WL2855E

Http://www.sh-willsemi.com

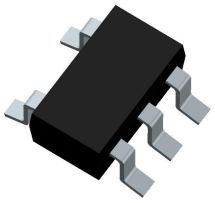
Low noise, Low Power Consumption, 12V Input, 300mA, CMOS LDO

Descriptions

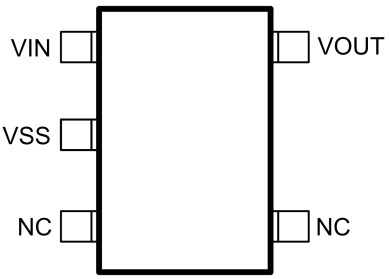
The WL2855E series is a high accuracy, low noise, 12V Input, 300mA, CMOS Linear regulator with high ripple rejection. The devices offer a new level of cost effective performance in cellular phones, laptop and notebook computers, and other portable devices.

The WL2855E has the fold-back maximum output current which depends on the output voltage. So the current limit functions both as a short circuit protection and as an output current limiter.

The WL2855E regulators are available in standard SOT-23-5L Package. Standard products are Pb-free and Halogen-free.



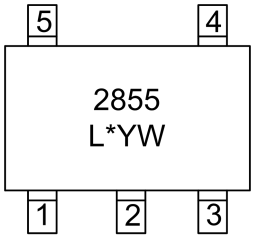
SOT-23-5L



Pin Configuration (Top View)

Features

- Input Voltage Range : 2.5V~12V
- Output Voltage Range :1.2V~5V
- Output Current :300mA
- Fixed Voltage Accuracy :±1%(Vo≥2.5V)
- Quiescent current :1.1uA
- Dropout voltage : 480mV @Vo=3.3V
- Recommend capacitor : ≥0.1uF
- Short-Circuit Protection



2855: Device code
L*: Special code
Y : Year Code
W: Week Code

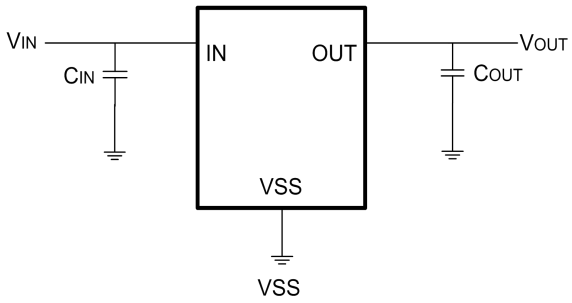
Applications

- Mobile Phone
- Cellphones, radiophone, digital cameras
- Bluetooth, wireless handsets
- Others portable electronics device

Order Information

For detail order information, please see page 12.

Typical Application



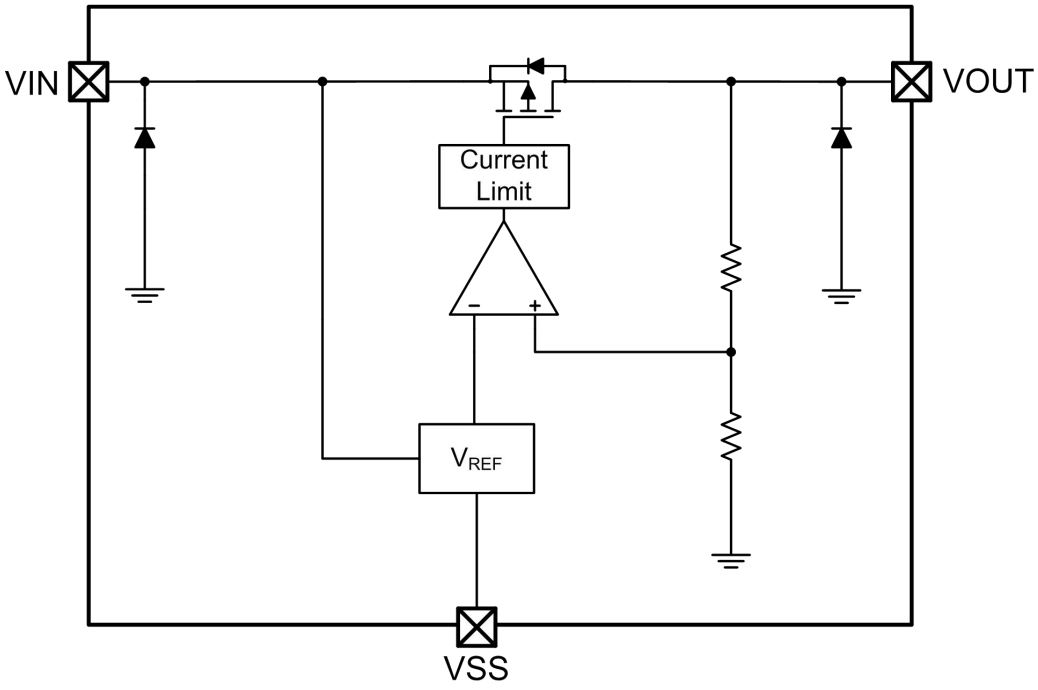
Recommend capacitor :≥0.1uF

Pin Description

SOT-23-5L

PIN	Symbol	Description
1	V_{IN}	Input
2	VSS	Ground
3	NC	No Connection
4	NC	No Connection
5	V_{OUT}	Output

