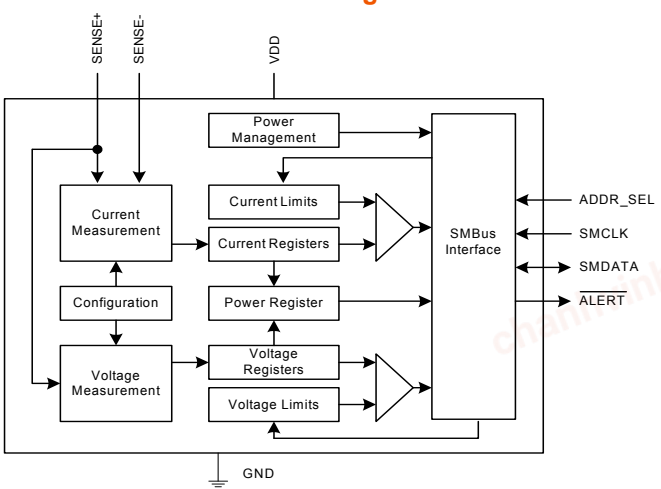
Applications

- Notebook and Desktop Computers
- Industrial
- Power Management Systems
- Embedded Applications

Features

- High-side current sensor
  - Current measurement is integrated over 2.5ms to 2.6sec with up to 11-bit resolution
  - 1% current measurement accuracy in positive range
  - Measures V_{SOURCE} voltage
- Calculates proportional power
- V_{SOURCE} voltage range 0V to 40V
  - Bi-directional current sensing
- Auto-zero input offset voltage
- Digital averaging
  - Adjustable sampling time and resolution
- 5µA typical Standby current
- Programmable sense voltage range
  - ±10mV, ±20mV, ±40mV, and ±80mV
- Power supply range 3.0V to 5.5V
- Wide temperature operating range: -40°C to +85°C
- $\overline{\text{ALERT}}$ output for voltage and current out of limit transients between sampling interval
- SMBus 2.0 communications interface
  - Address selectable by resistor decode
- Sample time configurable from 2.5ms-320ms
  - With averaging effective sampling times up to 2.6sec
- 3x3 mm DFN-10 package

Block Diagram



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Order Number(s):

ORDERING NUMBER	PACKAGE	FEATURES
PAC1710-1-AIA-TR	10-pin 3mm X 3mm DFN (Lead Free RoHS compliant)	SMBus 2.0 communications interface, ALERT pin

REEL SIZE IS 4,000 PIECES

This product meets the halogen maximum concentration values per IEC61249-2-21

For RoHS compliance and environmental information, please visit www.smsc.com/rohs

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Package Outline

PAC1710 Package Drawing (10-Pin DFN)

