

WL2855E

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

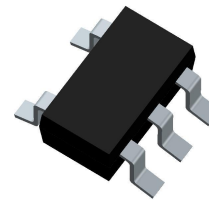
[Http://www.sh-willsemi.com](http://www.sh-willsemi.com)

Descriptions

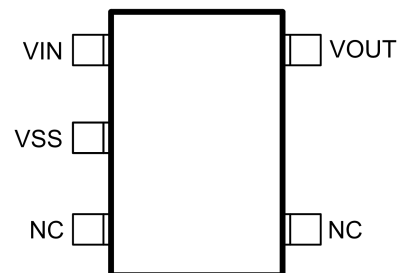
The WL2855E series is a high accuracy, low noise, 12V Input, 300mA, CMOS Linear regulator with high ripple rejection. The devices offer a new level of cost effective performance in cellular phones, laptop and notebook computers, and other portable devices.

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



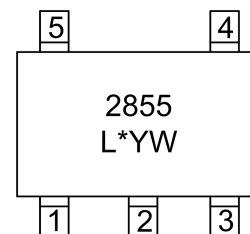
Pin Configuration (Top View)

Features

- Input Voltage Range : 2.5V~12V
- Output Voltage Range : 1.2V~5V
- Output Current : 300mA
- Fixed Voltage Accuracy : $\pm 1\%$ ($V_o \geq 2.5V$)
- Quiescent current : 1.1uA
- Dropout voltage : 480mV @ $V_o = 3.3V$
- Recommend capacitor : $\geq 0.1\mu F$
- Short-Circuit Protection

Applications

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

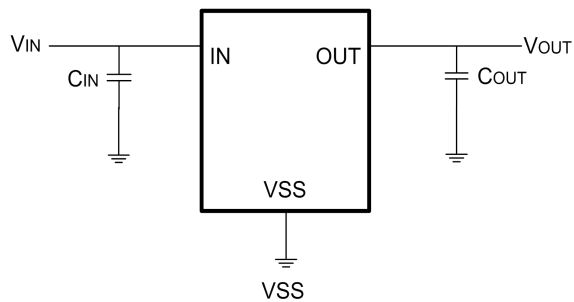


2855: Device code
L*: Special code
Y : Year Code
W: Week Code

Order Information

For detail order information, please see page 12.

Typical Application



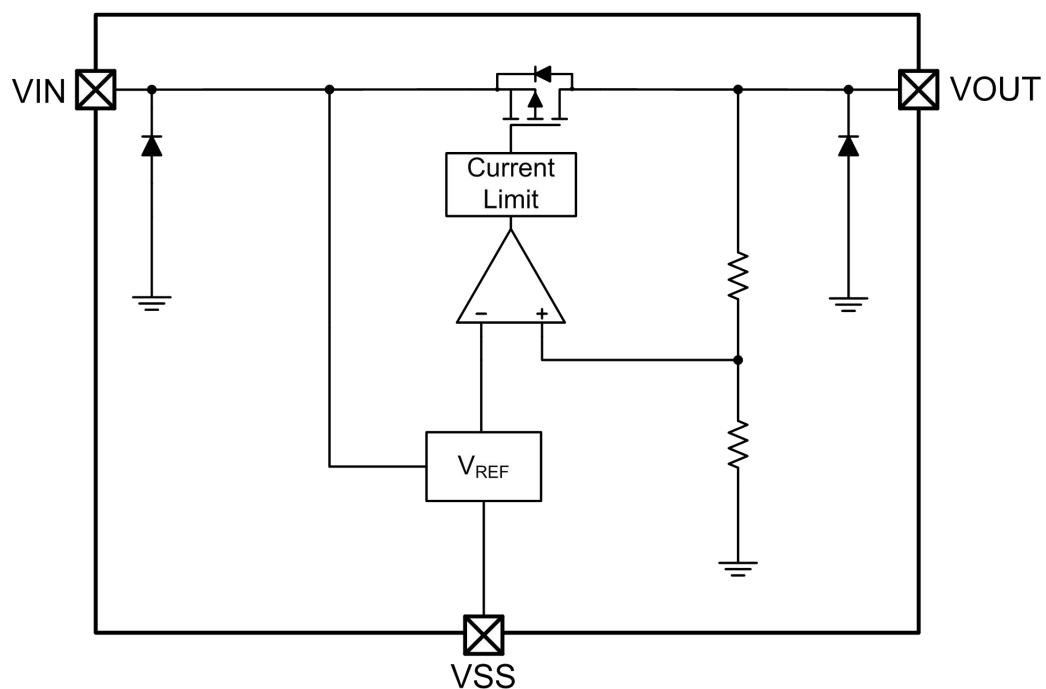
Pin Description

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

Recommend capacitor : $\geq 0.1\mu F$

Block Diagram



Absolute Maximum Ratings

Parameter		Value	Unit
Power Dissipation, $P_D@T_A=25^{\circ}\text{C}$		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	$^{\circ}\text{C}$
Storage Temperature Range		-55~150	$^{\circ}\text{C}$
Operating Junction Temperature Range		150	$^{\circ}\text{C}$
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	$^{\circ}\text{C}$
Thermal Resistance, $R_{\theta JA}$ (SOT-23-5L)	250	$^{\circ}\text{C/W}$

