■ Product Introduction

LM2675 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 1A 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.

Top View SOP-8

CB	1		8	VSW
NC	2		7	VIN
NC	3		6	GND
FB	4		5	ON/OFF

Not to scale

■ 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: 1A
● 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
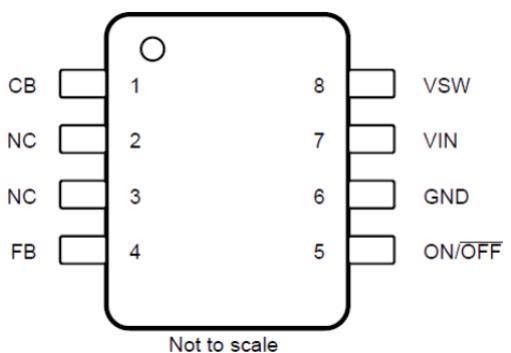
■ Packaging form and pin function definition

Pinserial number SOP-8	Pin definition	Function description
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

FB CB C₀

VIN LM2675-5.0V VSW

L1
150UH

5V

40V CIN
47UF/50V

GND ON/OFF

ON
OFF

D1
1N5823

Co
100uF/25V

LOAD

CFF 10n

R1 R2

FB CB C₀

VIN LM2675-ADJ VSW

L1
150UH

5V

40V CIN
47UF/50V

GND ON/OFF

ON
OFF

D1
1N5823

Co
100uF/25V

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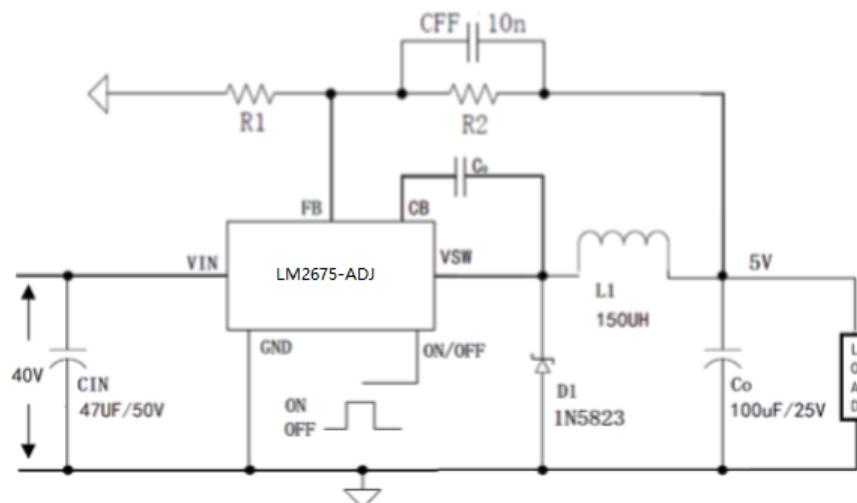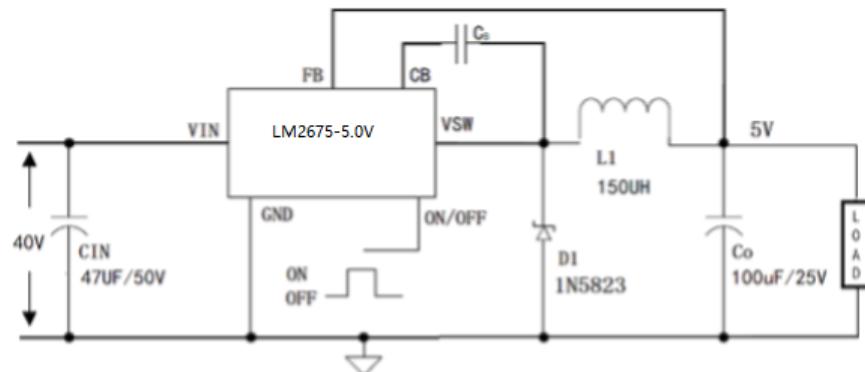
$V_{OUT} = V_{REF} (1+R2/R1)$