Block Diagram



Absolute Maximum Ratings

Parameter		Value	Unit
Power Dissipation, P_D@T_A=25°C		400	mW
V_{IN} Range		-0.3~13	V
V_{OUT} Range		-0.3~5.5	V
I_{OUT}		300	mA
Lead Temperature Range		260	°C
Storage Temperature Range		-55~150	°C
Operating Junction Temperature Range		150	°C
ESD Ratings	HBM	4000	V
	MM	200	V

Recommend Operating Ratings

Parameter	Value	Unit
Operating Supply voltage	2.5~12	V
Operating Temperature Range	-40~85	°C
Thermal Resistance, $R_{\theta JA}$ (SOT-23-5L)	250	°C/W

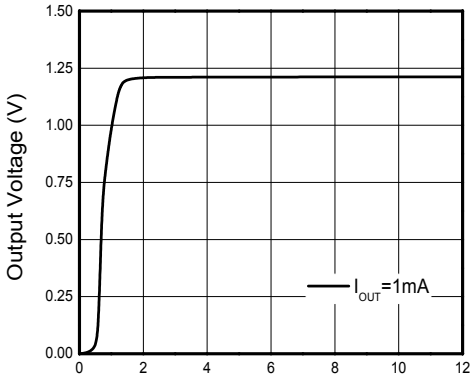
Electronics Characteristics

(Ta=25°C, V_{IN}=V_{OUT}+1V, C_{IN}=C_{OUT}=1μF, I_{OUT}=1mA，unless otherwise noted)

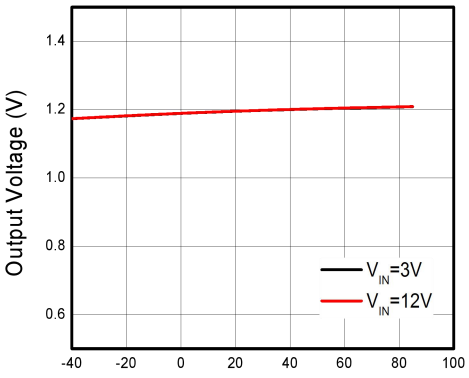
Parameter	Symbol	Condition		Min.	Typ.	Max.	Unit
Output Voltage	V_{OUT}	V_{OUT}≤2.5V		-25	V_{OUT}	+25	mV
		V_{OUT}>2.5V		0.99* Vout	V_{OUT}	1.01* Vout	V
Input Voltage	V_{IN}			2.5		12	V
Current Limit	I_{LIM}	V_{IN}≥3V		300			mA
Dropout Voltage	V_{DROP}	V_{OUT}t=3.3V, Io=300mA			500		mV
		V_{OUT}t=4V, Io=300mA			450		mV
Line Regulation	△V_{LINE}	V_{IN}=V_{OUT}+1~12V			1	5	mV
Load Regulation	△V_{Load}	I_{OUT}=1~300mA			25	50	mV
Quiescent Current	I_Q	V_{IN}=4V, I_{OUT}=0			1.1	2.2	μA
Short Current	I_{SHORT}	V_{OUT} short to GND			220		mA
Power Supply Rejection Rate	PSRR	Vo=3.3V, Io=10mA	f=100Hz		70		dB
			f=1kHz		50		dB
			f=10kHz		25		dB
Output Noise Voltage	e_{NO}	Vo=3.3V, Io=30mA			54		μVRMS

Typical characteristics (Ta=25°C, V_{IN}=V_{OUT}+1V, I_{OUT}=1mA, C_{IN}=C_{OUT}=1 μ F, unless otherwise noted)

