3.3 V OUTPUT, 1 A LVR

(SC1017-1T1)

DATA SHEET

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PRODUCT DESCRIPTION:

The SC1017-1T1 3.3 V output, 1 A full load current LVR provides a fixed output voltage of 3.3 V for a wide range of input operating voltage from 3.7 V to 6 V. The LVR is stable with an external capacitor not lower than 4.7uF of ESR 0.1 ohm to 10 ohm. SC1017-1T1 is mainly intended for integration with digital, analog and RF chips.

FEATURES:

- **Line voltage: 3.7 V to 6 V**
- **Fixed output voltage 3.3 V**
- **1 A maximum load current**
- **Low quiescent current of <1 mA**
- **Over temperature shut down mechanism**
- **Short circuit fold-back current limiting feature**
- **SCL 0.18µ CMOS technology**

APPLICATION:

- Battery operated systems
- Integrated solutions for analog, RF and digital chips

DEVICE SUMMARY:

Reference	Package	pins	Lead Finish	Description
SC1017-1T1	COB	4	Gold (ENIG)	Engineering Model

Table 1: Device Summary

BLOCK DIAGRAM:

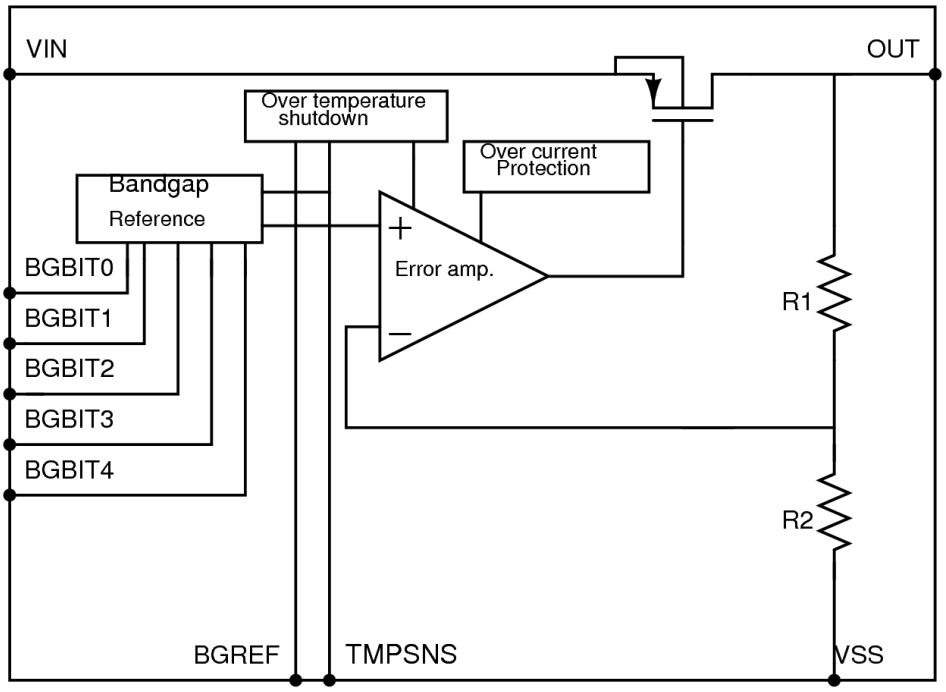

Figure-1: Device Pin Diagram

PAD CONFIGURATION:

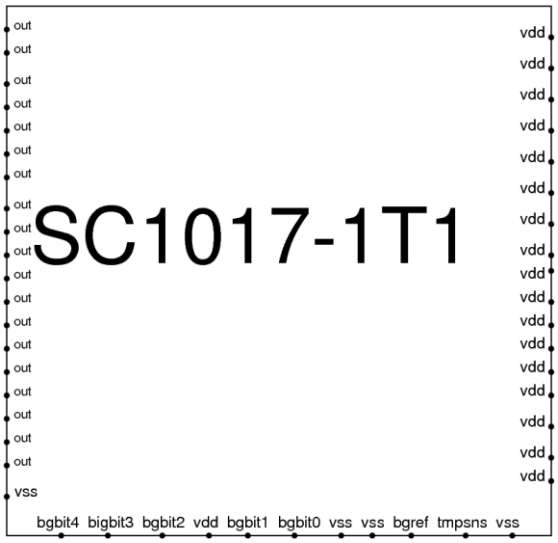

Figure-2: Device Pad Diagram

PIN DESCRIPTION:

Pin Name	Function	Remarks
bgbit4	Digital trimming bit, MSB	Digital trimming bits for varying bandgap reference output voltage. Voltages of vss or vdd to be applied.
bgbit3	Digital trimming bit	
bgbit2	Digital trimming bit	
bgbit1	Digital trimming bit	
bgbit0	Digital trimming bit, LSB	
vss	0V LVR ground	
vdd	3.5 V to 6 V LVR input	
out	3.3 V LVR output	Ceramic capacitor of 10uF with ESR 0.1 ohm to 10 ohm to be placed at the output.
bgref	Bandgap reference output	
tmpsns	Temperature sensor output	

Table 2: Pin Details

DC ELECTRICAL SPECIFICATIONS

Test condition: All Specifications: VIN =3.7V-6V, CIN = 1uF, COUT = 10µF, BGBIT = 11111 (MSB to LSB), unless otherwise specified. Full Load (FL) = 1A

PARAMETER	TEST CONDITIONS		SC1017-1T1		UNITS
			MIN	MAX	
Nominal Voltage	Vin = 3.7V, (I_{LOAD}=10% of FL)		3.32	3.36	V
	Vin = 6V, (I_{LOAD}=10% of FL)		3.32	3.36	
Initial Accuracy	(I_{LOAD}=10% of FL)		0.7	1.7	%
Load Regulation	Vin= 3.7V (10% of FL ≤ I_{LOAD} ≤ 100% of FL)		0.265	0.285	%
Line Regulation	3.7V ≤ V_{IN} ≤ 6V,	I_{LOAD}=10% of FL	0.09	0.12	%
		I_{LOAD}=50% of FL	0.05	0.1	
		I_{LOAD}=100% of FL	0.035	0.07	
Dropout Voltage	I_{LOAD}=10% of FL		0.018		V
	I_{LOAD}=50% of FL		0.089		
	I_{LOAD}=100% of FL		0.18		
Fold-back Current (I_{IN})	Short output to ground (or I_{LOAD} ≥ 2*FL)		470		mA
Shutdown Temp. (simulated value)	BGBIT = 11111 (MSB to LSB)		165		ºC
Quiescent Current	Vin= 5V, I_{LOAD}=10% of FL		0.48	0.5	mA
	Vin= 5V, I_{LOAD}=50% of FL		0.54	0.55	
	Vin= 5V, I_{LOAD}=100% of FL		0.554	0.57	

Table 3: DC Electrical Specification

Note: All parameters are calculated by using V_{NOM} at V_{IN} = 3.7V. Device will go in to Short circuit fold-back at twice of FL, i.e., 2A.

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