



SANYO Semiconductors

DATA SHEET

An ON Semiconductor Company

Bi-CMOS LSI

LV59018M — 1.8V Constant-Voltage Power Supply IC

Overview

The LV59018M is a constant-voltage power supply IC incorporating the output ON/OFF function, which offers advantages such as small current drain when output OFF and saves power dissipation of the equipment.

Features

- 1.8V output
- Output voltage ON/OFF function with the control pin (active, high)
- Output current of 1A obtainable (V_{IN1} , $V_{IN2} \geq 2.8V$)
- Small current drain (1 μ A max) when output OFF and optimum for power saving
- MFP8 (200mil) package, ensuring easy mounting design
- Full compliment of protection circuits incorporated (including overcurrent protection, thermal protection)

Specifications

Absolute Maximum Ratings at $T_a = 25^\circ C$

Parameter	Symbol	Conditions	Ratings	Unit
Maximum power supply	V_{IN1}	V_{IN1} pin	6.2	V
	V_{IN2}	V_{IN2} pin	6.2	V
Allowable power dissipation	P_d max	Mounted on a specified board.*	1.45	W
Operating Temperature	T_{opr}		-30 to +85	$^\circ C$
Storage Temperature	T_{stg}		-40 to +125	$^\circ C$

* Specified board: 50mm $\times$ 50mm $\times$ 1.6mm, glass epoxy both sides

Recommended Operating Ranges at $T_a = 25^\circ C$

Parameter	Symbol	Conditions	Ratings	Unit
power supply	V_{IN1}	V_{IN1} pin	1.9 to 6	V
	V_{IN2}	V_{IN2} pin	1.9 to 6	V
Output current	I_O		0 to 1	A

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LV59018M

Electrical Characteristics at $T_a = 25^\circ\text{C}$, $V_{\text{IN1}} = V_{\text{IN2}} = 3\text{V}$

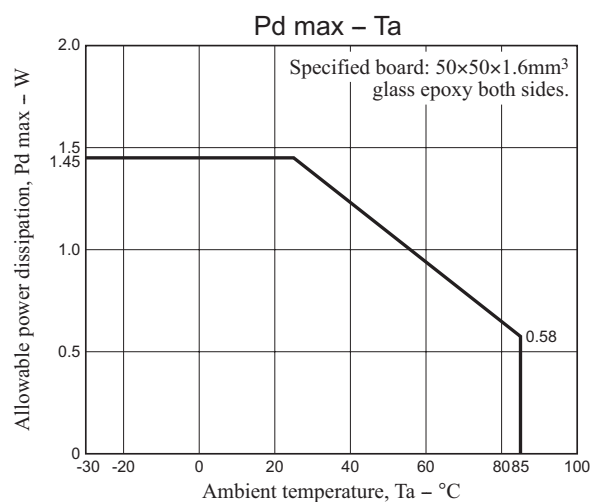
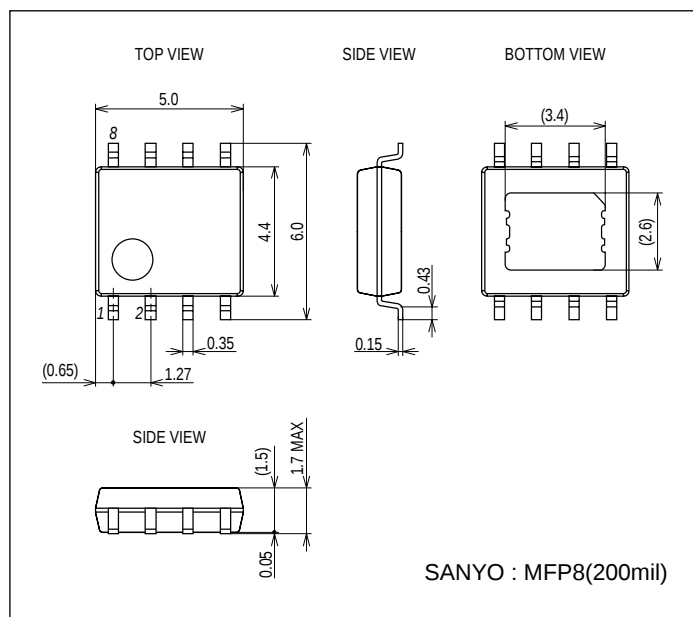
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Current drain	I _{VIN}	LDO ON		110	160	μA
Standby current	I _{STBY}	CTL = Low			1	μA
Output						
Output voltage	V _O	I _O = 10mA	1.767	1.8	1.836	V
Dropout voltage	Vdrop1_1	I _O = 1A			1	V
	Vdrop1_2	I _O = 0.3A			0.4	V
Load Regulation	V _{LD}	I _O = 5mA to 1A		10	50	mV
Line Regulation	V _{LN}	V _{IN1} = V _{IN2} = 1.9V to 6V, I _O = 10mA		10	50	mV
Voltage temperature coefficient	ΔVT	Ta = -30 to +85°C, I _O = 10mA *		±100		ppm/°C
Ripple Rejection	V _{RL}	I _O = 10mA, VRpp=1V, f _{RR} = 1kHz *		65		dB
Output Noise Voltage	V _{ON}	20Hz < f < 20kHz *		100		μVrms
CTL pin						
High level voltage	V _{CTLH}		1.5		5	V
Low level voltage	V _{CTL^L}		0		0.3	V
Input current	I _{CTL}	V _{CTL} = 6V			8.5	μA

