FC7632 SP FIXED- MULTI-OUTPUT REGULATORS

DESCRIPTION

The FC7632 is a multi-output positive voltage regulator designed to provide fixed precision output voltages of 3.3V, 8V at current up to 0.5A and 5.1V 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.

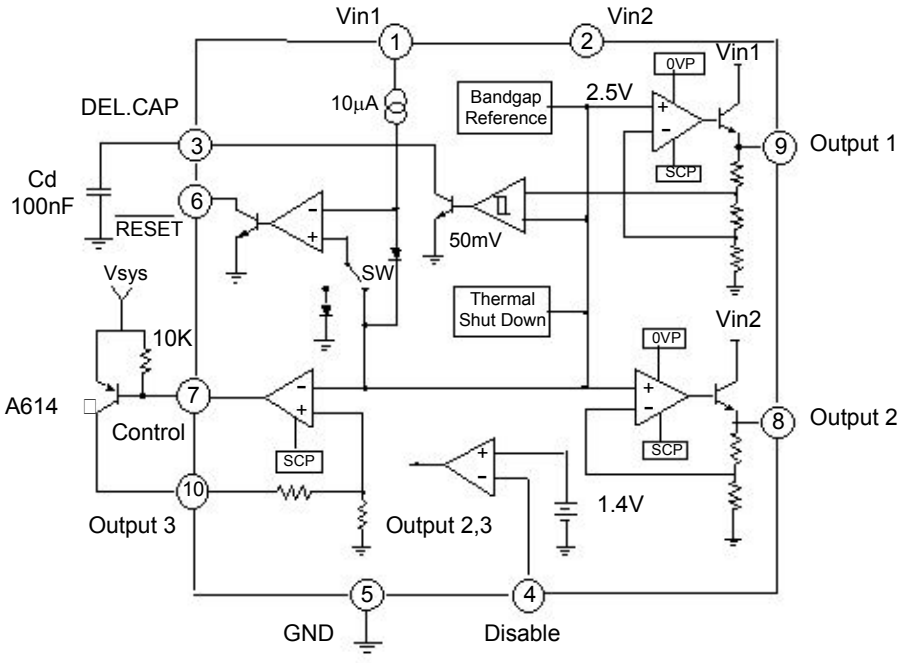
10-SIP H / S

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 3.3V ±2 %
- Fixed Precision Output 2 voltage 8V ±2 %
- Control Signal Generator for Output 3 voltage (5.1V ±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	Value	Unit	Remark
DC Input Voltage	Vin	20	V	-
Disable Input Voltage	Vc	20	V	-
Output Current	Io	0.5	A	-
Junction Temperature	Tj	+ 150	°C	-
Operating Temperature	Topr	0 ~ +125	°C	-