$C_B :$ 103/50V

■ Limit parameter

project	Symbol	explain	Limit value	Company
Voltage	VIN	Input terminal voltage	-0.3~42	V
	VFB	FB feedback terminal voltage	-0.3~VIN	V
	V_{VSW}	Switch output terminal voltage	-1~VIN	V
	V_{ON-OFF}	Enable enabling terminal voltage	-0.3~6	V
Maximum power consumption	PD	SOP8 package	500	mW
thermal resistance	R_{JA}	Put in air without external heat sink	30	℃/W
temperature	Tj	Operating temperature range	-40—125	℃
	Tc	Storage temperature range	-40—150	
	Th	welding temperature	260	℃,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

◆ LM2675-3.3V　　　　　　　（Ta=25℃）

project	Symbol	Test conditions		minimum value	Typical value	Maximum	Company
output voltage	V_{OUT}	V_{IN} =7V to 40V, I_{OUT} =20MA to 1A		3.234	3.3	3.366	V
Enable shutdown current	I_{STB}	V_{IN} =40V, V_{ON-OFF}=0V		-	100	200	uA
Quiescent current	Iq	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		-	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	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}= 1A		-	1.0	1.5	V
switching frequency	fosc	V_{IN} =12V		225	260	275	kHz
Duty cycle	D_{MAX}	V_{IN} =12V, V_{FB}=0V,		0	-	100	%
efficiency	η	V_{IN} =12V, V_{OUT} =3.3V, I_{OUT}=1A		-	80	-	%
input voltage	V_{IN}	—		7	-	40	V

◆ LM2675-5.0V （Ta=25℃）

project	Symbol	Test conditions		minimum value	Typical value	Maximum	Company
output voltage	V_{OUT}	V_{IN} =7 to 40V, I_{OUT} =20MA to 1A		4.90	5	5.10	V
Enable shutdown current	I_{STB}	V_{IN} =40V, V_{ON-OFF}=0V		-	100	200	uA
Quiescent current	Iq	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		-	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	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}= 1A		-	1.0	1.5	V
switching frequency	fosc	V_{IN} =12V		225	260	275	kHz
Duty cycle	D_{MAX}	V_{IN} =12V, V_{FB}=0V,		0	-	100	%
efficiency	η	V_{IN} =12V, V_{OUT}=5V, I_{OUT}= 1A		-	80	-	%
input voltage	V_{IN}	−		7	-	40	V

◆ LM2675-12V （Ta=25℃）

project	Symbol	Test conditions		minimum value	Typical value	Maximum	Company
output voltage	V_{OUT}	V_{IN} =14 to 40V, I_{OUT} =20MA to 1A		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		-	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	mA
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}= 1A		-	1.0	1.5	V
switching frequency	fosc	V_{IN} =15V		225	260	275	kHz
Duty cycle	D_{MAX}	V_{IN} =15V, V_{FB}=0V,		0	-	100	%
efficiency	η	V_{IN} =15V, V_{OUT} =12V, I_{OUT}= 1A		-	85	-	%
input voltage	V_{IN}	−		13.5	-	40	V

◆ LM2675-ADJ （Ta=25℃）

project	Symbol	Test conditions		minimum value	Typical value	Maximum	Company
Reference voltage	V_{REF}	V_{IN} =7V to 40V, I_{OUT} =20MA to1A		1.185	1.21	1.234	V
Enable shutdown current	I_{STB}	V_{IN} =40V, $V_{ON-oOFF}$= V_{VSW}		-	100	200	uA
Quiescent current	Iq	$V_{ON-oOFF}$=0V, V_{FB}=V_{IN}		-	3	7	mA
Output peak current	I_{CL}	V_{ON-OFF} =V_{FB}=0, no L1 and D1		-	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	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 (OFF)		1.5	-	-	V
	$V_{ON-OFFL}$	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} = 1 A		-	1.0	1.5	V
switching frequency	fosc	V_{IN} =12V		225	260	275	kHz
Duty cycle	D_{MAX}	V_{IN} =12V, V_{FB}=0V,		0	-	100	%
efficiency	η	V_{IN} =12V, V_{OUT} =5V, I_{OUT} = 1 A		-	80	-	%
input voltage	V_{IN}	−		7	-	40	V

