



LA5614M

Charging IC for Nickel – Cadmium and Nickel Metal Hydride Batteries

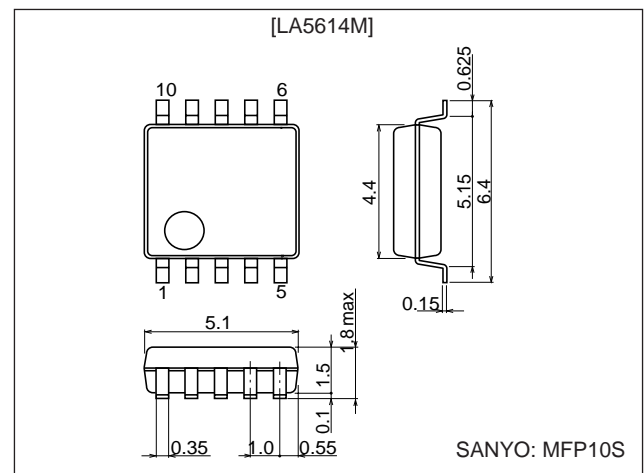
Functions and Features

- Ideally suited for charging systems that use a microcontroller due to charge voltage detection.
- Cycle charge/trickle charge switching.
- Change current can be set with external resistor.

Package Dimensions

unit: mm

3086A-MFP10S



Specifications

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

Parameter	Symbol	Conditions	Ratings	Unit
Maximum supply voltage	$V_{CC \text{ max}}$		9	V
V_{CONT} input voltage	$V_{CONT \text{ max}}$		9	V
BIN pin voltage	$V_{BIN \text{ max}}$		9	V
ON/OFF pin voltage	$V_{ON/OFF \text{ max}}$		5	V
Allowable power dissipation	$P_d \text{ max}$	Independent IC	250	mW
Operating temperature	T_{opr}		-20 to +80	$^\circ\text{C}$
Storage temperature	T_{stg}		-30 to +125	$^\circ\text{C}$

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

Parameter	Symbol	Conditions	Ratings	Unit
Supply voltage	V_{CC}		6 ± 0.3	V
V_{CONT} voltage	V_{CONT}		6 ± 0.3	V
Base output current	I_{BASE}		0 to 14	mA
Trickle sink current	I_{SINK}		0 to 50	mA

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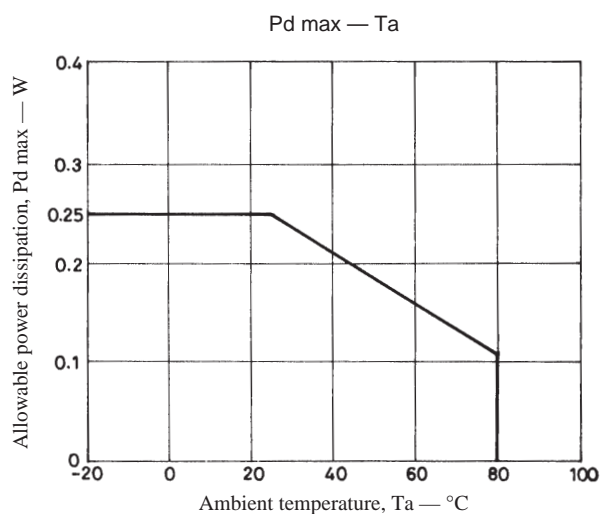
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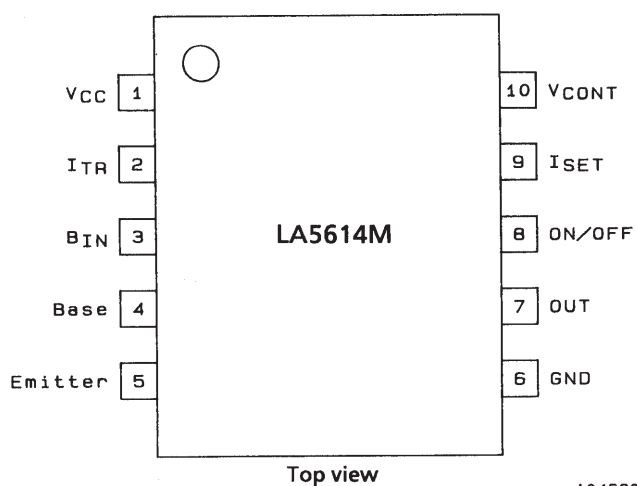
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Electrical Characteristics at $T_a = 25^\circ\text{C}$, $V_{CC} = V_{CONT} = 6\text{ V}$ in specified test circuit