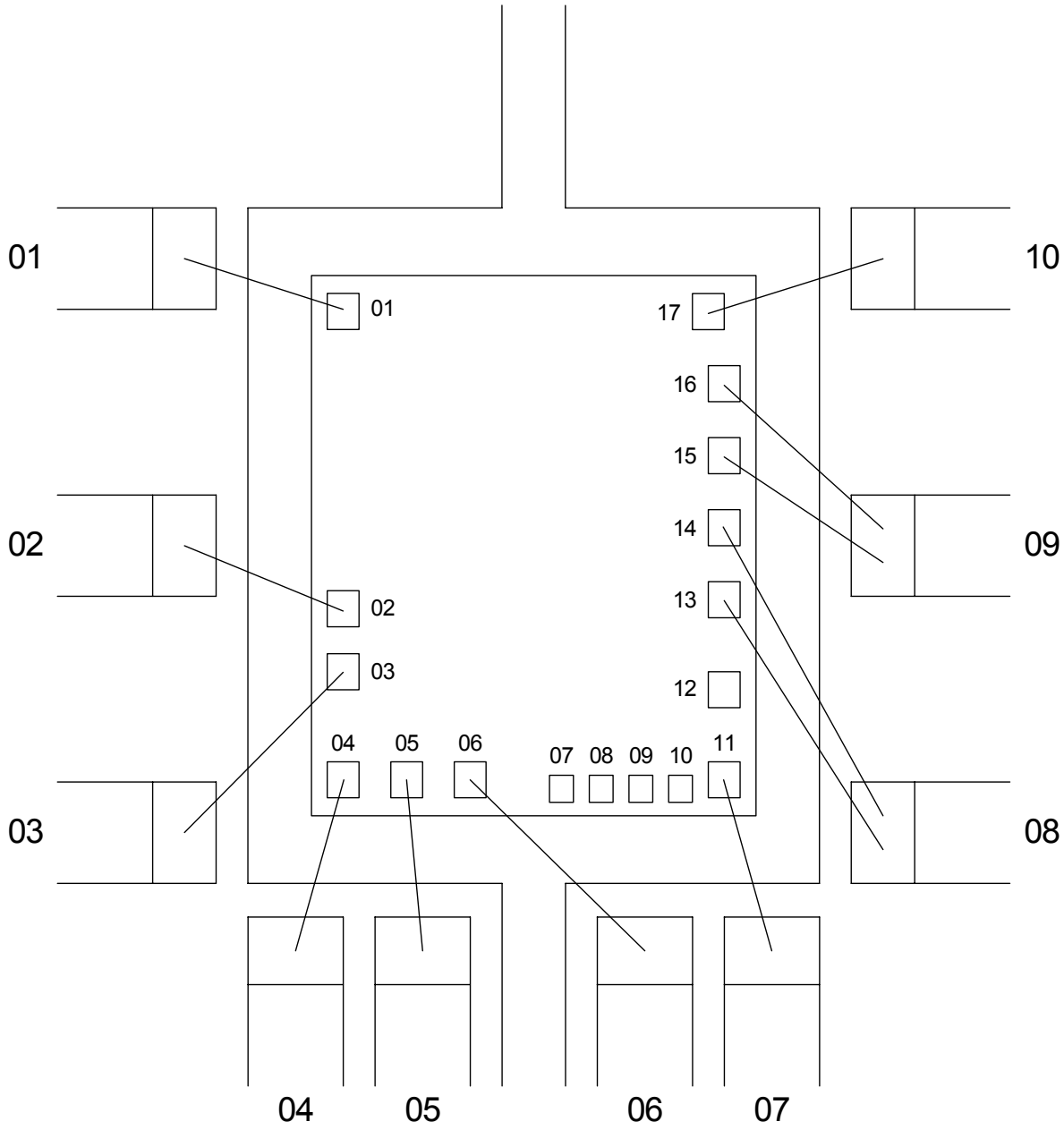
Electrical Characteristics

(Refer to test circuit Vin1=6V ,Vin2=10.5V ,Tj = +25 ° C, unless otherwise specified)

