



LA5655

Voltage Regulator for FLT Display Desk-Top Calculator

Overview

The LA5655 is an IC containing all the voltage regulators required for an FLT display desk-top calculator with a printer.

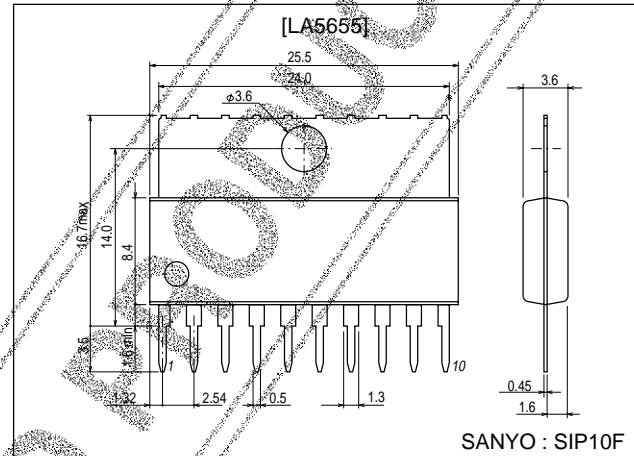
Features and Functions

- a. On-chip voltage regulators required for desk-top calculator (FLT display) with a printer.
 1. Printer voltage regulator.
 2. IC voltage regulator.
 3. FLT anode, grid voltage regulator.
 4. FLT heater grid voltage regulator.
 5. FLT bias grid voltage regulator.
- b. On-chip printer motor brake circuit.

Package Dimensions

unit:mm

3046B-SIP10F



Specifications

Maximum Ratings at $T_a = 25^\circ\text{C}$

Parameter	Symbol	Conditions	Ratings	Unit
Voltage regulator input voltage 1	V_{IN1}		50	V
Voltage regulator input voltage 2	V_{IN2}		25	V
Output current 1	I_{OUT1}		40	mA
Output current 2	I_{OUT2}		2.0	mA
Output current 3	I_{OUTX}	(X=3, 4, 5) other regulator	40	mA
Allowable power dissipation	$P_d \text{ max}$	IC alone	2.45	W
Operating temperature	T_{opr}		-20 to +75	$^\circ\text{C}$
Storage temperature	T_{stg}		-40 to +125	$^\circ\text{C}$

Operating Conditions at $T_a = 25^\circ\text{C}$

Parameter	Symbol	Conditions	Ratings	Unit
Voltage regulator input voltage range	V_{IN1}		20 to 50	V
MT pin H voltage	V_{ENAH}		2.0 to 7.0	V
MT pin L voltage	V_{ENAL}		-0.3 to +0.3	V

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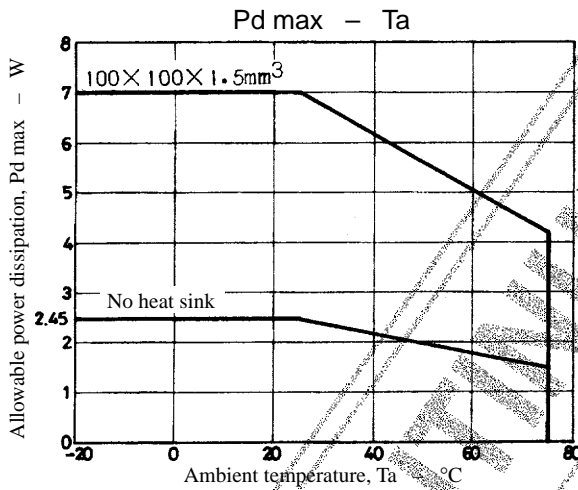
SANYO Electric Co.,Ltd. Semiconductor Company

TOKYO OFFICE Tokyo Bldg., 1-10, 1 Chome, Ueno, Taito-ku, TOKYO, 110-8534 JAPAN

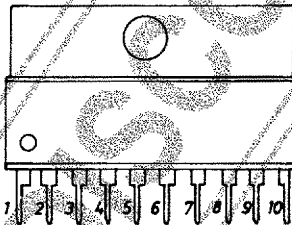
LA5655

Operating Characteristics at $T_a = 25^\circ\text{C}$, $V_{IN1}=35\text{V}$, $V_{IN2}=10\text{V}$, $I_{OUT2}=200\text{mA}$

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Output voltage 1	V_{OUT1}	① → ⑧ $I_{OUT1}=30\text{mA}$	28.5	30	32.5	V
Output voltage 2	V_{OUT2}	⑦ → ⑧	5.3	5.6	6.0	V
Output voltage 3	V_{OUT3}	① → ⑩ $I_{OUT3}=-12\text{mA}$	13.8	15	16.2	V
Output voltage 4	V_{OUT4}	③ → ④ $I_{OUT4}=-30\text{mA}$	4.6	5	5.4	V
Output voltage 5	V_{OUT5}	③ → ⑧ $I_{IN5}=30\text{mA}$	7.3	8	8.7	V
Load regulation 1	ΔV_{O1LOAD}	$10\text{mA} < I_{OUT1} < 30\text{mA}$			250	mA
Load regulation 2	ΔV_{O2LOAD}	$100\text{mA} < I_{OUT2} < 2\text{A}$			250	mA
Load regulation 3	ΔV_{O3LOAD}	$-20\text{mA} < I_{OUT3} < -5\text{mA}$			100	mA
Load regulation 4	ΔV_{O4LOAD}	$-40\text{mA} < I_{OUT4} < -10\text{mA}$			100	mA
Load regulation 5	ΔV_{O5LOAD}	$20\text{mA} < I_{IN5} < 40\text{mA}$			200	mA
Line regulation 1	ΔV_{O1LINE}	$33\text{V} < V_{IN1} < 45\text{V}$			250	mA
Line regulation 2	ΔV_{O2LINE}	$7.5\text{V} < V_{IN2} < 20\text{V}$			100	mA
Line regulation 3	ΔV_{O3LINE}	$33\text{V} < V_{IN1} < 45\text{V}$			100	mA
Line regulation 4	ΔV_{O4LINE}	$6.5\text{V} < V_{IN5} < 8\text{V}$			100	mA
Quiescent current 1	I_{CC1}			6.5	9.0	mA
Quiescent current 2	I_{CC2}			8.5	12.0	mA
Input-output voltage drop	V_{D1}	$V_{OUT1}\Delta V_{O1}=10\%$, $I_{OUT1}=35\text{mA}$			1.3	V
	V_{D2-1}	$V_{OUT2}\Delta V_{O2}=10\%$, $I_{OUT2}=1\text{A}$			1.4	V
	V_{D2-2}	$V_{OUT2}\Delta V_{O2}=10\%$, $I_{OUT2}=2\text{A}$			1.9	V
Saturation voltage at V_{OUT2} off mode	$V_{O2\text{ OFF(sat)}}$	$I_{OUT2}=-1\text{A}$			1.4	V



Pin Assignment



Pin No.	Pin Name	Pin No.	Pin Name
1	V_{OUT1}	6	V_{IN2}
2	V_{IN1}	7	V_{OUT2}
3	V_{OUT5}	8	GND
4	V_{OUT4}	9	R
5	MT	10	V_{OUT3}

