FC7630 SP FIXED- MULTI-OUTPUT REGULATORS

DESCRIPTION

The FC7630 is a multi-output positive voltage regulator designed to provide fixed precision output voltages of 5.1V, 8V at current up to 0.5A and 12V at current up to 1A with external PNP transistor. An internal reset circuit generates a reset pulse when the output 1 decrease below the regulated value. Output2 & 3 can be disabled by TTL input. Protection features include over voltage protection, short circuit protection and thermal shutdown.

10-SIP H / S

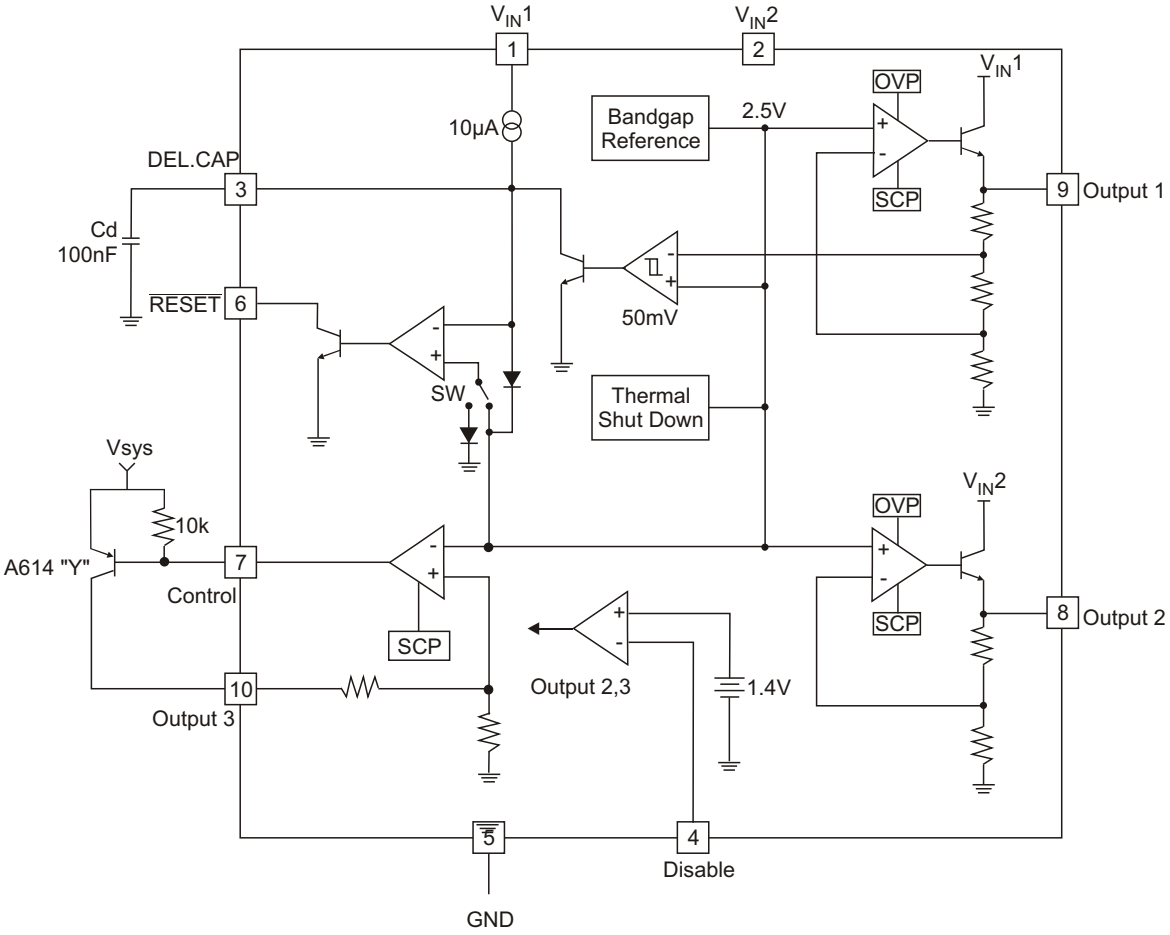


T_A = 0 ... +125 ° C

FEATURES

- Output Currents up to 0.5A (output1 & 2)
- Output Current up to 1A with External Transistor (output3)
- Fixed Precision Output 1 voltage 5.1V ±2 %
- Fixed Precision Output 2 voltage 8V ±2 %
- Control Signal Generator for Output 3 voltage (12V ±2 %)
- Reset Facility for Output Voltage1
- Output 2,3 with Disable by TTL Input
- Current Limit Protection at Each Output
- Thermal Shut Down

