

**LA5645T****Constant-Voltage/Constant-Current Control IC****Overview**

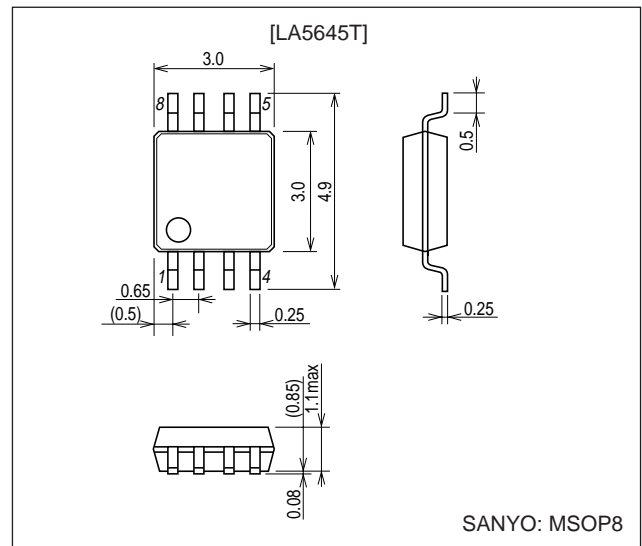
The LA5645T is a constant-voltage/constant-current control IC that incorporates low-voltage operational amplifiers and a high-precision reference voltage circuit ($V_{REF} = 1.5 \text{ V} \pm 1.0\%$). This device is optimal for use as a secondary side controller in battery chargers, switching regulators, and similar products.

Features

- Operating supply voltage: 2.5 to 14 V
- High-precision reference voltage: $1.5 \text{ V} \pm 1.0\%$
- PC pin current: 60 mA (max)
- Current drain: 3 mA (max)
- Input offset voltage: 2 mV (max)

Package Dimensions

unit: mm

3245-MSOP8**Specifications****Maximum Ratings at $T_a = 25^\circ\text{C}$**

Parameter	Symbol	Conditions	Ratings	Unit
Supply voltage	$V_{CC \text{ max}}$		14.5	V
Differential input voltage	$V_{ID \text{ max}}$		14.5	V
Allowable power dissipation	$P_d \text{ max}$	Independent IC	200	mW
		Mounted on the specified printed circuit board*	370	mW
PC pin current	$I_{PC \text{ max}}$		60	mA
Operating temperature	T_{opr}		-40 to +85	$^\circ\text{C}$
Storage temperature	T_{stg}		-50 to +150	$^\circ\text{C}$

Note: * Specified printed circuit board: $20 \times 10 \times 0.8 \text{ mm}^3$, paper phenolic board.

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

Parameter	Symbol	Conditions	Ratings	Unit
Recommended supply voltage	V_{opr}		2.5 to 14	V

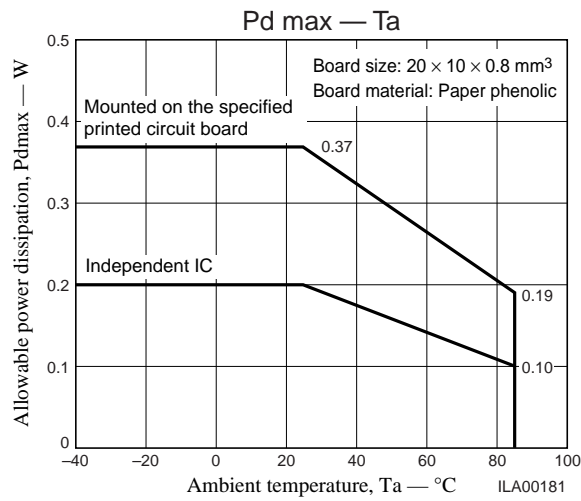
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LA5645T