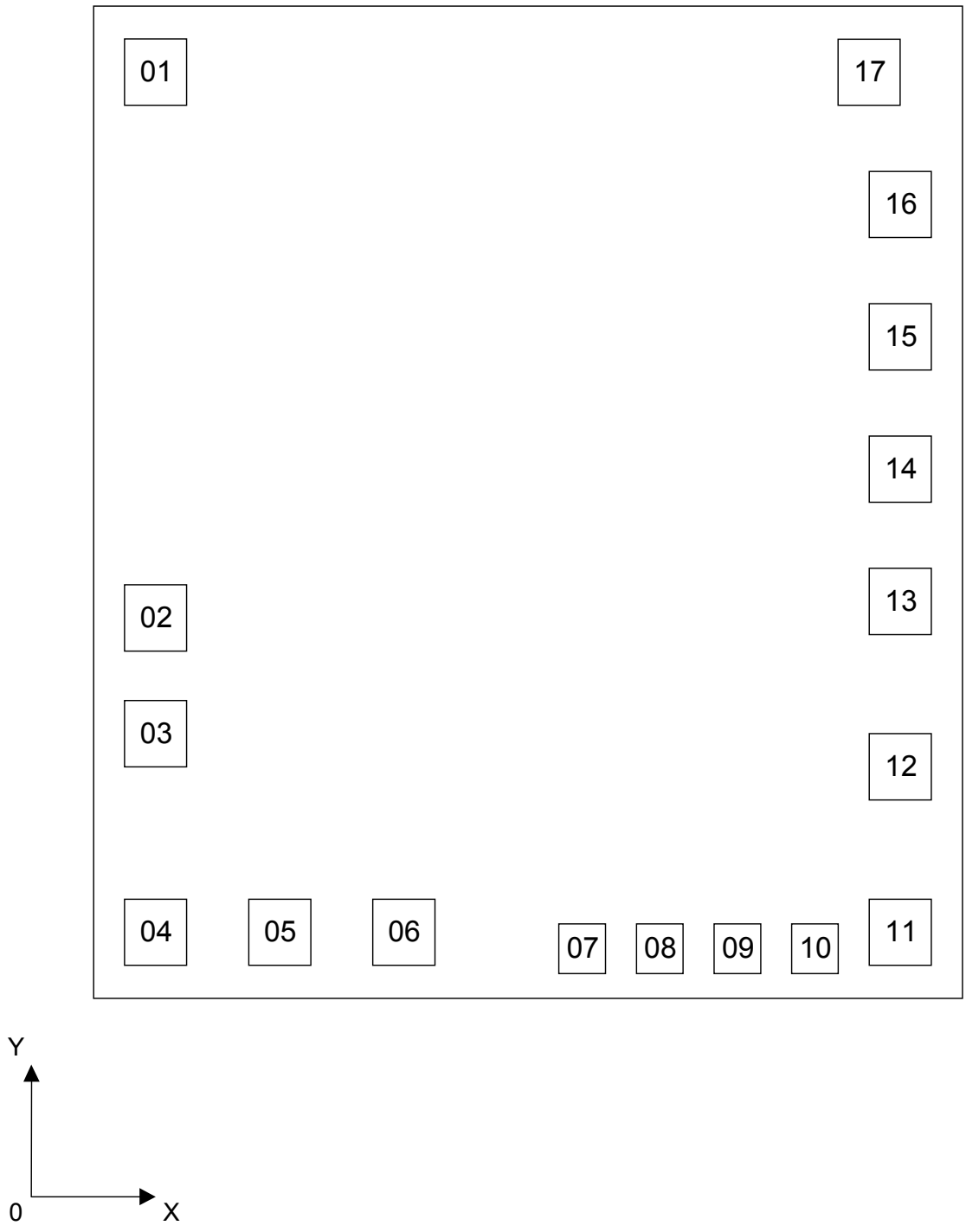
Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Output Voltage 1	Vo1	Io1=10mA 6V<Vin1<14V 5mA<Io1<500mA	3.22 3.14	3.3 3.3	3.38 3.46	V
Output Voltage 2	Vo2	Io2=10mA 10.5V<Vin2<18V 5mA<Io2<500mA	7.84 7.7	8 8	8.16 8.3	V
Dropout Output Voltage 1,2	Vd1,2	Io1,2= 500mA	-	-	2.5	V
Line Regulation 1,2	ΔVo 1,2	6V < Vin1 < 14V 10.5V < Vin2 < 18V Io 1,2 = 200mA	-	-	40 80	mB
Load Regulation 1,2	ΔVo 1,2	5mA < Io1< 500mA 5mA < Io1< 500mA	-	0.1	70 160	mB
Output Voltage 3	Vo3	Vsys=7V, Io3=100mA	4.97	5.1	5.23	V
Line Regulation 3	ΔVo3	13V < Vin2 < 18V Io3 = 100mA	-	-	50	mB
Load Regulation 3	ΔVo3	5mA < Io3< 1A	-	-	110	mB
Reset Pulse Delay	Trd	Cd=100nF, Note1	-	25	-	ms
Saturation Voltage in Reset Condition	VrL	I6=5mA	-	-	0.4	V
Leakage Current at Pin 6	IrH	V6=10V	-	-	10	μA
Output Voltage Thermal Drift	STt	0 °C <Tj < +125 °C , Note 2	-	100	-	ppm/°C
Short Circuit Output Current	Isc1,2	Vin1=6V ,Vin2 =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	0B <Vdis < 7V	-100	-	2	μA
Junction Temperature for TSD	Ttsd	Note 2	-	145	-	°C
Quiescent Current	Iq	Io1 = 10mA, Output 2 Disabled	-	-	2	mA
Reset Threshold Voltage	Vr	K=Vo1	K-0.4	K-0.25	K-0.1	V
Reset Threshold Hysteresis	Vrth	Note 1	20	50	100	mV

Notes:

1. To check the reset circuit ,the reset output is low to discharge the delay capacitor(=Cd). if it's less than Vo1-0.25V. And the reset output is high when the delay capacitor voltage linearly increased by the internal current source(10μA) if it's more than Vo1-0.2V. The equations of delay time is same as below. Trd = (Cd x 2.5) / 10 μA
2. These parameters, although guaranteed, are not 100% tested in production.



Bonding diagram of FC7632



Pads location of FC7632

Die size Xr=2.22 mm, Yr=2.57 mm (pad size measured by layer “passivation”)
Coordinates of pads

No of pad	Left bottom coordinates, mm		pad size, mm
	X	Y	
01	0,142	2,347	0,115×0,115
02	0,142	1,024	0,115×0,115
03	0,138	0,703	0,115×0,115
04	0,138	0,148	0,115×0,115
05	0,483	0,148	0,115×0,115
06	0,860	0,163	0,115×0,115
07*	1,328	0,151	0,074×0,074
08*	1,448	0,151	0,074×0,074
09*	1,648	0,151	0,074×0,074
10*	1,808	0,151	0,074×0,074
11	1,972	0,133	0,115×0,115
12	1,972	0,612	0,115×0,115
13	1,972	1,203	0,115×0,115
14	1,972	1,493	0,115×0,115
15	1,972	1,873	0,115×0,115
16	1,972	2,162	0,115×0,115
17	1,902	2,367	0,115×0,115

*-- technological pads, not for bonding