Internal Block Diagram



◆ ABSOLUTE MAXIMUM RATINGS

PARAMETER	SYMBOL	RATINGS	UNITS	REMARK
DC Input Voltage	V_{IN}	20	V	-
Disable Input Voltage	V_C	20	V	-
Output Current	I_O	0.5	A	-
Power Dissipation	P_D	1.5	W	No Heatsink
Junction Temperature	T_J	+150	°C	-
Operating Temperature	Topr	0 ~ +125	°C	-

◆ ELECTRICAL CHARACTERISTICS

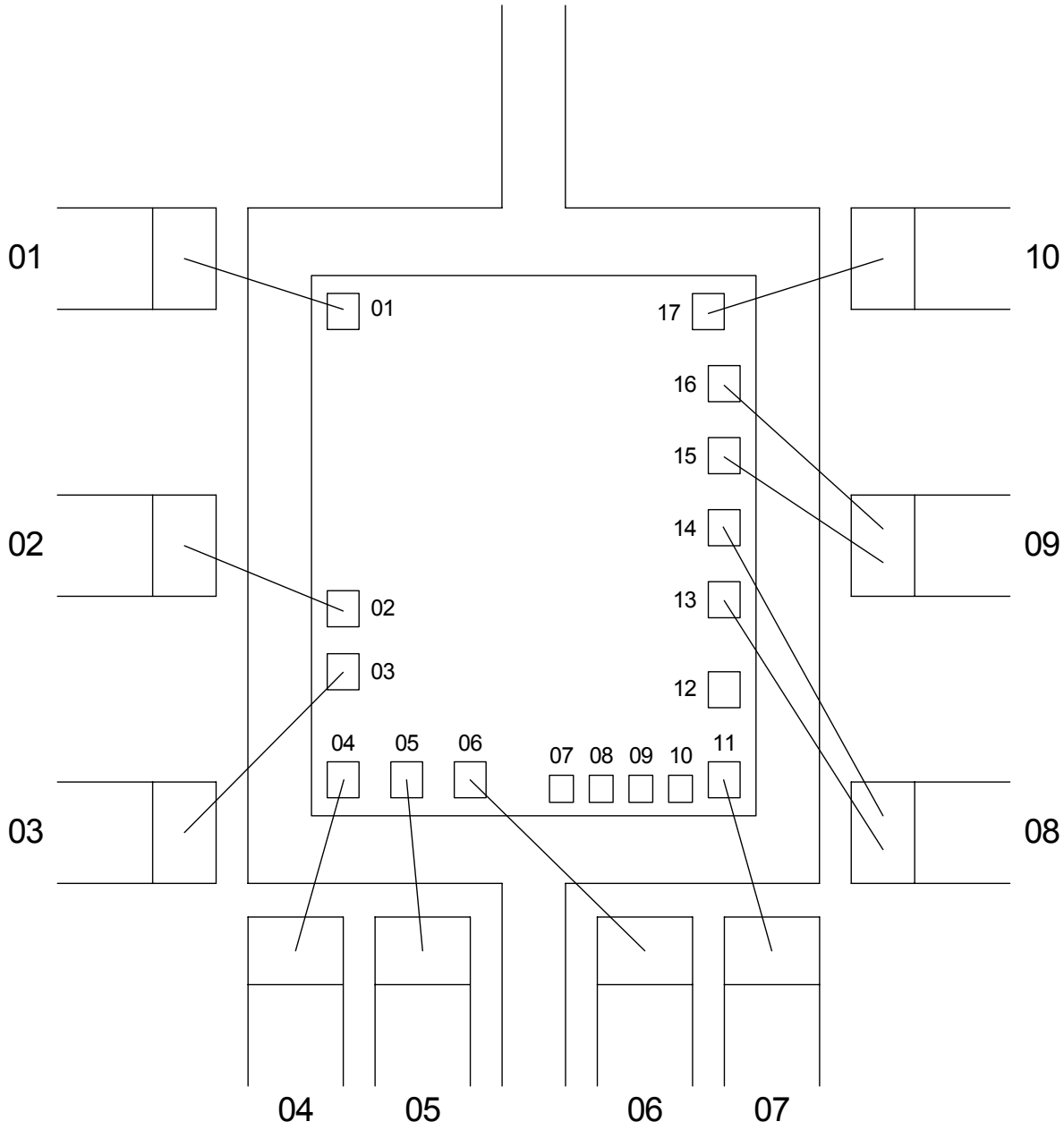
(Refer to test circuit $V_{IN}1$=7.5V, $V_{IN}2$=10.5V, T_J= 25°C, unless otherwise specified)

