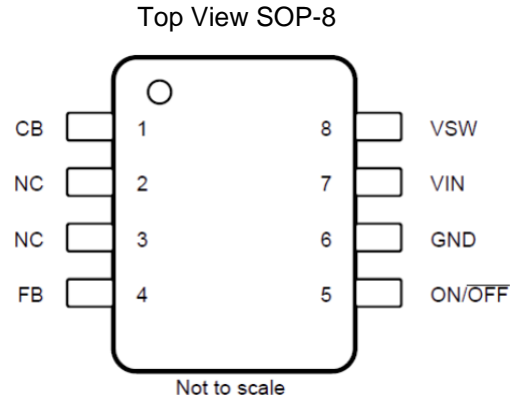


**Product Introduction**

LM2674 series is a DC/DC switching buck converter controlled by a fixed frequency of 260kHz PWM. It is mainly composed of internal frequency compensation, fixed frequency oscillator, built-in overcurrent protection, power switch control and other circuits. It can drive 500mA load with high efficiency, low ripple, good linearity and load adjustment ability. Only a few external components are needed to realize the function of DC/DC voltage reduction and stabilization, which is very simple and practical. PWM control circuit can adjust the duty cycle from 0 according to the load To 100% to achieve high work efficiency. It has an external enabling control opening function, which can realize the controllable switch between standby and work, making the application more flexible.



**Product features**

- Built in overtemperature shutdown function
- Built in overcurrent protection function
- Internal integrated efficient power switch
- Good linearity and load adjustment capability
- ON/OFF pin with hysteresis function
- TTL shutdown capability
- high efficiency
- Simple periphery
- Wide input voltage range: 7V~40V
- Fixed output voltage: 3.3V, 5V, 12V,
- Adjustable output voltage range: 1.21V~37V (adjustable)
- High precision output: ± 2%
- Fixed switching frequency: 260 kHz
- Maximum output current capacity: 500mA
- Minimum linear drop voltage drop: 1.5V
- Package form: SOP-8

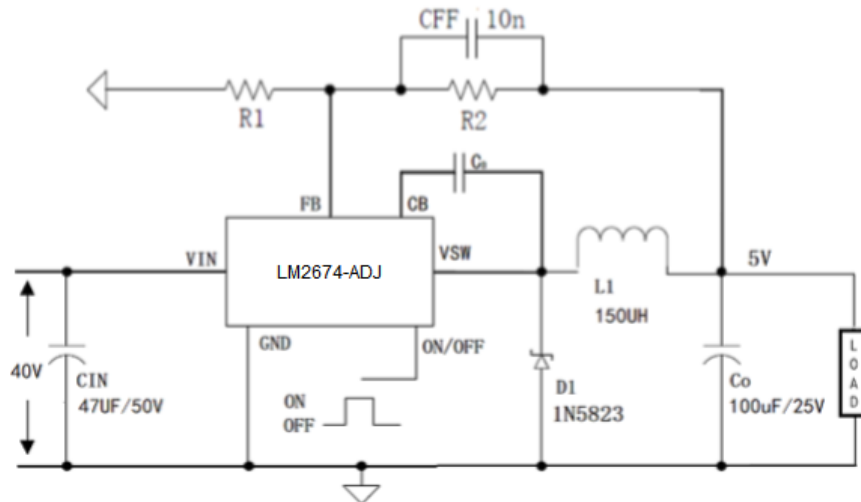
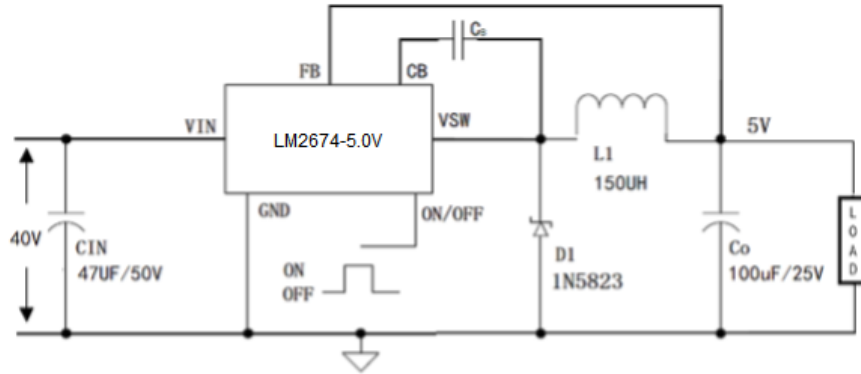
**Product use**