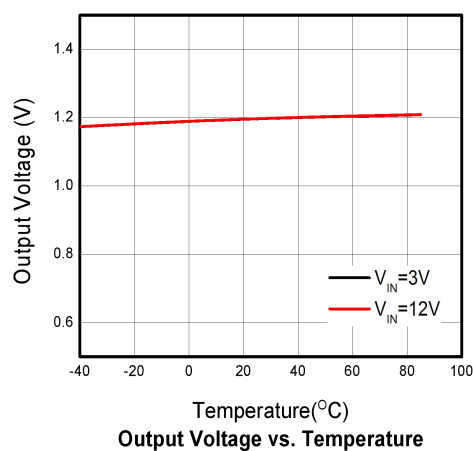
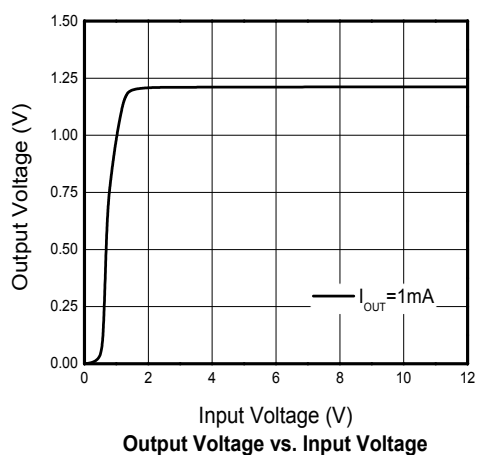
Electronics Characteristics

($T_a=25^{\circ}\text{C}$, $V_{\text{IN}}=V_{\text{OUT}}+1\text{V}$, $C_{\text{IN}}=C_{\text{OUT}}=1\mu\text{F}$, $I_{\text{OUT}}=1\text{mA}$, unless otherwise noted)

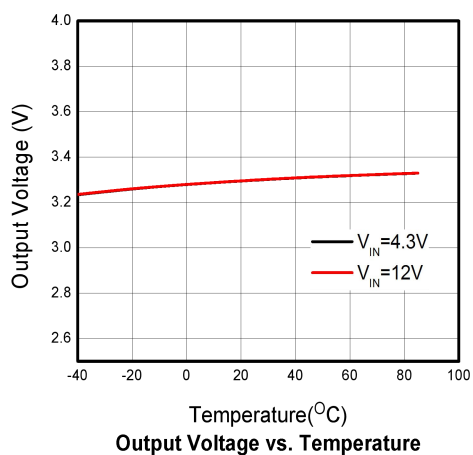
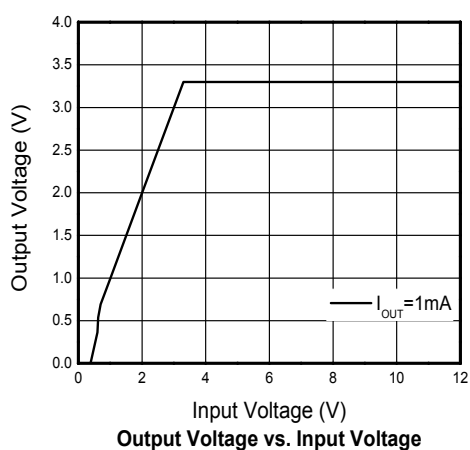
Parameter	Symbol	Condition		Min.	Typ.	Max.	Unit
Output Voltage	V_{OUT}	$V_{\text{OUT}} \leq 2.5\text{V}$		-25	V_{OUT}	+25	mV
		$V_{\text{OUT}} > 2.5\text{V}$		0.99* V_{out}	V_{OUT}	1.01* V_{out}	V
Input Voltage	V_{IN}			2.5		12	V
Current Limit	I_{LIM}	$V_{\text{IN}} \geq 3\text{V}$		300			mA
Dropout Voltage	V_{DROP}	$V_{\text{OUT}}=3.3\text{V}$, $I_o=300\text{mA}$			500		mV
		$V_{\text{OUT}}=4\text{V}$, $I_o=300\text{mA}$			450		mV
Line Regulation	ΔV_{LINE}	$V_{\text{IN}}=V_{\text{OUT}}+1\sim 12\text{V}$			1	5	mV
Load Regulation	ΔV_{Load}	$I_{\text{OUT}}=1\sim 300\text{mA}$			25	50	mV
Quiescent Current	I_{Q}	$V_{\text{IN}}=4\text{V}$, $I_{\text{OUT}}=0$			1.1	2.2	μA
Short Current	I_{SHORT}	V_{OUT} short to GND			220		mA
Power Supply Rejection Rate	PSRR	$V_o=3.3\text{V}$, $I_o=10\text{mA}$	$f=100\text{Hz}$		70		dB
			$f=1\text{kHz}$		50		dB
			$f=10\text{kHz}$		25		dB
Output Noise Voltage	e_{NO}	$V_o=3.3\text{V}$, $I_o=30\text{mA}$			54		μVRMS