* Design guarantee

Package Dimensions

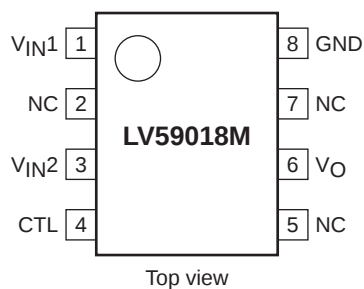
unit : mm (typ)

3372

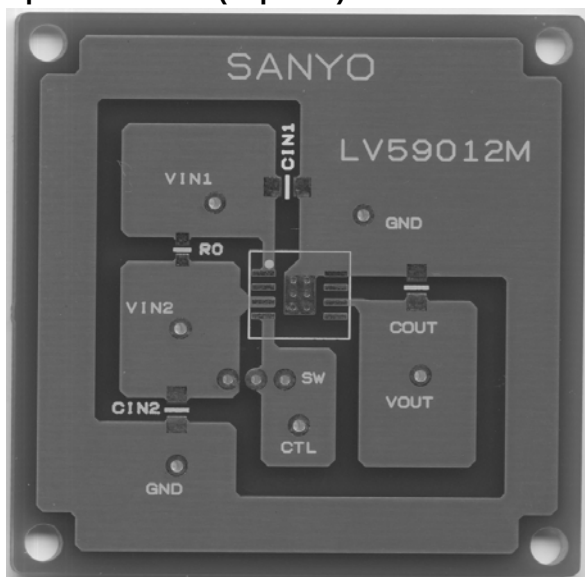


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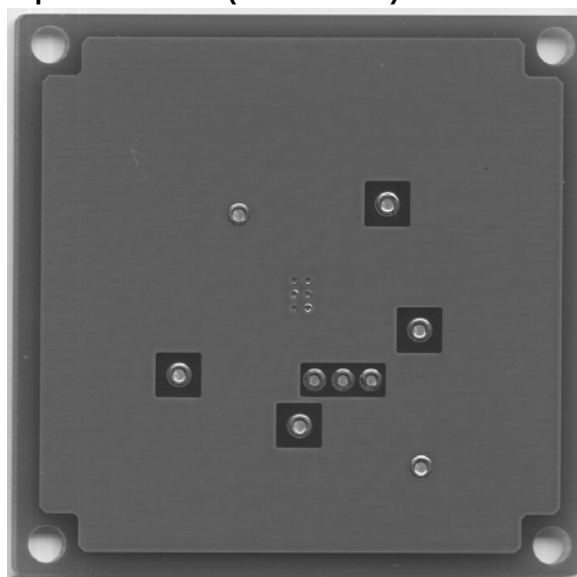
Pin Assignment



Specified Board (Top side)