- LCD and LCD TV
- ADSL modem
- LED lights, LED backlight
- Digital photo frame
- Telecommunication/network equipment

**Packaging form and pin function definition**

Pin serial number	Pin definition	Function description
SOP-8		
1	CB	Boost capacitance terminal
2	NC	Empty port
3	NC	Empty port
4	FB	Feedback control terminal
5	ON/OFF	Enable terminal High=ON and low=OFF
6	GND	Power supply ground terminal
7	VIN	Positive terminal of power supply
8	VSW	Power switch output terminal (SW)

■ Application circuit



$$V_{OUT} = V_{REF} (1 + R2/R1)$$

C<sub>B</sub> : 103/50V

**Limit parameter**

project	Symbol	explain	Limit value	Company
Voltage	V <sub>IN</sub>	Input terminal voltage	-0.3~42	V
	V <sub>FB</sub>	FB feedback terminal voltage	-0.3~V <sub>IN</sub>	V
	V <sub>VSW</sub>	Switch output terminal voltage	-1~V <sub>IN</sub>	V
	V <sub>ON-OFF</sub>	Enable enabling terminal voltage	-0.3~6	V
Maximum power consumption	PD	SOP8 package	500	mW
thermal resistance	R <sub>JA</sub>	Put in air without external heat sink	30	°C/W
temperature	T <sub>J</sub>	Operating temperature range	-40~125	°C
	T <sub>c</sub>	Storage temperature range	-40~150	
	T <sub>h</sub>	welding temperature	260	°C,10s

Note: Limit parameter refers to the limit value that cannot be exceeded under any conditions. Once the limit value is exceeded, it may cause physical damage such as product deterioration; At the same time, the chip can not be guaranteed to work normally under the limit parameters.

**electrical properties**
**LM2674-3.3V (Ta=25°C)**

project	Symbol	Test conditions	minimum value	Typical value	Maximum	Company
output voltage	V <sub>OUT</sub>	V <sub>IN</sub> =7V to 40V, I <sub>OUT</sub> =20MA to500MA	3.234	3.3	3.366	V
Enable shutdown current	I <sub>STB</sub>	V <sub>IN</sub> =40V, V <sub>ON-OFF</sub> =0V	-	100	200	uA
Quiescent current	I <sub>Q</sub>	V <sub>IN</sub> =12V, V <sub>FB</sub> =8V, V <sub>ON-OFF</sub> =5V,	-	3	7	mA
Output peak current	I <sub>CL</sub>	V <sub>IN</sub> =12V, V <sub>ON-OFF</sub> =5V, V <sub>FB</sub> =0, no L1 and D1	-	1.2	-	A
Output leakage current	I <sub>OL</sub>	V <sub>IN</sub> =40V, V <sub>ON-OFF</sub> =0V, no L1 and D1	V <sub>VSW</sub> =0V	-	10	uA
			V <sub>VSW</sub> =-1V	-	2.5	10
Enable enable terminal current	I <sub>ON-OFL</sub>	V <sub>IN</sub> =12V, V <sub>ON-OFF</sub> =0.5V	-	4	15	uA
	I <sub>ON-OFFH</sub>	V <sub>IN</sub> =12V, V <sub>ON-OFF</sub> =2.5V	-	1.5	15	uA
Enable effective voltage of enable terminal	V <sub>ON-OFFH</sub>	V <sub>IN</sub> =12V (ON)	1.5	-	-	V
	V <sub>ON-OFL</sub>	V <sub>IN</sub> =12V (OFF)	-	-	0.8	V
Output saturation voltage	V <sub>CE</sub>	V <sub>IN</sub> =12V, V <sub>FB</sub> =0V, I <sub>OUT</sub> =500MA	-	1.0	1.5	V
switching frequency	f <sub>osc</sub>	V <sub>IN</sub> =12V	225	260	275	kHz
Duty cycle	D <sub>max</sub>	V <sub>IN</sub> =12V, V <sub>FB</sub> =0V,	0	-	100	%
efficiency	η	V <sub>IN</sub> =12V, V <sub>OUT</sub> =3.3V, I <sub>OUT</sub> =500MA	-	80	-	%
input voltage	V <sub>IN</sub>	-	7	-	40	V

