



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 $T_a = 25^\circ\text{C}$

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	$P_d \text{ max}$	Mounted on a specified board.*	1.45	W
Operating Temperature	T_{opr}		-30 to +85	$^\circ\text{C}$
Storage Temperature	T_{stg}		-40 to +125	$^\circ\text{C}$

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

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

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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<http://semicon.sanyo.com/en/network>

LV59018M

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

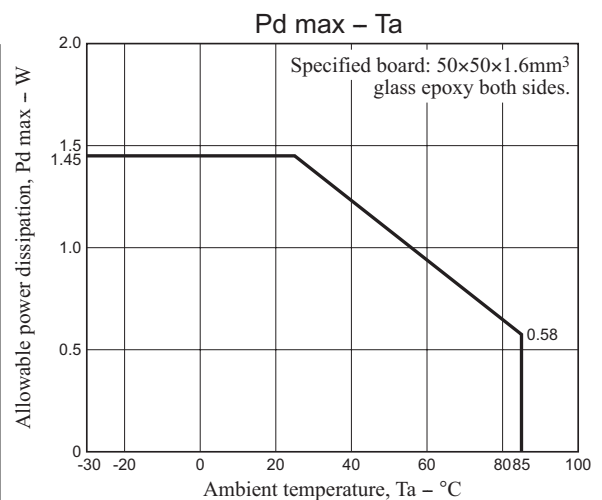
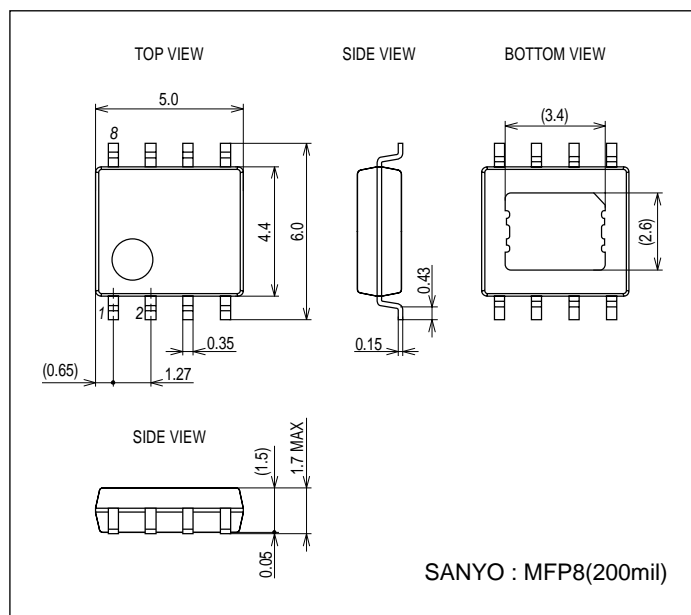
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Current drain	I_{VIN}	LDO ON		110	160	μA
Standby current	I_{STBY}	CTL = Low			1	μA
Output						
Output voltage	V_O	$I_O = 10mA$	1.767	1.8	1.836	V
Dropout voltage	Vdrop1_1	$I_O = 1A$			1	V
	Vdrop1_2	$I_O = 0.3A$			0.4	V
Load Regulation	V_{LD}	$I_O = 5mA$ 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}	$I_O = 10mA$, $V_{Rpp}=1V$, $f_{RR} = 1kHz$	*	65		dB
Output Noise Voltage	V_{ON}	20Hz < f < 20kHz	*	100		μV_{rms}
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

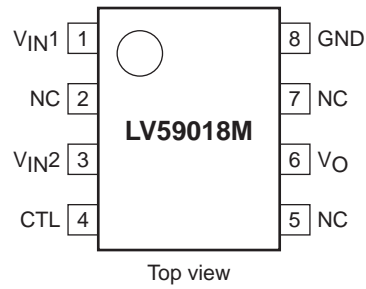
unit : mm (typ)