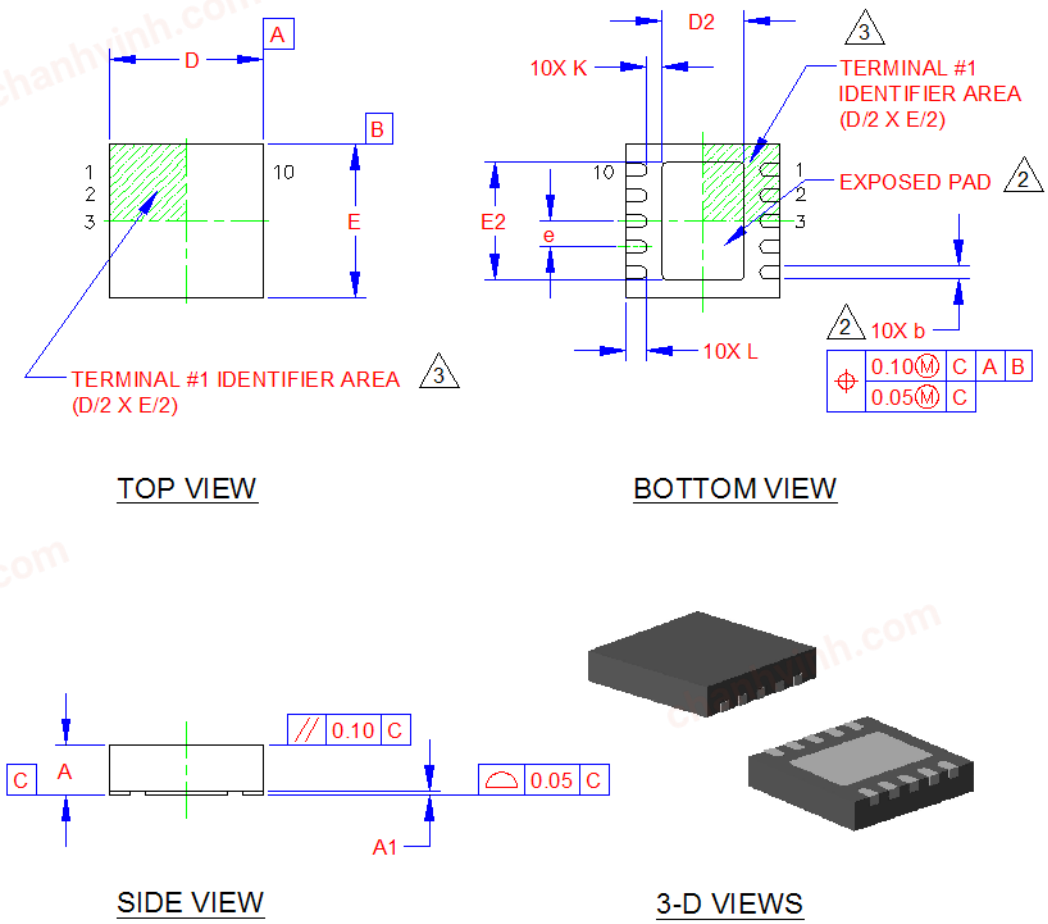


Figure 1 10-Pin DFN Package Drawings

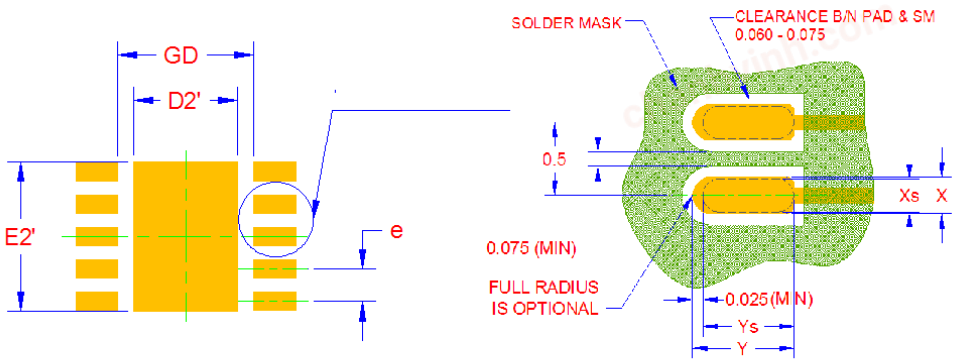
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COMMON DIMENSIONS					
SYMBOL	MIN	NOM	MAX	NOTE	REMARK
A	0.80	0.85	0.90	-	OVERALL PACKAGE HEIGHT
A1	0	0.02	0.05	-	STANDOFF
D/E	2.90	3.00	3.10	-	X/Y BODY SIZE
D2	1.50	1.60	1.70	2	X EXPOSED PAD SIZE
E2	2.20	2.30	2.40	2	Y EXPOSED PAD SIZE
L	0.35	0.40	0.45	-	TERMINAL LENGTH
b	0.18	0.25	0.30	2	TERMINAL WIDTH
K	0.25	0.30	-	-	TERMINAL TO PAD DISTANCE
e	0.50 BSC			-	TERMINAL PITCH

NOTES:
1. ALL DIMENSIONS ARE IN MILLIMETERS.
2. UNILATERAL COPLANARITY ZONE APPLIES TO THE EXPOSED PAD, AS WELL AS THE TERMINALS. DIMENSIONS "b" APPLIES TO PLATED TERMINALS AND IT IS MEASURED BETWEEN 0.15 AND 0.30 mm FROM THE TERMINAL TIP.
3. DETAILS OF TERMINAL #1 IDENTIFIER ARE OPTIONAL BUT MUST BE LOCATED WITHIN THE AREA INDICATED.

Figure 2 10-Pin DFN Package Dimensions



PCB LAND PATTERN

LAND PATTERN DIMENSIONS			
SYMBOL	MIN	NOM	MAX
GD	2.10	-	2.20
D2'	-	1.60	1.60
E2'	-	2.30	-
Pad: X	-	0.28	0.28
Pad: Y	-	0.69	0.69
e		0.50	

Figure 3 10-Pin DFN Recommended PCB Land Pattern

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