◆ LM2674-5.0V (Ta=25°C)

project	Symbol	Test conditions	minimum value	Typical value	Maximum	Company
output voltage	$V_{OUT}$	$V_{IN} = 7 \text{ to } 40V, I_{OUT} = 20mA \text{ to } 500mA$	4.90	5	5.10	V
Enable shutdown current	$I_{STB}$	$V_{IN} = 40V, V_{ON-OFF} = 0V$	-	100	200	uA
Quiescent current	$I_Q$	$V_{IN} = 12V, V_{FB} = 8V, V_{ON-OFF} = 5V,$	-	3	7	mA
Output peak current	$I_{CL}$	$V_{IN} = 12V, V_{ON-OFF} = 5V, V_{FB} = 0,$ no L1 and D1	-	1.2	-	A
Output leakage current	$I_{OL}$	$V_{IN} = 40V, V_{ON-OFF} = 0V,$ no L1 and D1	-		10	uA
		$V_{VSW} = 0V$	-	2.5	10	mA
Enable enable terminal current	$I_{ON-OFFL}$	$V_{IN} = 12V, V_{ON-OFF} = 0.5V$	-	4	15	uA
	$I_{ON-OFFH}$	$V_{IN} = 12V, V_{ON-OFF} = 2.5V$	-	1.5	15	uA
Enable effective voltage of enable terminal	$V_{ON-OFFH}$	$V_{IN} = 12V (ON)$	1.5	-	-	V
	$V_{ON-OFFL}$	$V_{IN} = 12V (OFF)$	-	-	0.8	V
Output saturation voltage	$V_{CE}$	$V_{IN} = 12V, V_{FB} = 0V, I_{OUT} = 500mA$	-	1.0	1.5	V
switching frequency	$f_{osc}$	$V_{IN} = 12V$	225	260	275	kHz
Duty cycle	$D_{max}$	$V_{IN} = 12V, V_{FB} = 0V,$	0	-	100	%
efficiency	$\eta$	$V_{IN} = 12V, V_{OUT} = 5V, I_{OUT} = 500mA$	-	80	-	%
input voltage	$V_{IN}$	-	7	-	40	V

◆ LM2674-12V (Ta=25°C)