Parameter	Symbol	Condition	Min	Typ	Max	Unit
Output Voltage 1	V_O1	I_O1=10mA, 7.5V< $V_{IN}1$< 14V 5mA < I_O1< 500mA	5.0 4.9	5.1 5.1	5.2 5.3	V
Output Voltage 2	V_O2	I_O2=10mA, 10.5V< $V_{IN}2$< 18V 5mA < I_O2< 500mA	7.84 7.7	8 8	8.16 8.3	V
Dropout Output Voltage 1,2	Vd1,2	$I_O1,2$=500mA,	-	-	2.5	V
Line Regulation 1,2	$V_O1,2$	7.5V< $V_{IN}1$< 14V 10.5V < $V_{IN}2$< 18V $I_O1,2$= 200mA	-	-	50 80	mV
Load Regulation 1, 2	$V_O1,2$	5mA < I_O1 < 500mA 5mA < I_O2< 500mA	-	0.1	100 160	mV
Output Voltage 3	V_O3	Vsys= 13V, I_O3= 100mA	11.7	12	12.3	V
Line Regulation 3	V_O3	13V <$V_{IN}3$< 18V I_O3= 100mA	-	-	120	mV
Load Regulation 3	V_O3	5mA < I_O3 < 1A	-	-	250	mV
Reset Pulse Delay	Trd	Cd= 100nF, Note 1	-	25	-	ms
Saturation Voltage in Reset Condition	VrL	I6= 5mA	-	-	0.4	V
Leakage Current Pin 6	IrH	V6= 10V	-	-	10	µA
Output Voltage Thermal Drift	STt	0°C < T_J < +125°C, Note 2	-	100	-	ppm/°C
Short Circuit Output Current	Isc 1,2	$V_{IN}1$=7.5V, $V_{IN}2$= 10.5V	-	-	1.6	A
Disable Voltage High	VdisH	Output 2 Active	2.0	-	-	V
Disable Voltage Low	VdisL	Output 2 Disabled	-	-	0.8	V
Disable Bias Current	Idis	0V < Vdis < 7V	-100	-	2	µA
Junction Temperature for TSD	Ttsd	Note 2	-	145	-	°C
Quiescent Current	Iq	I_O1= 10mA, Output2 Disabled	-	-	2	mA
Reset Threshold Voltage	Vr	K= V_O1	K -0.4	K -0.25	K -0.1	V
Reset Threshold Hysteresis	Vrth	Note 1	20	50	100	mA

Notes:

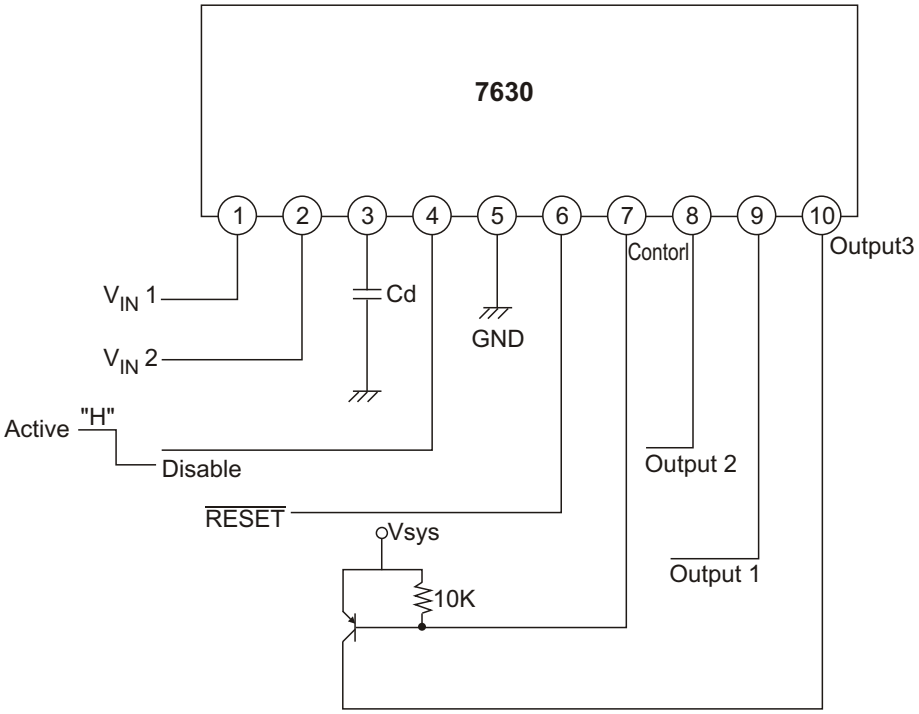
1. To check the reset circuit ,the reset output is low to discharge the delay capacitor(=Cd). if it's less than V_O1-0.25V. And the reset output is high when the delay capacitor voltage linearly increased by the interal current source(10µA) if it's more than V_O1- 0.2V. The equations of delay time is same as below. Trd = (Cd X 2.5) / 10µA

2. These parameters, although guaranteed, are not 100% tested in production.



Bonding diagram of FC7630

TYPICAL APPLICATION



◆ 10-SIP H/S PACKAGE OUTLINE DIMENSIONS