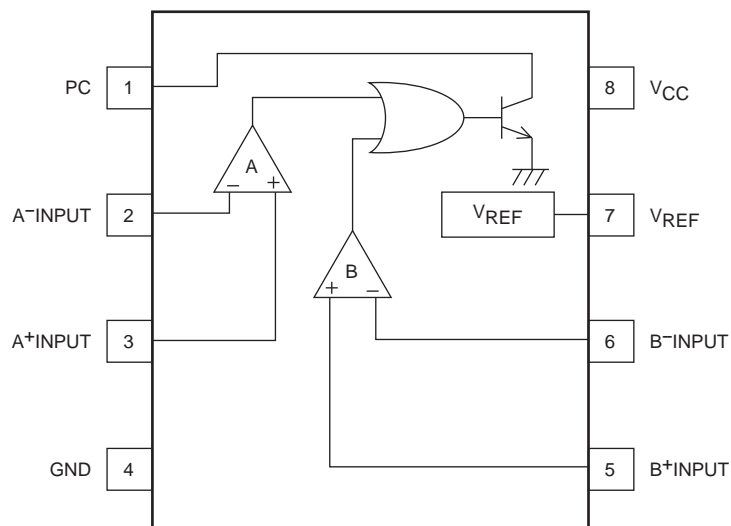


Electrical Characteristics at Ta = 25°C, VCC = 5 V

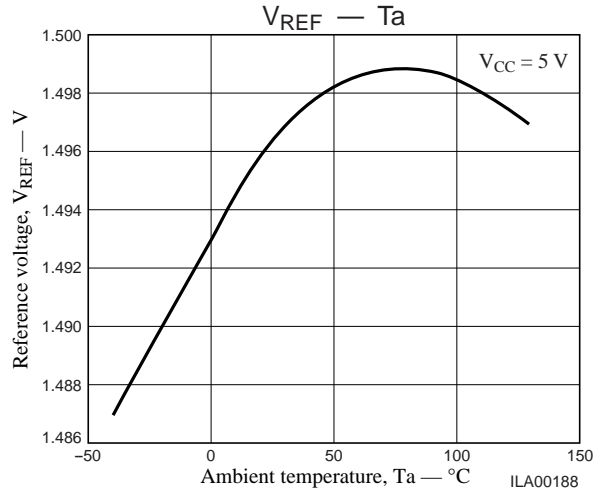
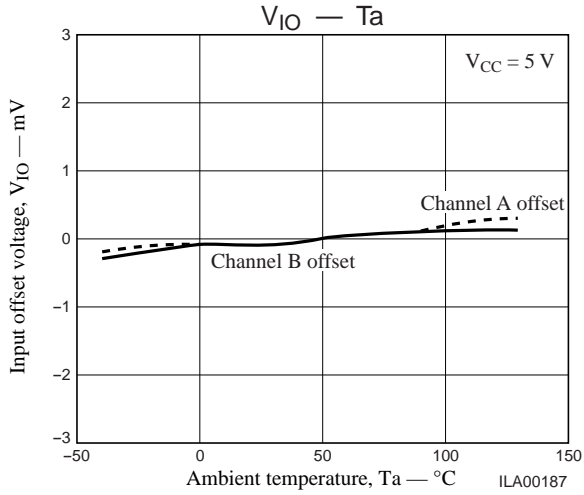
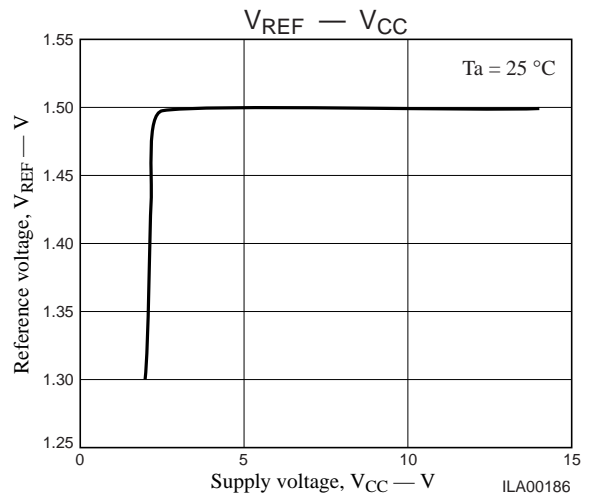
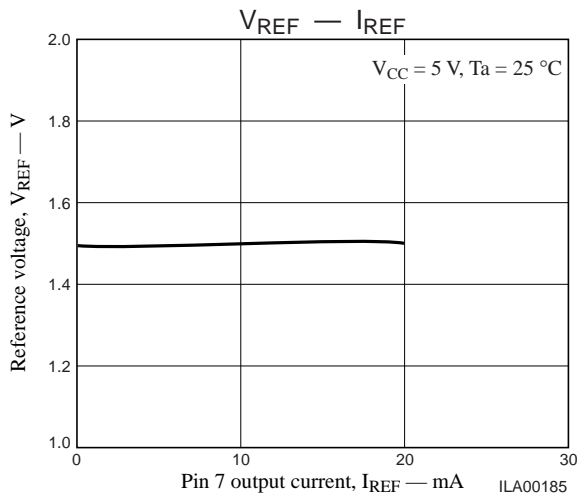
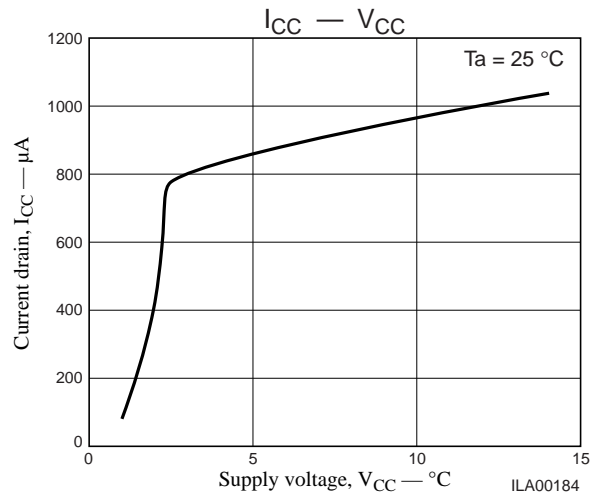
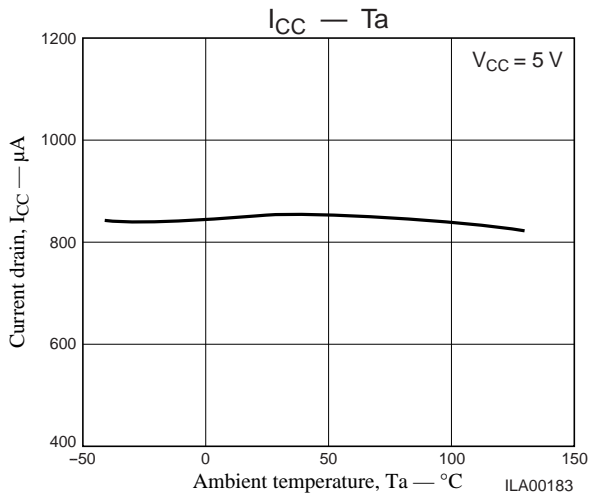
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Current drain	I_{CC}	$I_{PC} = \text{OFF}$		1	3	mA
Leakage current	$I_{PC \text{ LEAK}}$	$V_{CC} = V_{PC} = 14 \text{ V}$			100	μA
Saturation voltage	$V_{PC} (\text{sat})$	$I_{PC} = 50 \text{ mA}$		0.5	0.7	V
Reference voltage	V_{REF}	$I_{REF} = 0 \text{ mA}$	1485	1500	1515	mV
Reference voltage regulation	$\Delta V_{REF}/\Delta I_{REF}$	$I_{REF} = 0 \text{ to } 5 \text{ mA}$			30	mV
[Amplifier Block] (Characteristics common to both channels A and B)						
Input offset voltage	V_{IO}			0.5	2	mV
Input offset current	I_{IO}			5	50	nA
Input bias current	I_B			80	250	nA
Voltage gain	A_V	Open loop gain (design guarantee*)		80		dB
Common-mode input voltage range	V_{ICM}		0		$V_{CC} - 2$	V
Slew rate	SR	Design guarantee*		0.8		V/ μs
Gain-bandwidth product	GB	Design guarantee*		2		MHz