V_{OUT}=1.2V

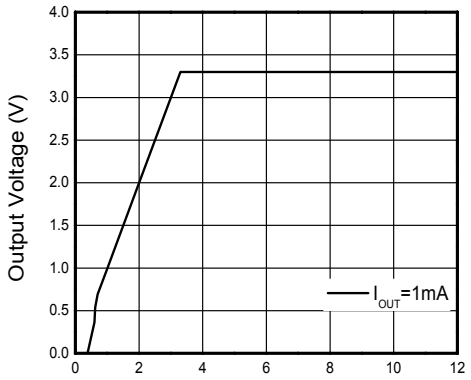


Output Voltage vs. Input Voltage

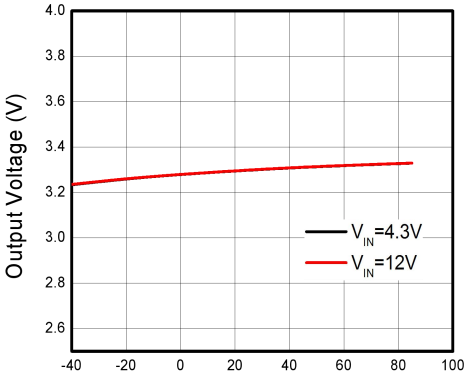


Output Voltage vs. Temperature

V_{OUT}=3.3V

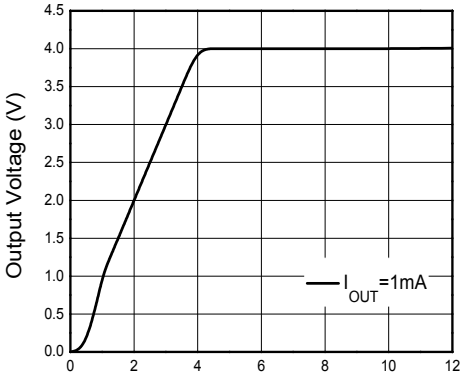


Output Voltage vs. Input Voltage

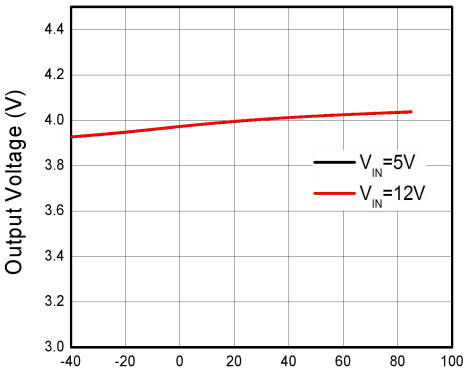


Output Voltage vs. Temperature

Vout=4.0V

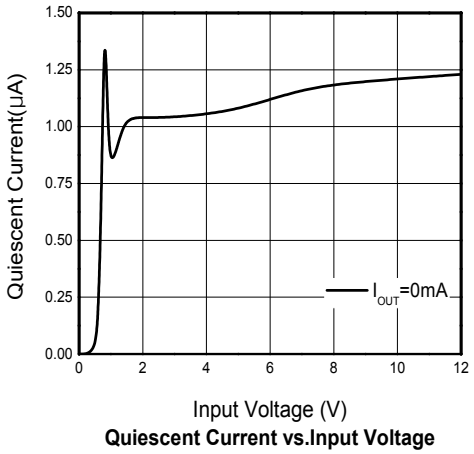


Output Voltage vs.Input Voltage

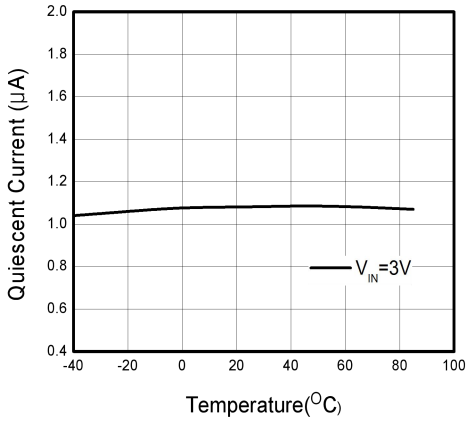


Output Voltage vs.Temperature