3372

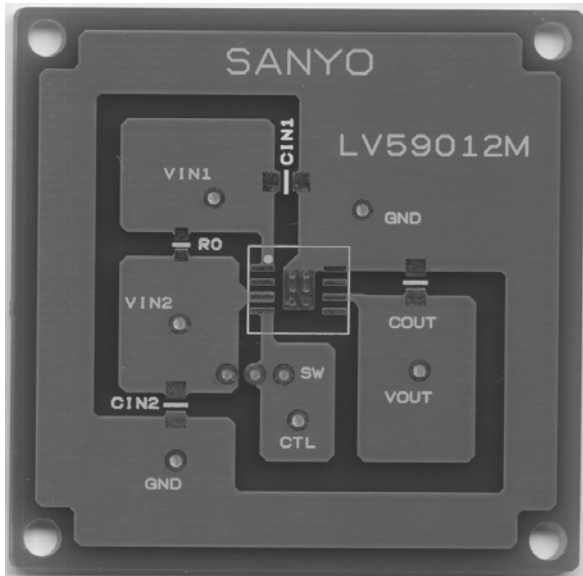


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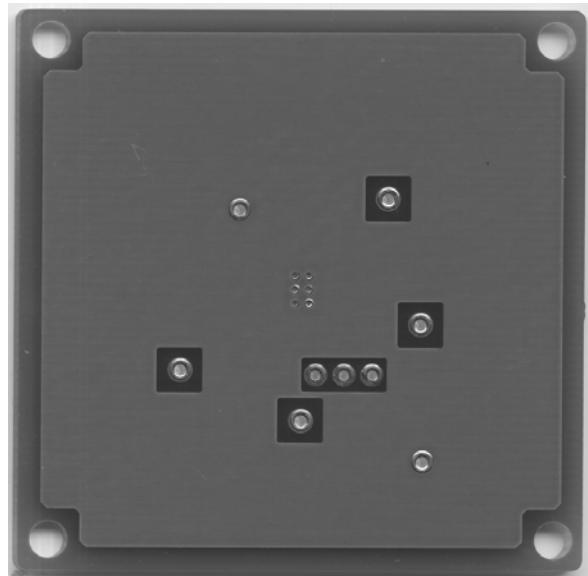
Pin Assignment



Specified Board (Top side)

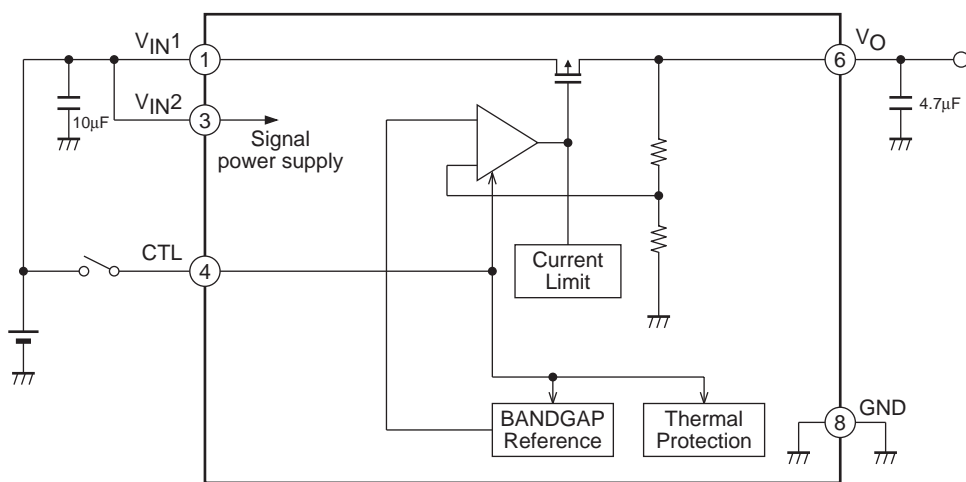


Specified Board (Bottom side)



Note: The substrate is common with LV59012M.