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Quiescent current	I_{CC}	$V_{CONT} = 0\text{ [V]}$			10	μA
Base output current	I_B		10	14	18	mA
V_{CONT} ON voltage	V_C		0.6	1.2	3.4	V
ON/OFF control OFF voltage	V_{OFF}			1.0	1.5	V
Trickle sink current	I_{SINK}	$V_{ON} = 0\text{ [V]}$, $27\ \Omega$ resistor between I_{TR} and GND $V_{BAT} = 4.2\text{ [V]}$		50	60	mA
[OUT pin block]						
Rise offset voltage	V_{OOS}		3.4	3.6	3.8	V
Output "L" level voltage	V_{OL}	$0\text{ V} \leq V_{BAT} < 3.6\text{ V}$	0	0.05	$0.1V_{CC}$	V
Output "H" level voltage	V_{OH}	$V_{BAT} = V_{CC}$	$0.8V_{CC}$		V_{CC}	V
Output gain	V_{OG}		8.0	9.5	11.0	dB

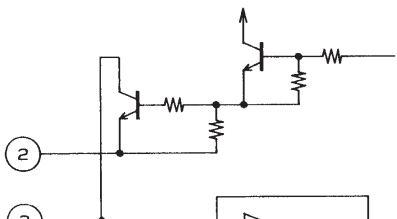
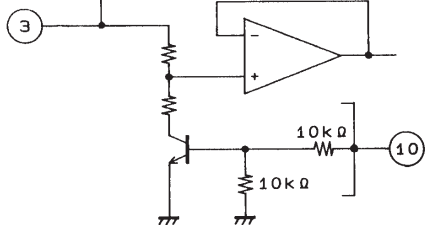
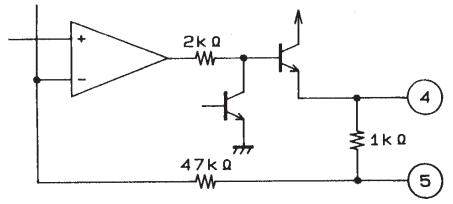
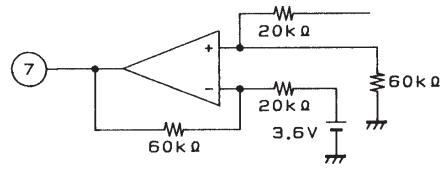
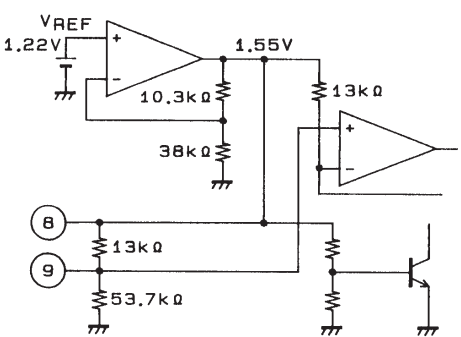
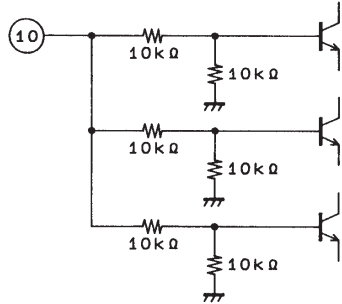


Pin Assignment



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Pin Functions

Pin No.	Pin name	Function	Equivalent circuit
1	V _{CC}	External power supply pin	
2	I _{TR}	Trickle sink current setting pin Connect a resistor between GND and this pin	
3	B _{IN}	Secondary battery negative electrode and external NPN transistor collector connection pin	 A04615
4	Base	External NPN transistor base connection pin	 A04616
5	Emitter	External NPN transistor emitter and cycle charge current detection resistor connection pin	
6	GND	MIN. potential of this IC	
7	OUT	Charge voltage detection output pin Offset voltage: 3.6 V Output gain × 3 (when 3.6 V < V _{BAT} < V _{CC} , 3 Δ V _{BAT} is output)	 A04617
8	ON/OFF	Pin that switches between cycle charge and trickle charge Open: Cycle "L": Trickle	 A04618
9	I _{SET}	Pin for setting cycle charge current Connection of resistor between (9) and GND: Small charge current Connection of resistor between (9) and (8): Large charge current	
10	V _{CONT}	Pin that controls ON/OFF operation of this pin. "H": ON	 A04619

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