V_{OUT}=1.2V

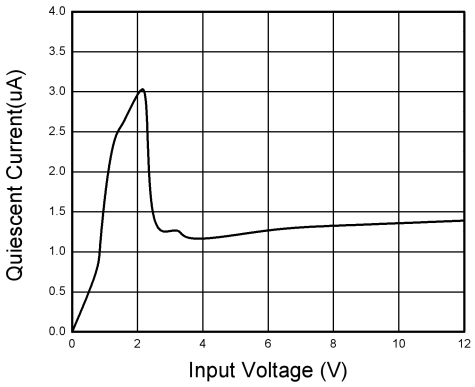


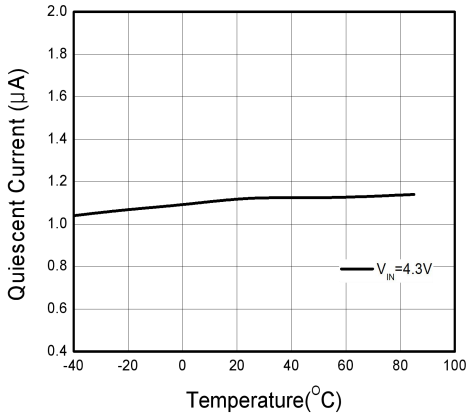
Quiescent Current vs.Input Voltage



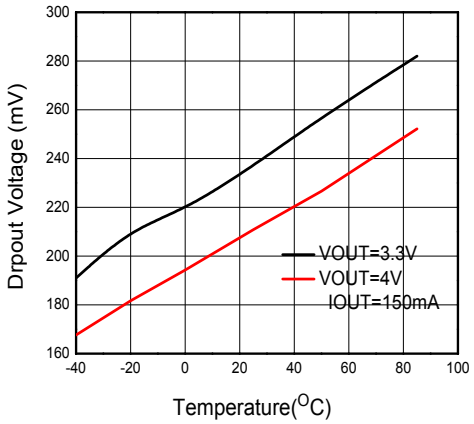
Quiescent Current vs. Temperature

V_{OUT}=3.3V

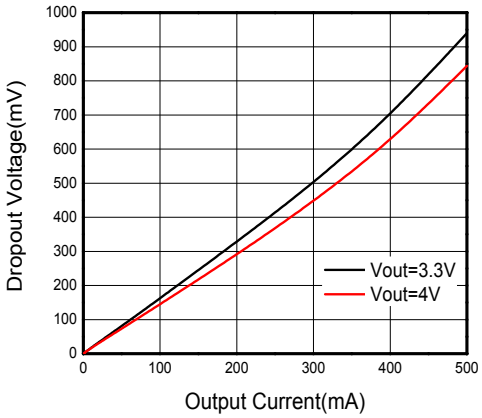




Vdropout

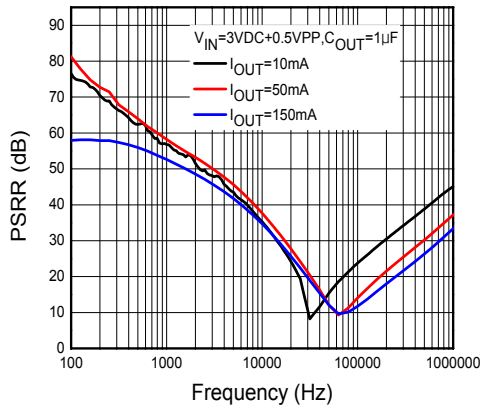


Drpout Voltage vs.Temperature

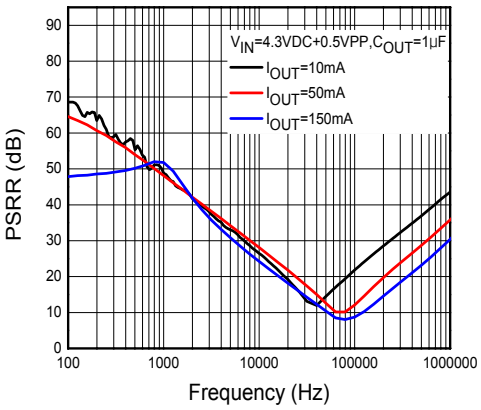


Dropout Voltage vs. Output Current

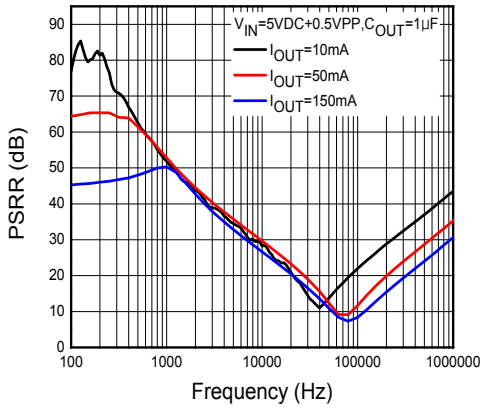
V_{OUT}=1.2V



V_{OUT}=3.3V