Block Diagram

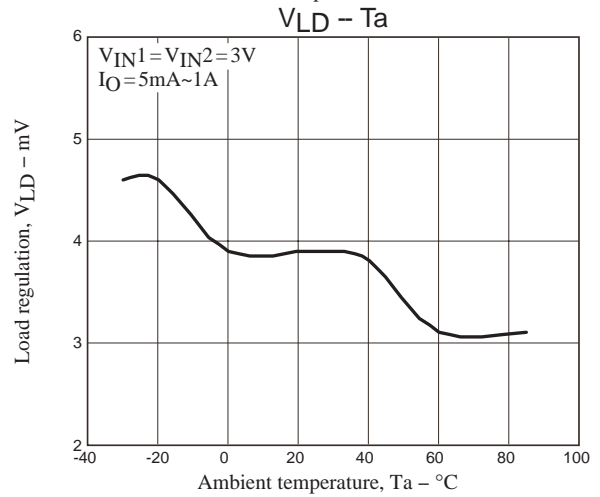
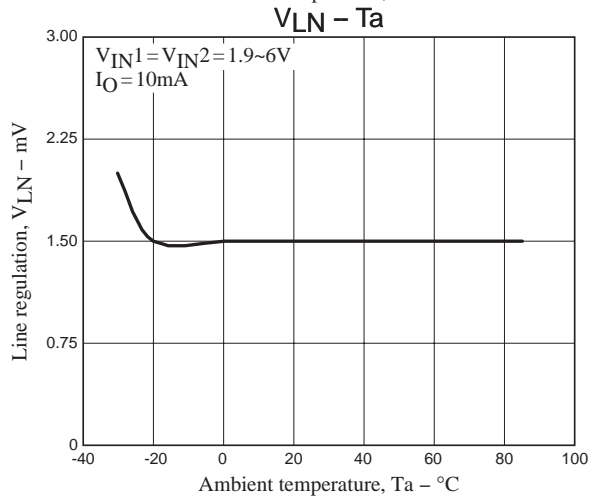
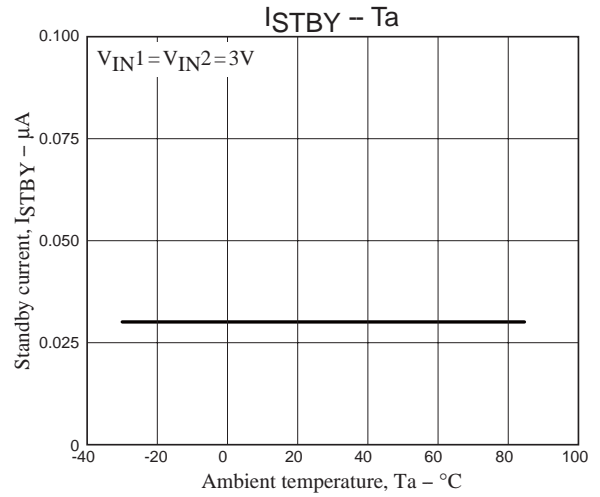
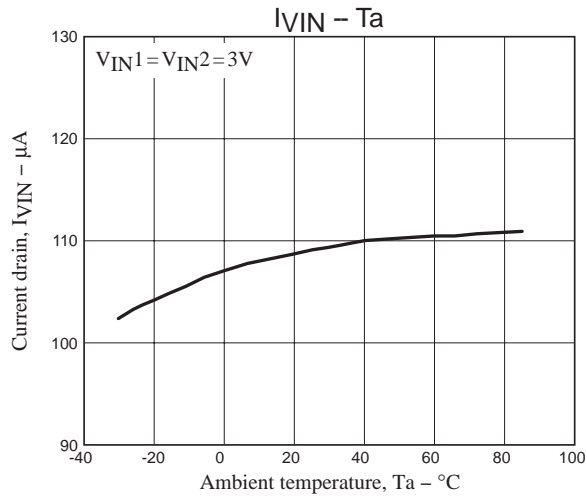