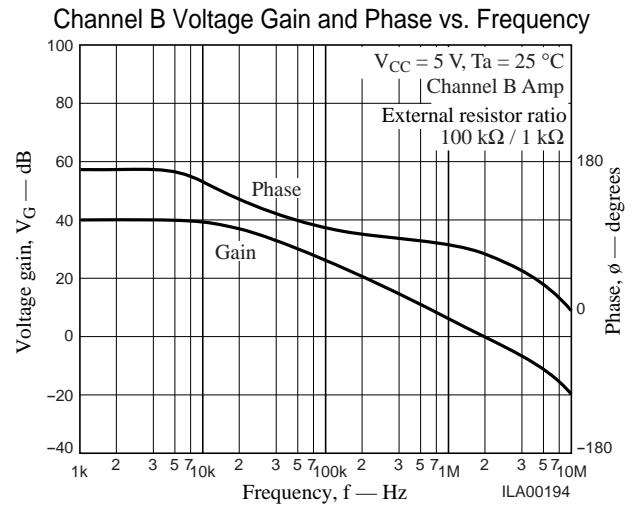
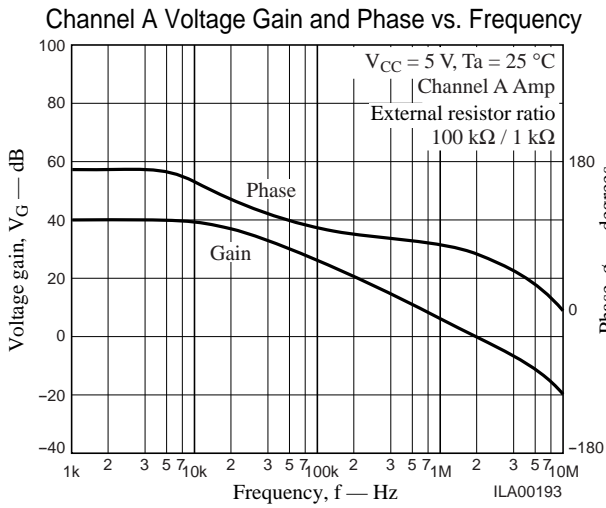
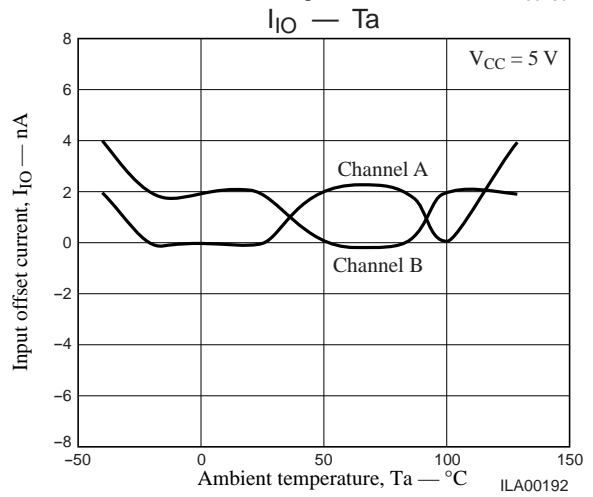
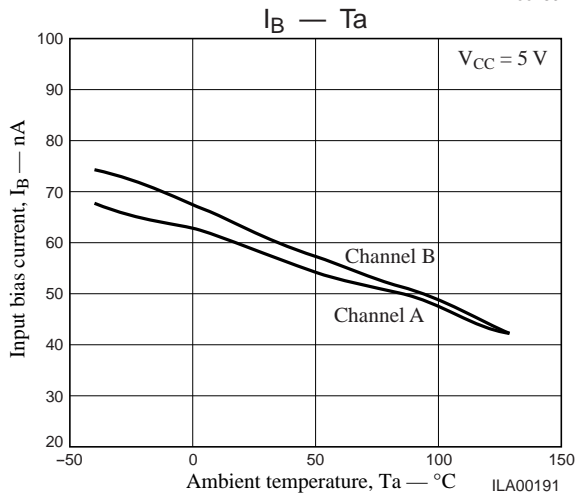
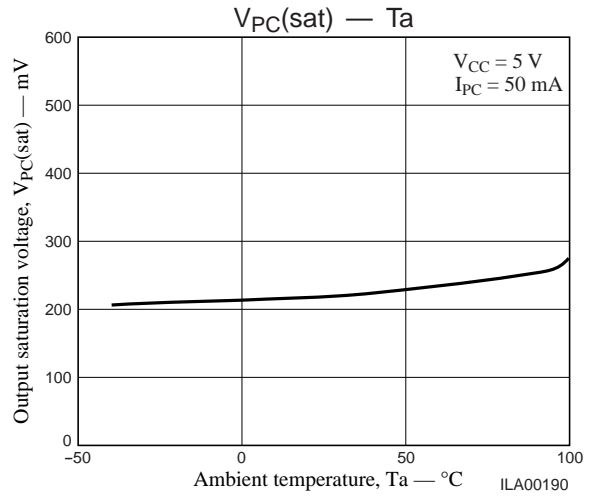
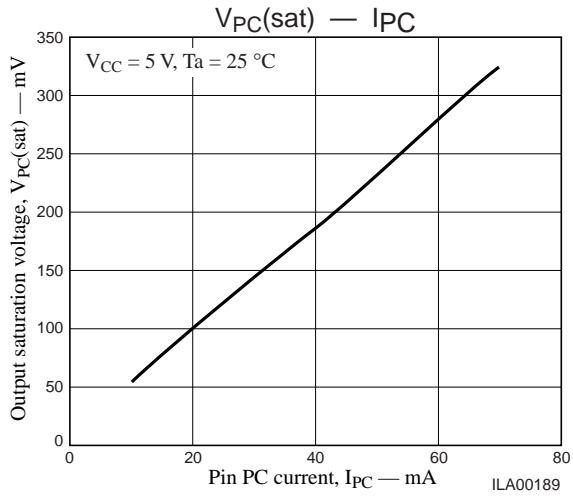
Note: * Design guarantee value. These parameters are not measured.