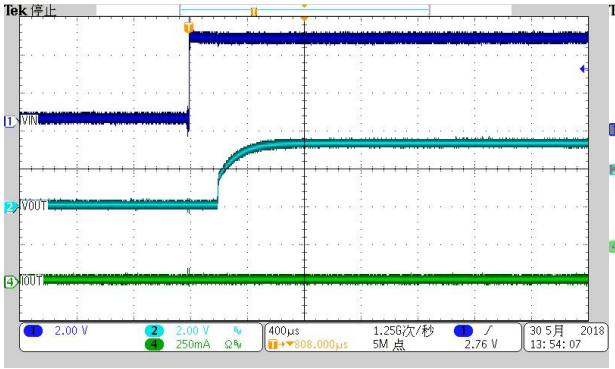
V_{OUT}=4.0V



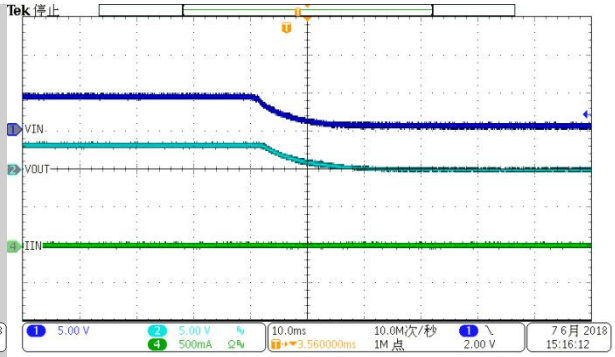
1.Start up & Shunt down

V_{OUT}=3.3V

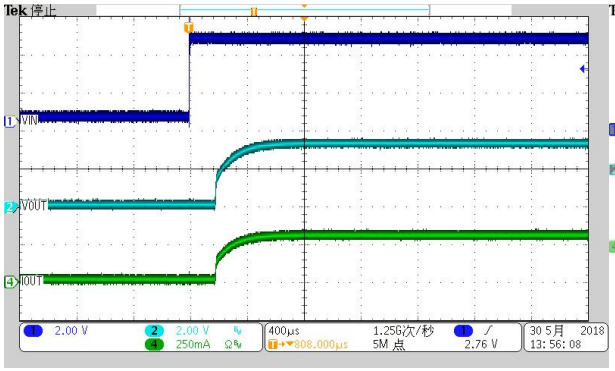
V_{IN}=4.3V,C_{OUT}=1μF,I_{OUT}=1mA

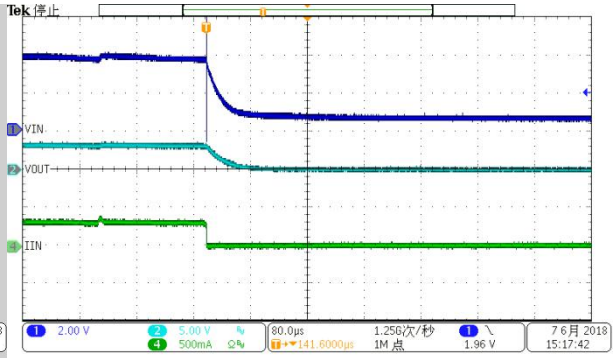


V_{IN}=4.3V,C_{OUT}=1μF,I_{OUT}=300mA



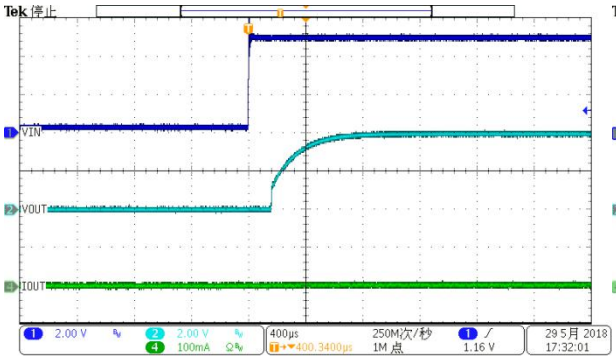
V_{IN}=4.3V,C_{OUT}=1μF,I_{OUT}=300mA

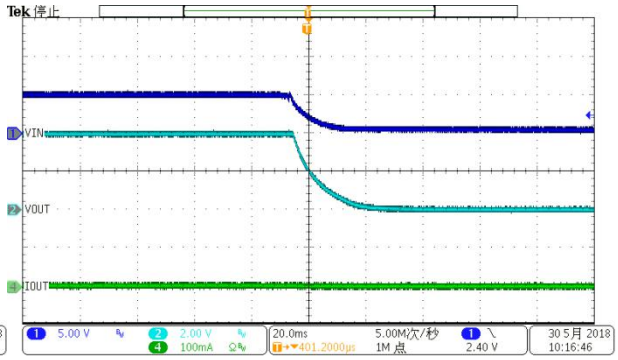




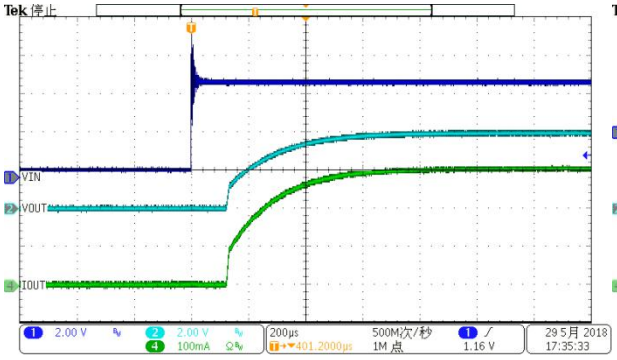
V_{OUT}=4V

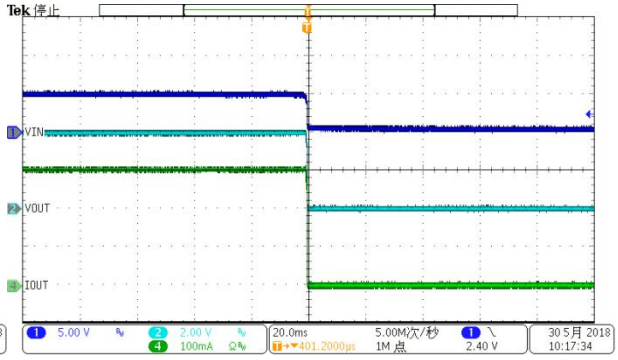