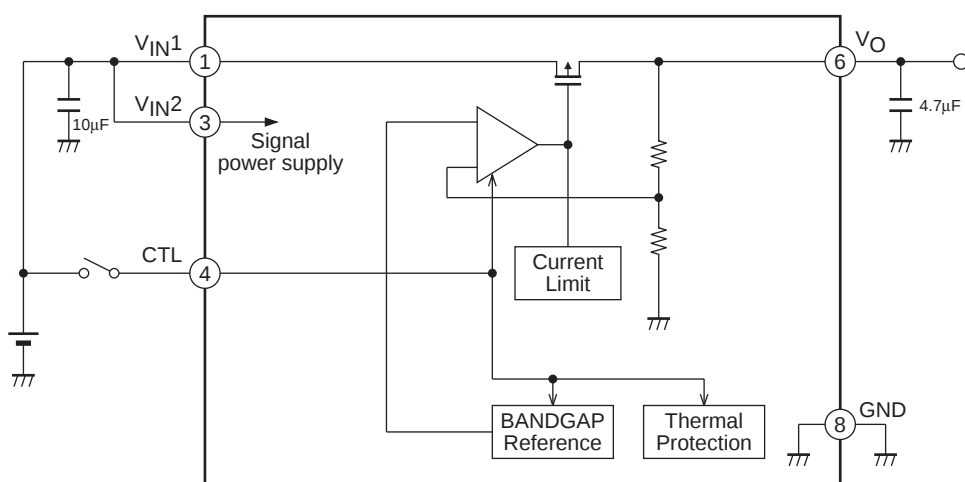


Specified Board (Bottom side)



Note: The substrate is common with LV59012M.

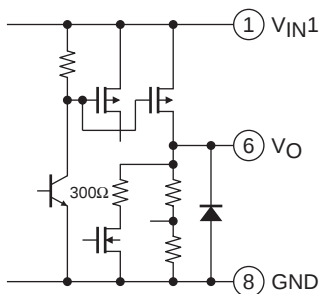
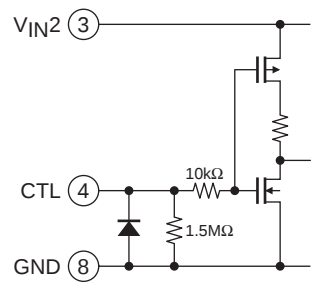
Block Diagram

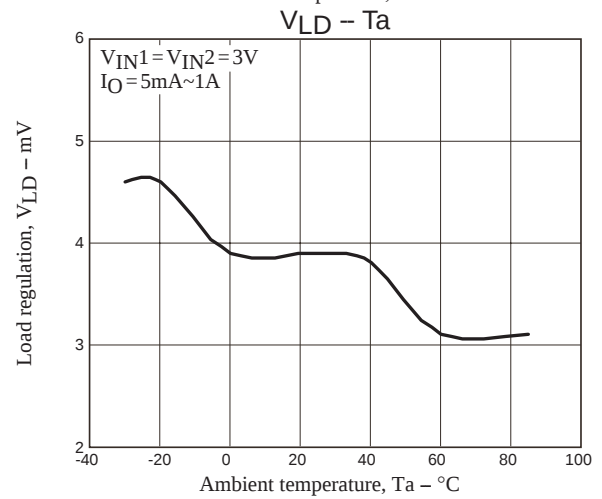
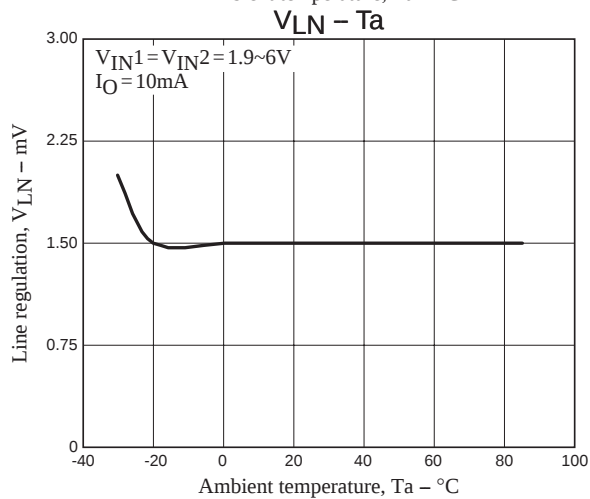
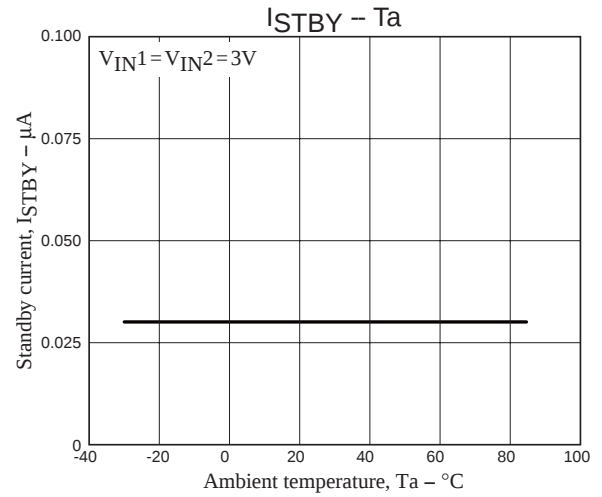
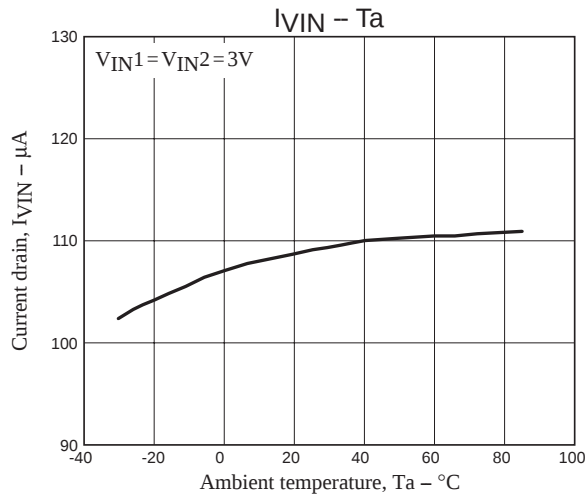