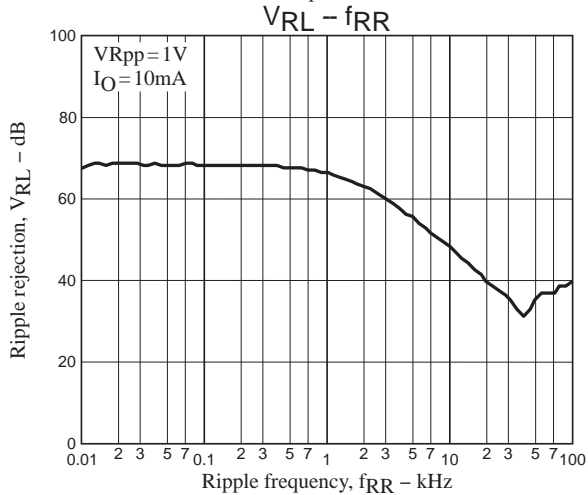
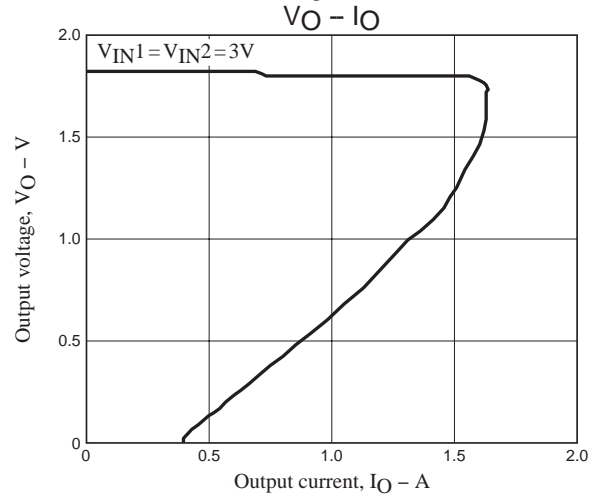
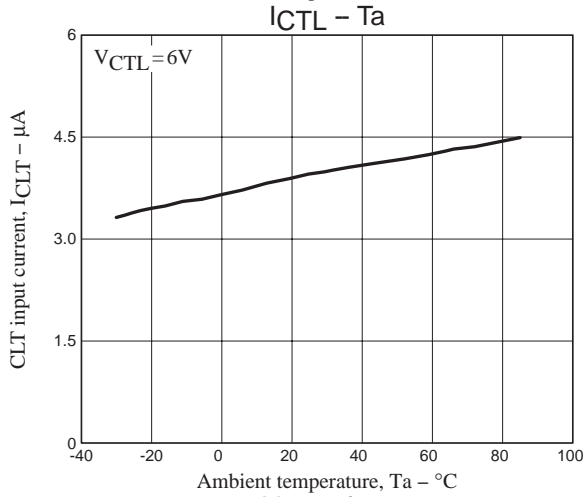
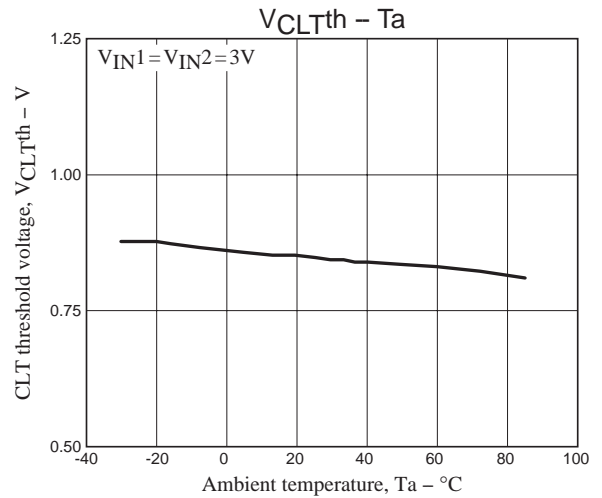