■ Encapsulation information

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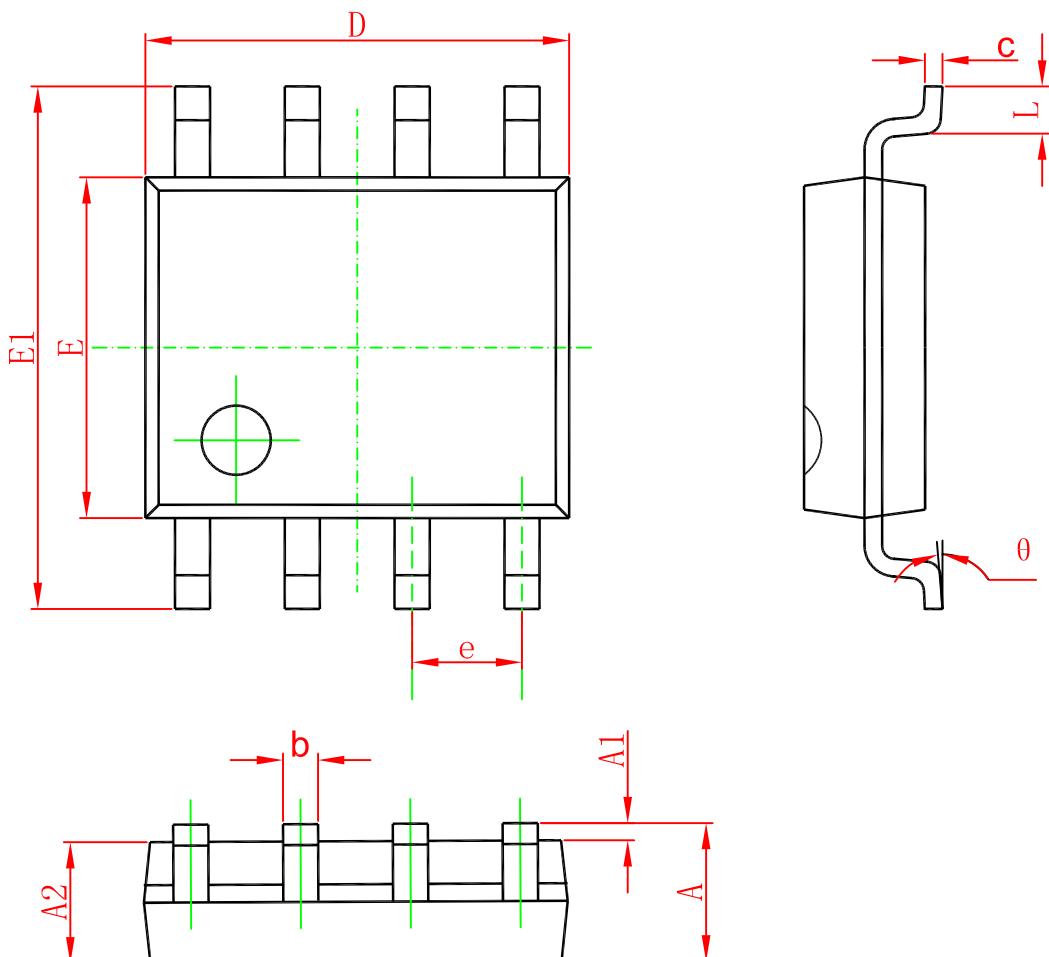
Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	1.350	1.750	0.053	0.069
A1	0.100	0.250	0.004	0.010
A2	1.350	1.550	0.053	0.061
b	0.330	0.510	0.013	0.020
c	0.170	0.250	0.006	0.010
D	4.700	5.100	0.185	0.200
E	3.800	4.000	0.150	0.157
E1	5.800	6.200	0.228	0.244
e	1.270(BSC)		0.050(BSC)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

Ordering information

Order code	Package	Baseqty	Deliverymode
UMW LM2675M-3.3	SOP-8	2500	Tape and reel
UMW LM2675M-5.0	SOP-8	2500	Tape and reel
UMW LM2675M-12	SOP-8	2500	Tape and reel
UMW LM2675M-ADJ	SOP-8	2500	Tape and reel

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