V_{IN}=5V,C_{OUT}=1μF,I_{OUT}=1mA





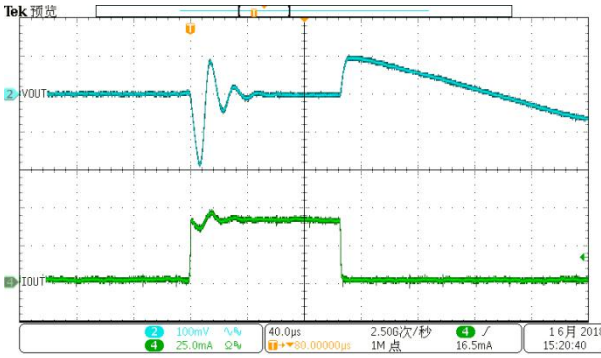
V_{IN}=5V,C_{OUT}=1μF,I_{OUT}=300mA



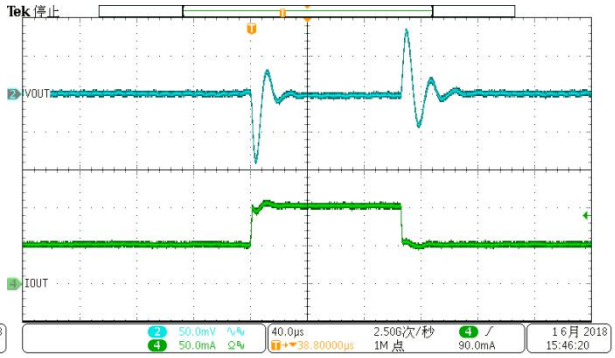


2.Load & Line Transient

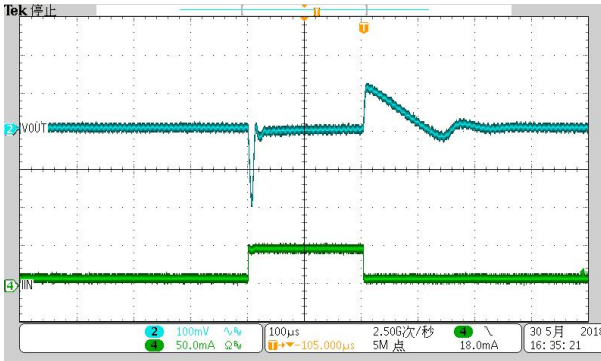
V_{IN}=3V,V_{OUT}=1.2V,C_{OUT}=1μF,I_{OUT}=1mA-40mA



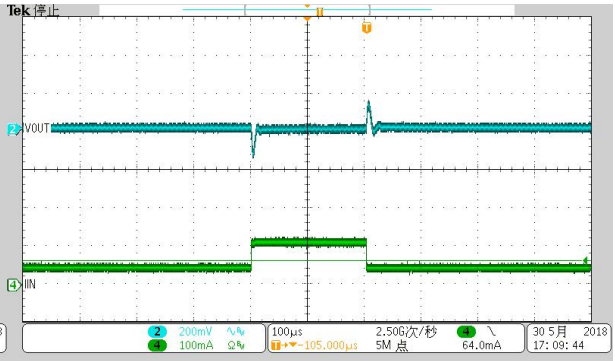
V_{IN}=3V,V_{OUT}=1.2V,C_{OUT}=1μF,I_{OUT}=50mA-100mA



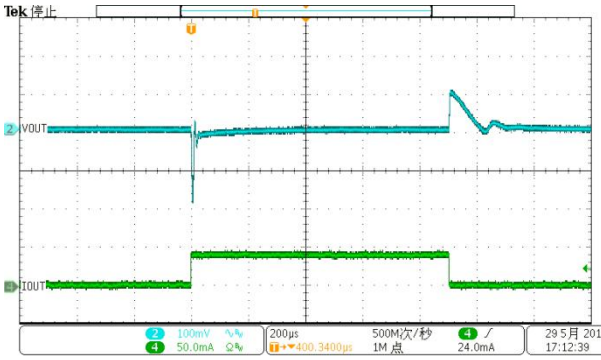
V_{IN}=4.3V,V_{OUT}=3.3V,C_{OUT}=1μF,I_{OUT}=1mA-40mA