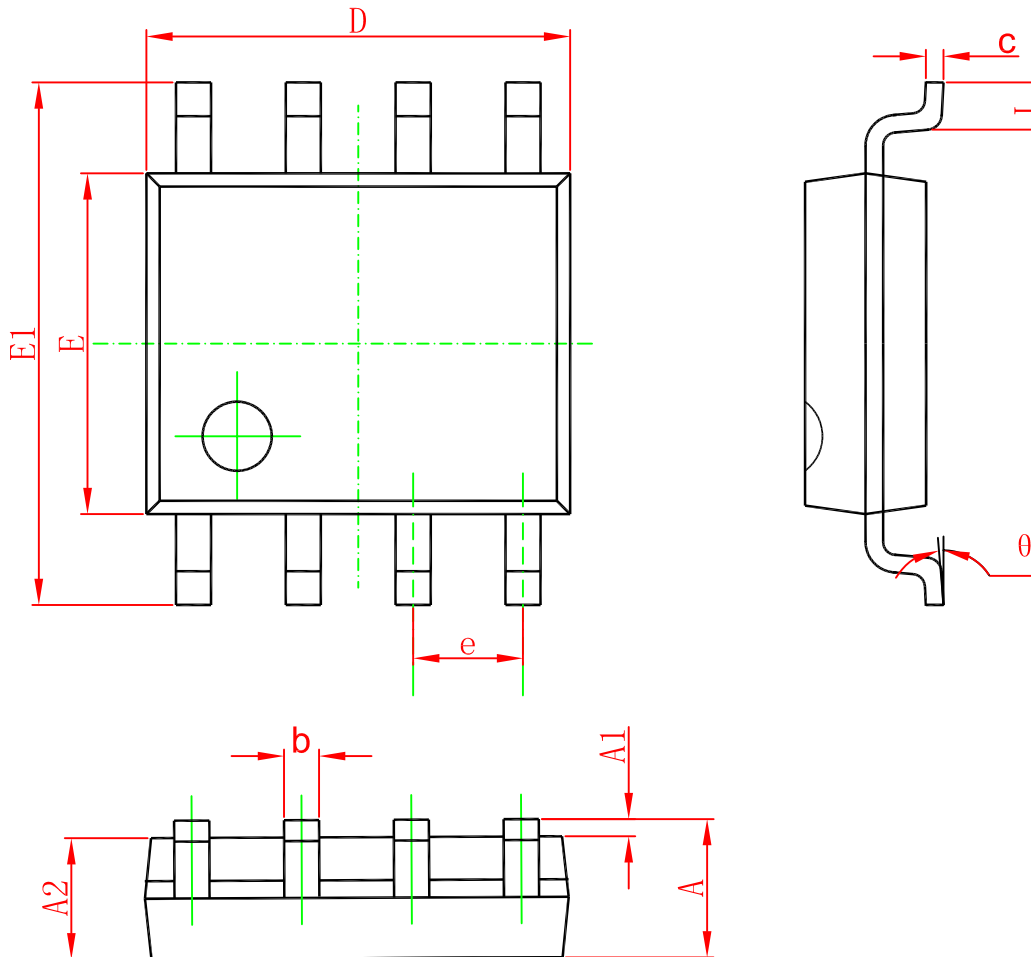
project	Symbol	Test conditions	minimum value	Typical value	Maximum	Company
output voltage	$V_{OUT}$	$V_{IN} = 14$ to $40V$ , $I_{OUT} = 20mA$ to $500mA$	11.76	12	12.24	V
Enable shutdown current	$I_{STB}$	$V_{IN} = 40V$ , $V_{ON-OFF} = 0V$	-	100	200	uA
Quiescent current	$I_q$	$V_{IN} = 15V$ , $V_{FB} = 13V$ , $V_{ON-OFF} = 5V$ ,	-	3	7	mA
Output peak current	$I_{CL}$	$V_{IN} = 15V$ , $V_{ON-OFF} = 5V$ , $V_{FB} = 0$ , no L1 and D1	-	1.2	-	A
Output leakage current	$I_{OL}$	$V_{IN} = 40V$ , $V_{ON-OFF} = 0V$ , no L1 and D1	$V_{VSW} = 0V$	-	10	uA
			$V_{VSW} = -1V$	-	2.5	10
Enable enable terminal current	$I_{ON-OFFL}$	$V_{IN} = 15V$ , $V_{ON-OFF} = 0.5V$	-	4	15	uA
	$I_{ON-OFFH}$	$V_{IN} = 15V$ , $V_{ON-OFF} = 2.5V$	-	1.5	15	uA
Enable effective voltage of enable terminal	$V_{ON-OFFH}$	$V_{IN} = 15V$ (ON)	1.5	-	-	V
	$V_{ON-OFFL}$	$V_{IN} = 15V$ (OFF)	-	-	0.8	V
Output saturation voltage	$V_{CE}$	$V_{IN} = 15V$ , $V_{FB} = 0V$ , $I_{OUT} = 500mA$	-	1.0	1.5	V
switching frequency	$f_{osc}$	$V_{IN} = 15V$	225	260	275	kHz
Duty cycle	$D_{max}$	$V_{IN} = 15V$ , $V_{FB} = 0V$ ,	0	-	100	%
efficiency	$\eta$	$V_{IN} = 15V$ , $V_{OUT} = 12V$ , $I_{OUT} = 500mA$	-	85	-	%
input voltage	$V_{IN}$	-	13.5	-	40	V