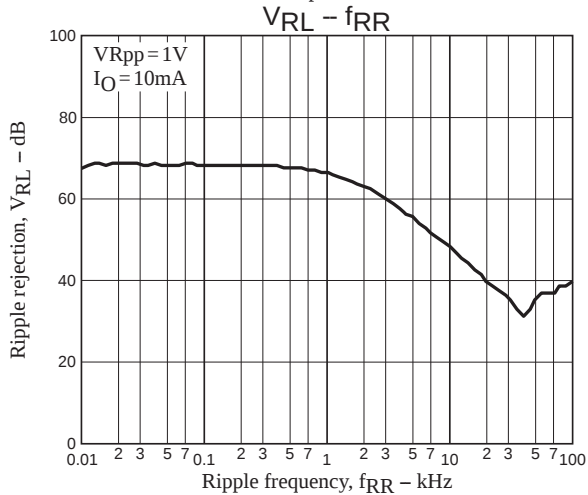
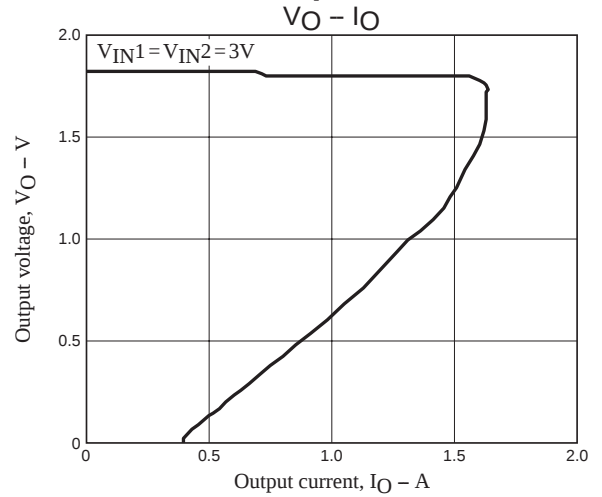
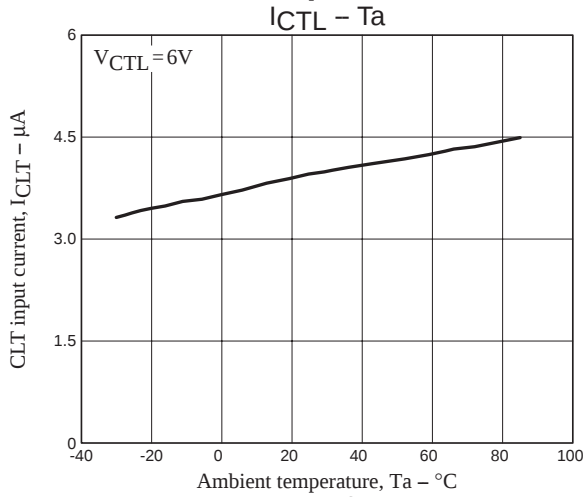
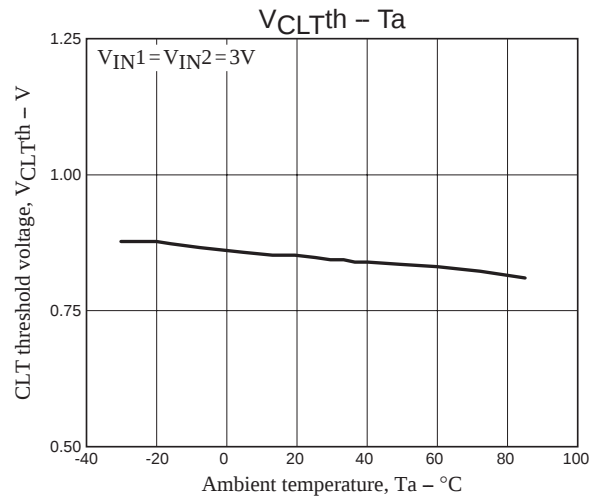
