Ordering number:ENN1595D

Monolithic Linear IC

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 dest-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.

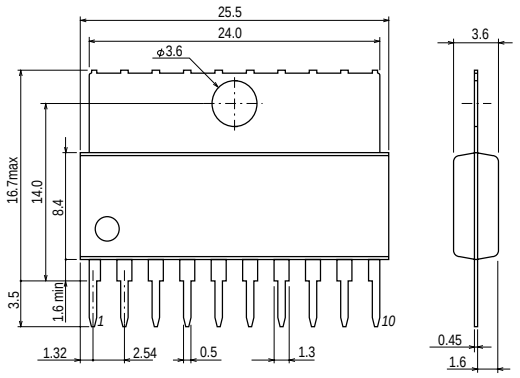
b. On-chip printer motor brake circuit.

Package Dimensions

unit:mm

3046B-SIP10F

[LA5655]



SANYO : SIP10F

Specifications

Maximum Ratings at Ta = 25˚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 dssipation	Pd max	IC alone	2.45	W
Operating temperature	Topr		–20 to +75	˚C
Storage temperature	Tstg		–40 to +125	˚C

Operating Conditions at Ta = 25˚C

Parameter	Symbol	Conditions	Ratings	Unit
Voltage regulator input voltage range	$V_{IN}1$		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

■ Any and all SANYO products described or contained herein do not have specifications that can handle applications that require extremely high levels of reliability, such as life-support systems, aircraft's control systems, or other applications whose failure can be reasonably expected to result in serious physical and/or material damage. Consult with your SANYO representative nearest you before using any SANYO products described or contained herein in such applications.

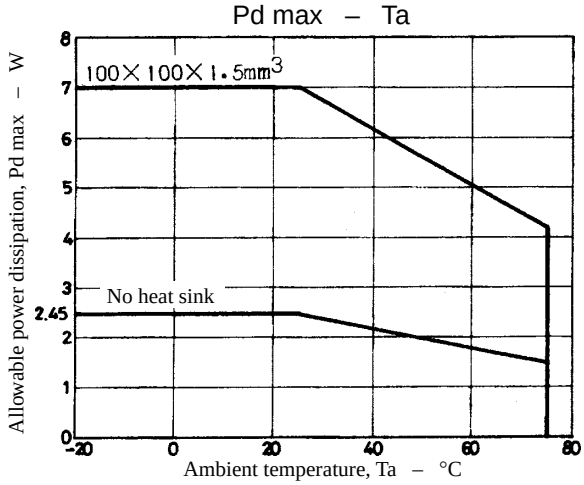
■ SANYO assumes no responsibility for equipment failures that result from using products at values that exceed, even momentarily, rated values (such as maximum ratings, operating condition ranges,or other parameters) listed in products specifications of any and all SANYO products described or contained herein.

SANYO Electric Co.,Ltd. Semiconductor Company

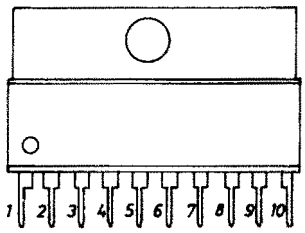
TOKYO OFFICE Tokyo Bldg., 1-10, 1 Chome, Ueno, Taito-ku, TOKYO, 110-8534 JAPAN