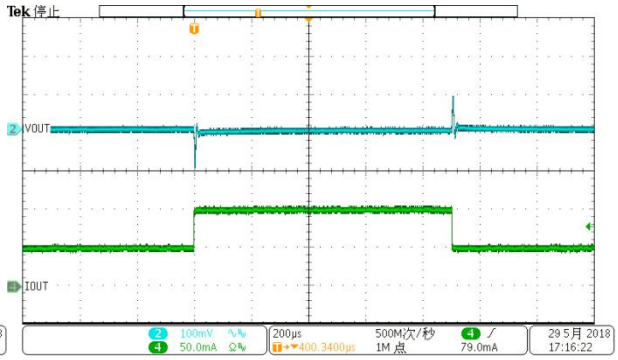
V_{IN}=4.3V,V_{OUT}=3.3V,C_{OUT}=1μF,I_{OUT}=50mA-100mA



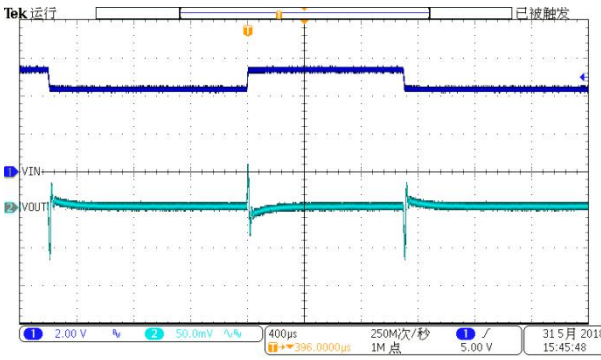
V_{IN}=5V,V_{OUT}=4V,C_{OUT}=1μF,I_{OUT}=1mA-40mA



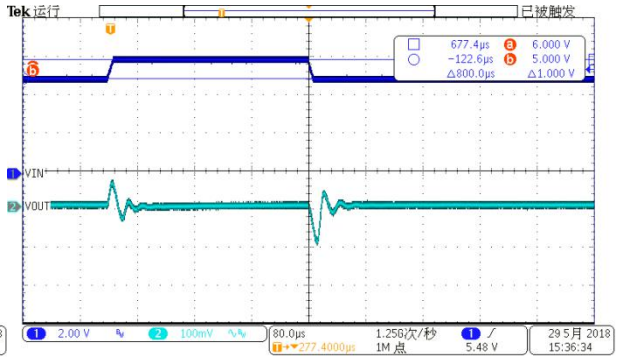
V_{IN}=5V,V_{OUT}=4V,C_{OUT}=1μF,I_{OUT}=50mA-100mA