◆ LM2674-ADJ (Ta=25°C)

project	Symbol	Test conditions	minimum value	Typical value	Maximum	Company
Reference voltage	$V_{REF}$	$V_{IN} = 7V$ to $40V$ , $I_{OUT} = 20mA$ to $500mA$	1.185	1.21	1.234	V
Enable shutdown current	$I_{STB}$	$V_{IN} = 40V$ , $V_{ON-OFF} = V_{VSW}$	-	100	200	uA
Quiescent current	$I_q$	$V_{ON-OFF} = 0V$ , $V_{FB} = V_{IN}$	-	3	7	mA
Output peak current	$I_{CL}$	$V_{ON-OFF} = V_{FB} = 0$ , no L1 and D1	-	1.2	-	A
Output leakage current	$I_{OL}$	$V_{IN} = V_{FB}$ , $V_{ON-OFF} = 5V$ , no L1 and D1	$V_{VSW} = 0V$	-	10	uA
			$V_{VSW} = -1V$	-	2.5	10
Enable enable terminal current	$I_{ON-OFL}$	$V_{IN} = 12V$ , $V_{ON-OFF} = 0.5V$	-	4	15	uA
	$I_{ON-OFFH}$	$V_{IN} = 12V$ , $V_{ON-OFF} = 2.5V$	-	1.5	15	uA
Enable effective voltage of enable terminal	$V_{ON-OFFH}$	$V_{IN} = 12V$ (OFF)	1.5	-	-	V
	$V_{ON-OFL}$	$V_{IN} = 12V$ (ON)	-	-	0.8	V
Feedback terminal current	$I_{FB}$	$V_{IN} = 12V$ , $I_{FB} = 1.3V$	-	85	-	nA
Output saturation voltage	$V_{CE}$	$V_{IN} = 12V$ , $V_{FB} = 0V$ , $I_{OUT} = 500mA$	-	1.0	1.5	V
switching frequency	$f_{osc}$	$V_{IN} = 12V$	225	260	275	kHz
Duty cycle	$D_{max}$	$V_{IN} = 12V$ , $V_{FB} = 0V$ ,	0	-	100	%
efficiency	$\eta$	$V_{IN} = 12V$ , $V_{OUT} = 5V$ , $I_{OUT} = 500mA$	-	80	-	%
input voltage	$V_{IN}$	-	7	-	40	V

■ Encapsulation information

SOP-8



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	1.350	1.750	0.053	0.069
A1	0.100	0.250	0.004	0.010
A2	1.350	1.550	0.053	0.061
b	0.330	0.510	0.013	0.020
c	0.170	0.250	0.006	0.010
D	4.700	5.100	0.185	0.200
E	3.800	4.000	0.150	0.157
E1	5.800	6.200	0.228	0.244
e	1.270(BSC)		0.050(BSC)	
L	0.400	1.270	0.016	0.050
theta	0°	8°	0°	8°

### Ordering information

Order code	Package	Baseqty	Deliverymode	Marking
UMW LM2674M-5.0	SOP-8	2500	Tape and reel	LM2674-5.0
UMW LM2674M-ADJ	SOP-8	2500	Tape and reel	LM2674-ADJ
UMW LM2674M-3.3	SOP-8	2500	Tape and reel	LM2674-3.3
UMW LM2674M-12	SOP-8	2500	Tape and reel	LM2674-12