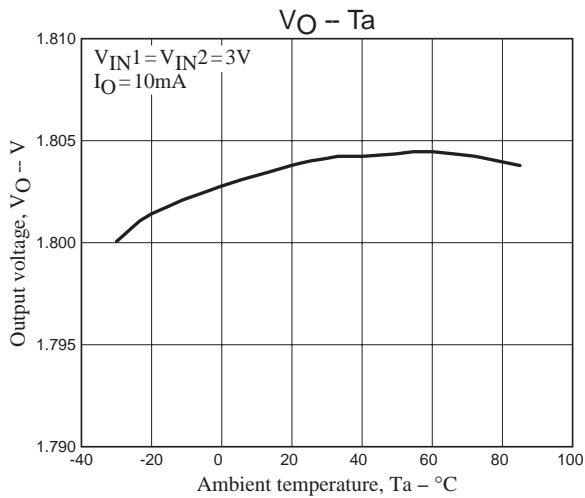
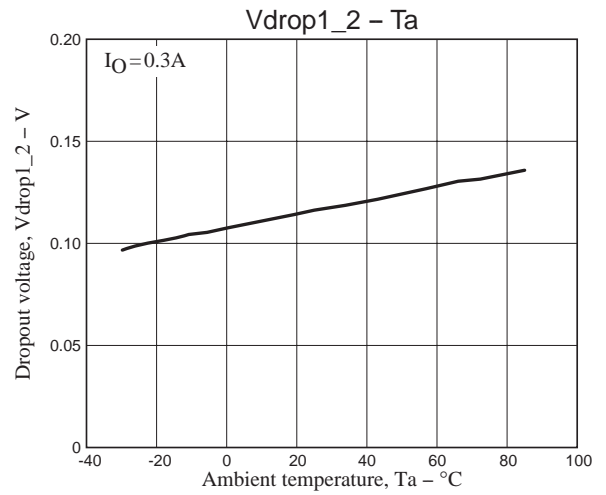
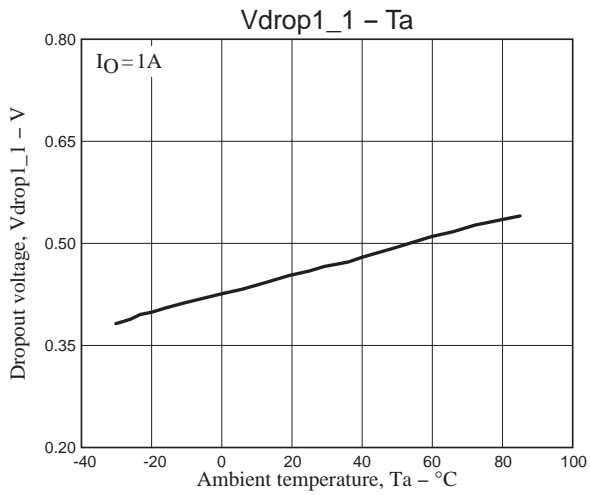
Pins 2,5,7 NC
Connect and use VIN1 and VIN2.