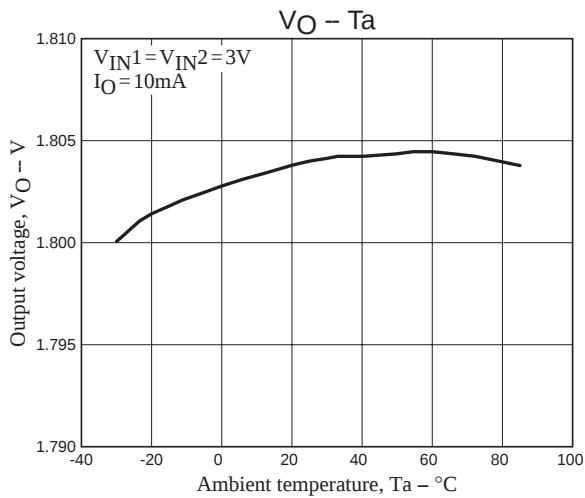
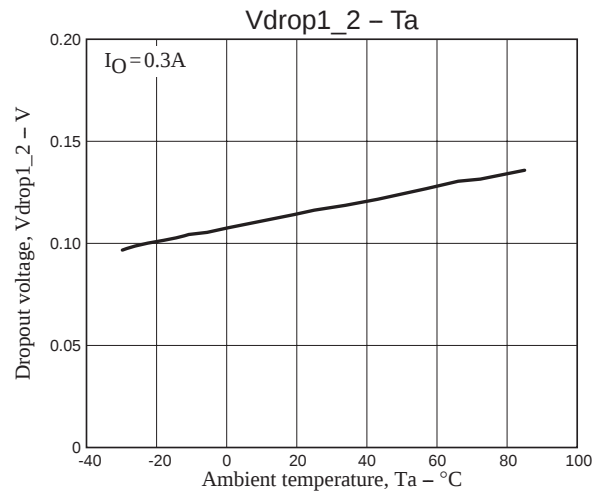
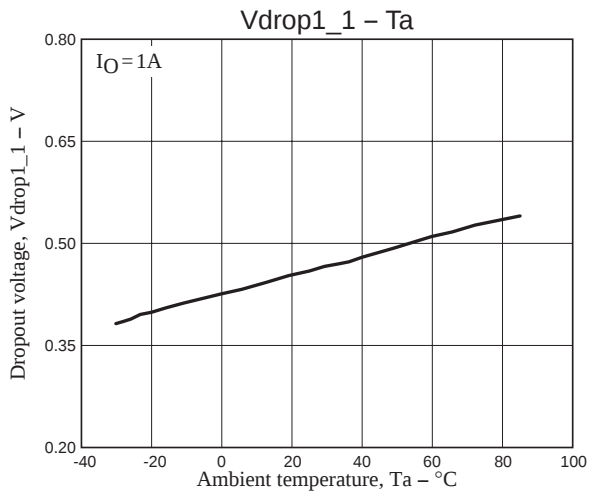
Pins 2,5,7 NC
Connect and use V_{IN1} and V_{IN2}.

