

# **3.3 V OUTPUT, 1 A LVR**

**(SC1017-1T1)**

**DATA SHEET**

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## 3.3V OUTPUT, 1A LVR (SC1017-1T1)

### 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 4.7 $\mu$ F 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 0.18 $\mu$  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:

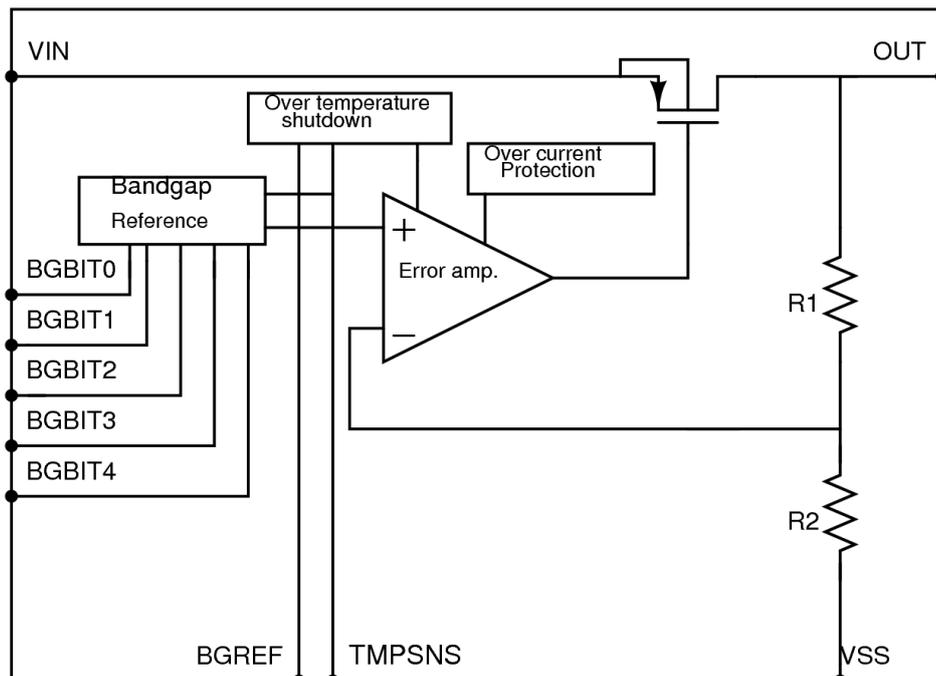


Figure-1: Device Pin Diagram



**PAD CONFIGURATION:**

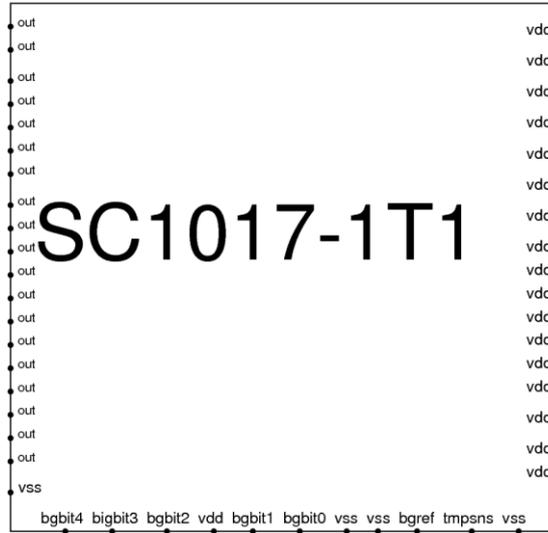


Figure-2: Device Pad Diagram

**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:  $V_{IN} = 3.7V-6V$ ,  $C_{IN} = 1\mu F$ ,  $C_{OUT} = 10\mu F$ , BGBIT = 11111 (MSB to LSB), unless otherwise specified. Full Load (FL) = 1A

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