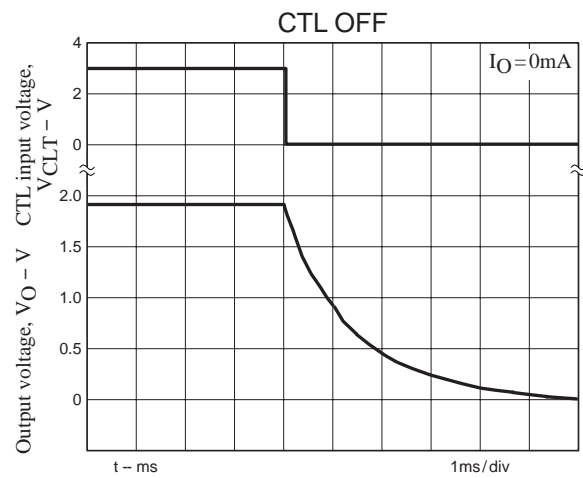
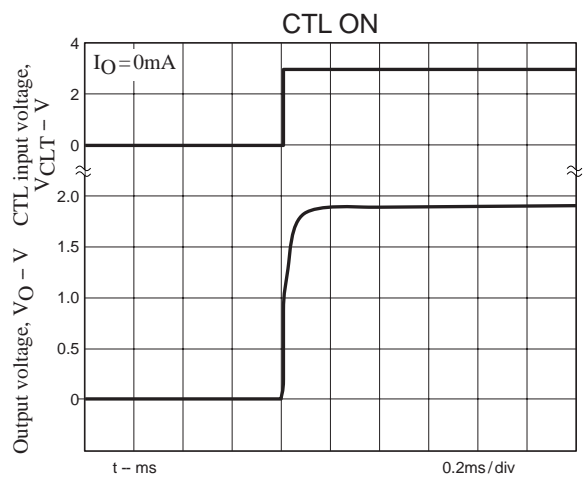
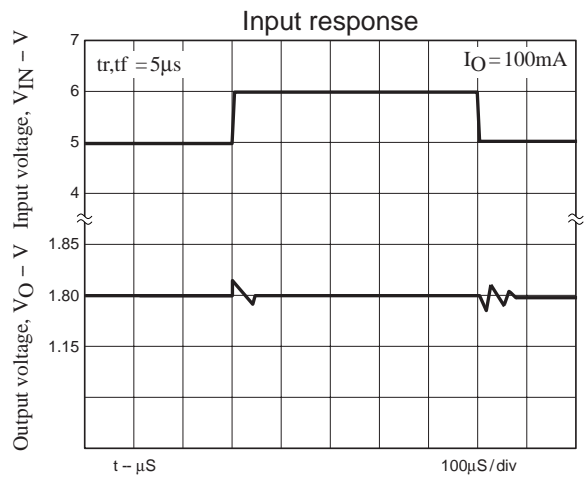
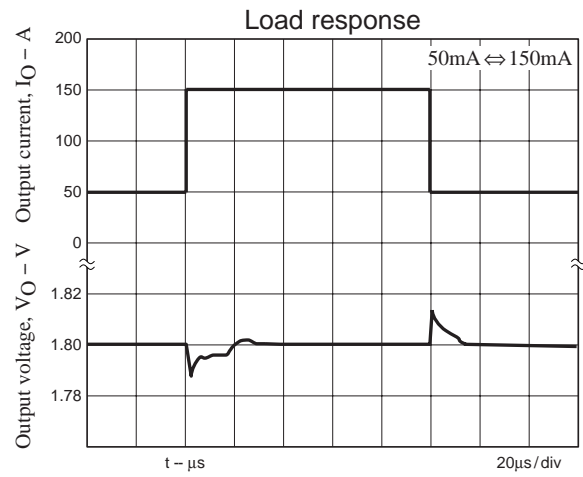
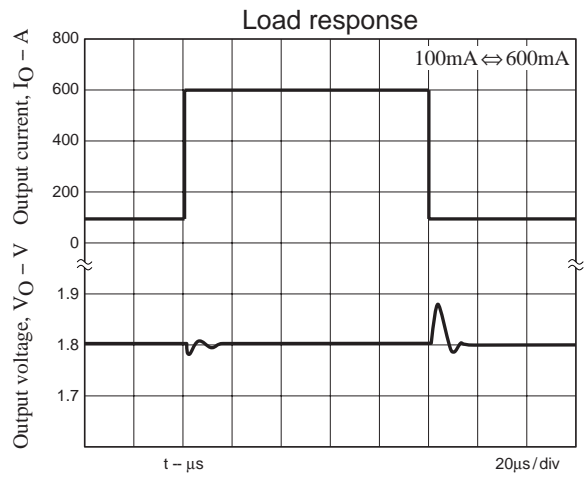
LV59018M

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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