Operating Characteristics at Ta = 25˚C, V_{IN1}=35V, V_{IN2}=10V, I_{OUT2}=200mA

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

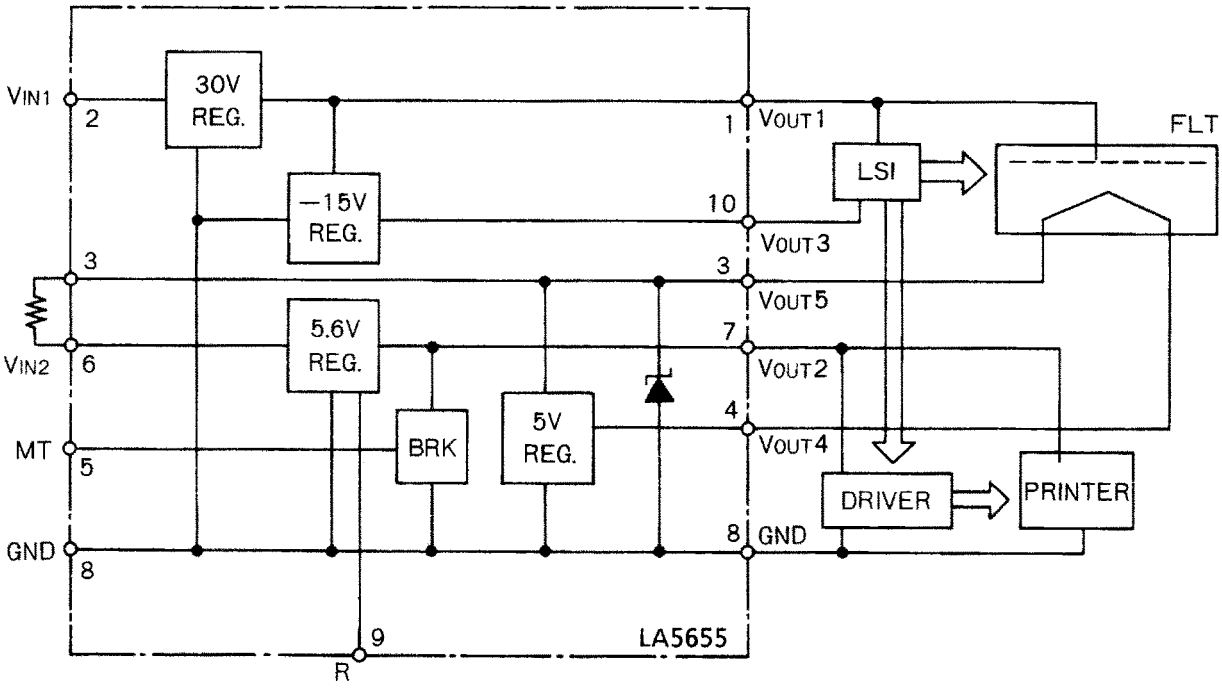


Pin Assignment



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}

Block Diagram and Sample Application Circuit



- Specifications of any and all SANYO products described or contained herein stipulate the performance, characteristics, and functions of the described products in the independent state, and are not guarantees of the performance, characteristics, and functions of the described products as mounted in the customer's products or equipment. To verify symptoms and states that cannot be evaluated in an independent device, the customer should always evaluate and test devices mounted in the customer's products or equipment.
- SANYO Electric Co., Ltd. strives to supply high-quality high-reliability products. However, any and all semiconductor products fail with some probability. It is possible that these probabilistic failures could give rise to accidents or events that could endanger human lives, that could give rise to smoke or fire, or that could cause damage to other property. When designing equipment, adopt safety measures so that these kinds of accidents or events cannot occur. Such measures include but are not limited to protective circuits and error prevention circuits for safe design, redundant design, and structural design.
- In the event that any or all SANYO products(including technical data,services) described or contained herein are controlled under any of applicable local export control laws and regulations, such products must not be exported without obtaining the export license from the authorities concerned in accordance with the above law.
- No part of this publication may be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopying and recording, or any information storage or retrieval system, or otherwise, without the prior written permission of SANYO Electric Co., Ltd.
- Any and all information described or contained herein are subject to change without notice due to product/technology improvement, etc. When designing equipment, refer to the "Delivery Specification" for the SANYO product that you intend to use.
- Information (including circuit diagrams and circuit parameters) herein is for example only ; it is not guaranteed for volume production. SANYO believes information herein is accurate and reliable, but no guarantees are made or implied regarding its use or any infringements of intellectual property rights or other rights of third parties.

This catalog provides information as of April, 2000. Specifications and information herein are subject to change without notice.