VIN=4.3-5.3V,V_{OUT}=3.3V,IOUT=10mA

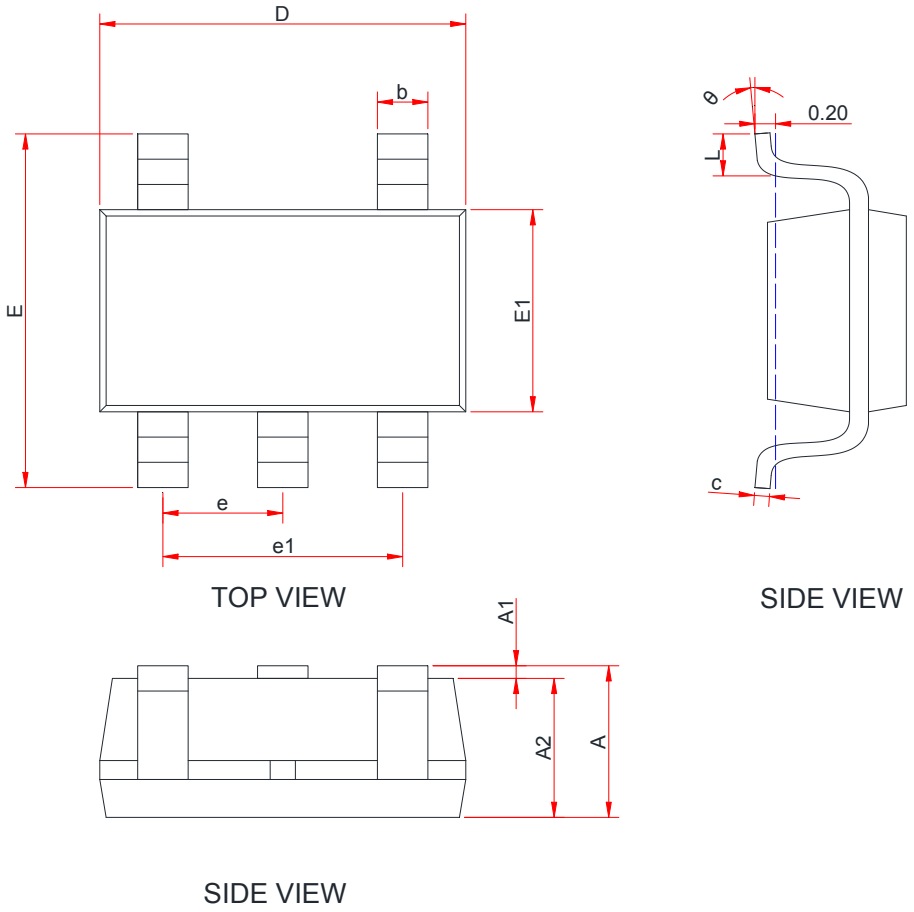


VIN=6-7V,V_{OUT}=4V,IOUT=10mA



PACKAGE OUTLINE DIMENSIONS

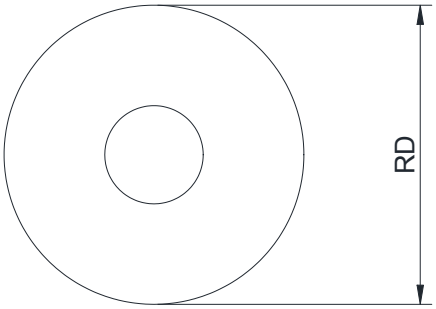
SOT-23-5L



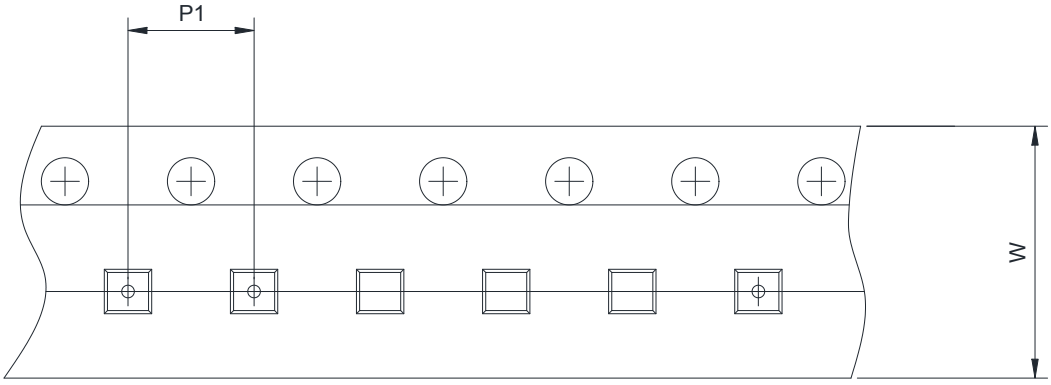
Symbol	Dimensions in Millimeters		
	Min.	Typ.	Max.
A	-	-	1.45
A1	0.00	-	0.15
A2	0.90	1.10	1.30
b	0.30	0.40	0.50
c	0.10	-	0.21
D	2.72	2.92	3.12
E	2.60	2.80	3.00
E1	1.40	1.60	1.80
e	0.95 BSC		
e1	1.95 BSC		
L	0.30	0.45	0.60
θ	8 ° Ref.		

TAPE AND REEL INFORMATION

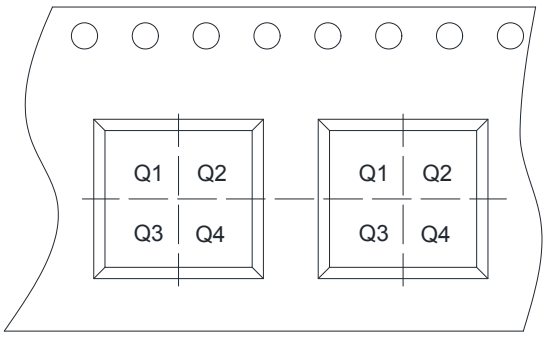
Reel Dimensions



Tape Dimensions



Quadrant Assignments For PIN1 Orientation In Tape



User Direction of Feed

RD	Reel Dimension	☑ 7inch	☐ 13inch		
W	Overall width of the carrier tape	☑ 8mm	☐ 12mm	☐ 16mm	
P1	Pitch between successive cavity centers	☐ 2mm	☑ 4mm	☐ 8mm	
Pin1	Pin1 Quadrant	☐ Q1	☐ Q2	☑ Q3	☐ Q4

ORDER INFORMATION

Ordering No.	Vout (V)	Package	Operating Temperature	Marking	Shipping
WL2855E12-5/TR	1.2	SOT-23-5L	-40~85℃	LEYW	Tape and Reel, 3000
WL2855E33-5/TR	3.3	SOT-23-5L	-40~85℃	LNYW	Tape and Reel, 3000
WL2855E40-5/TR	4.0	SOT-23-5L	-40~85℃	LRYW	Tape and Reel, 3000