Pin Assignment

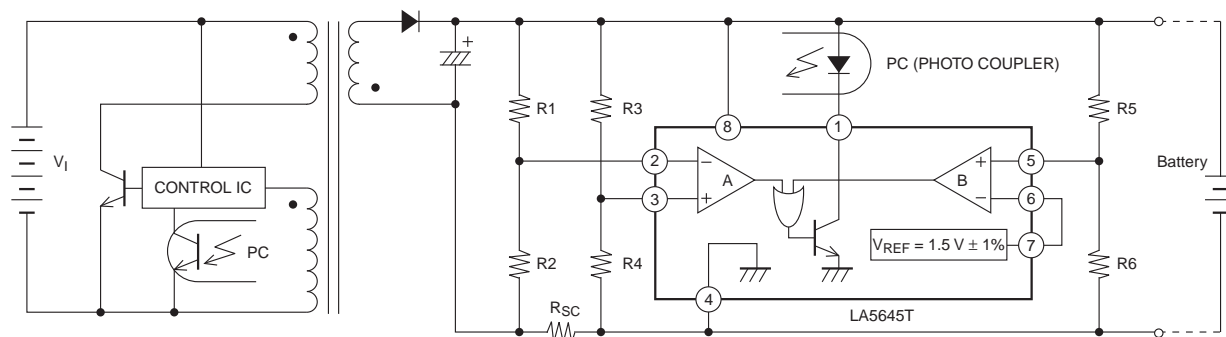


ILA00182





Sample Application Circuit



ILA00195

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