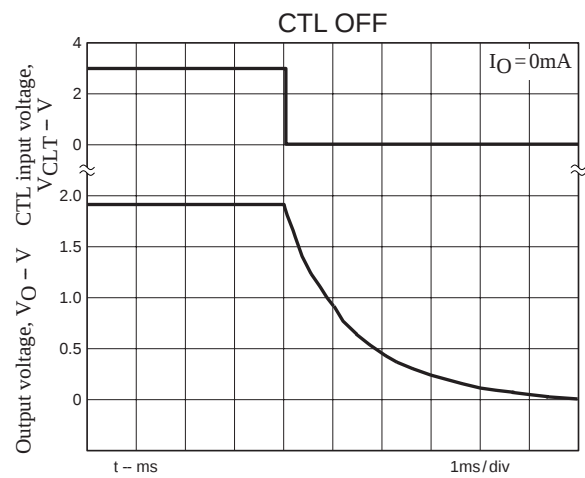
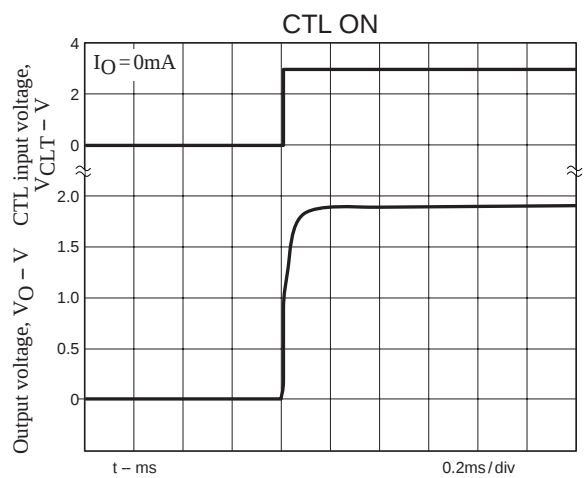
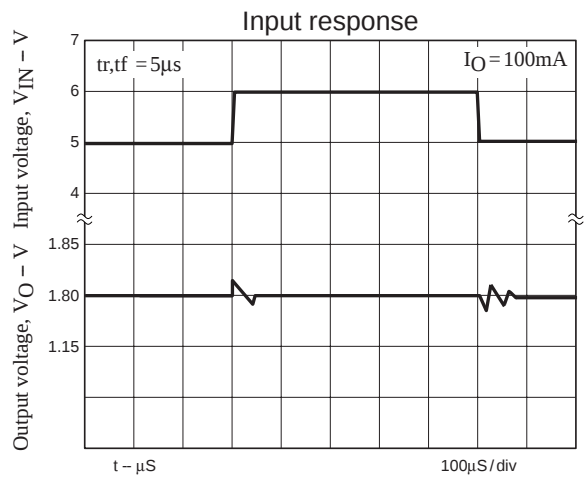
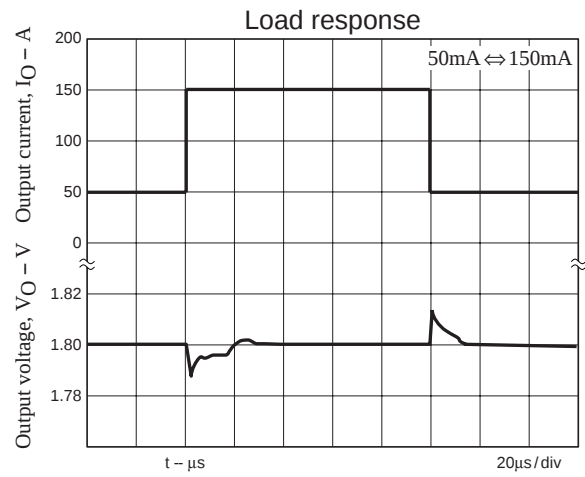
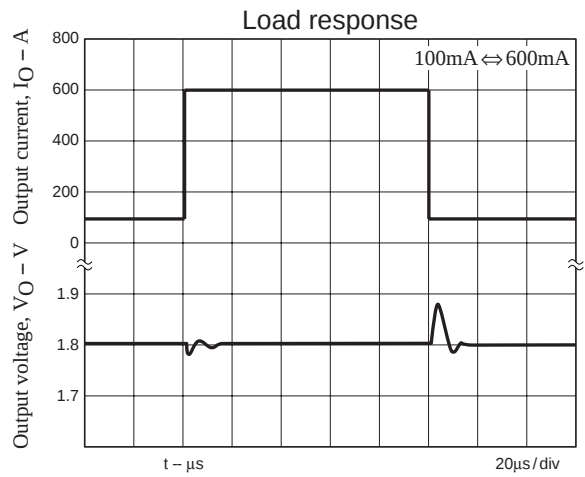
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Pin Function

Pin No.	Pin name	Function	Equivalent circuit
1	V_{IN1}	Power system supply pin.	
6	V_O	Output voltage pin.	
2	NC	No contact.	
3	V_{IN2}	Signal system power supply pin.	
4	CTL	ON/OFF control pin.	
5	NC	No contact.	
7	NC	No contact.	
8	GND	Ground pin.	







Radiation Pad

- Radiation pad is high impedance and connected with a substrate of IC.
- Use radiation pad by GND or opening.

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