Typical characteristics ($T_a=25^{\circ}\text{C}$, $V_{\text{IN}}=V_{\text{OUT}}+1\text{V}$, $I_{\text{OUT}}=1\text{mA}$, $C_{\text{IN}}=C_{\text{OUT}}=1\ \mu\text{F}$, unless otherwise noted)

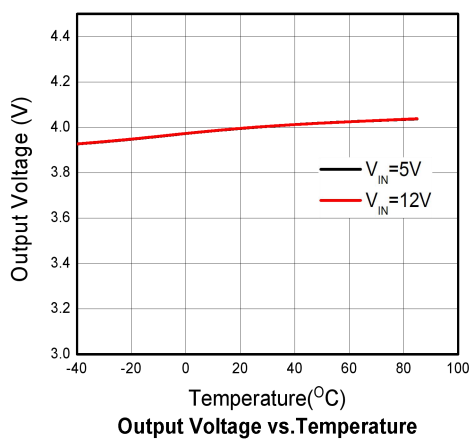
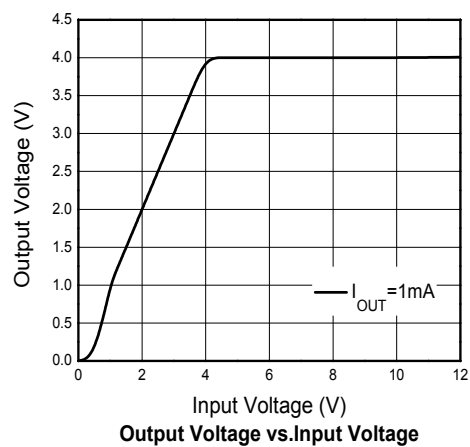
$V_{\text{OUT}}=1.2\text{V}$

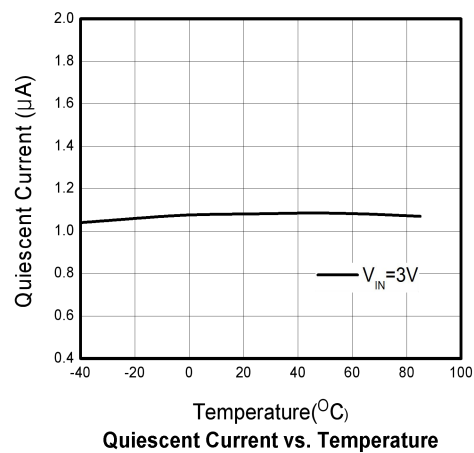
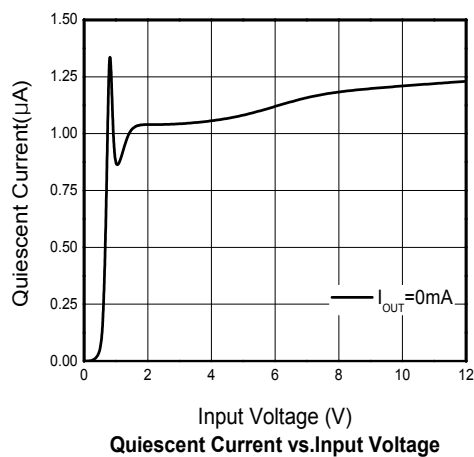
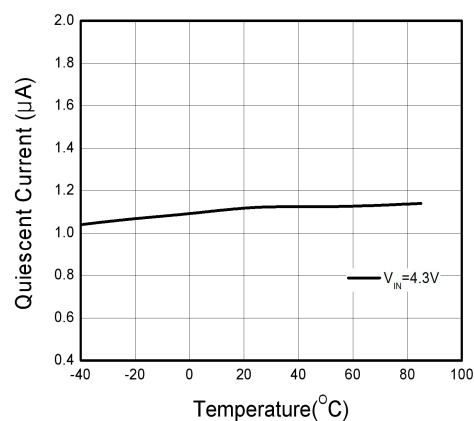
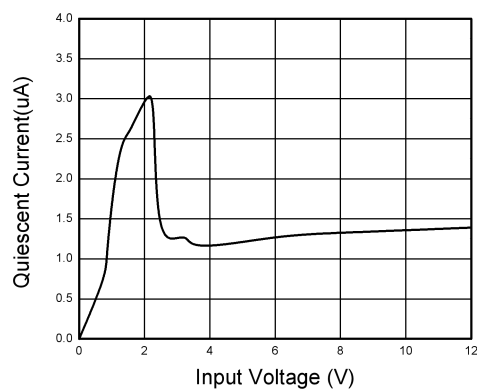
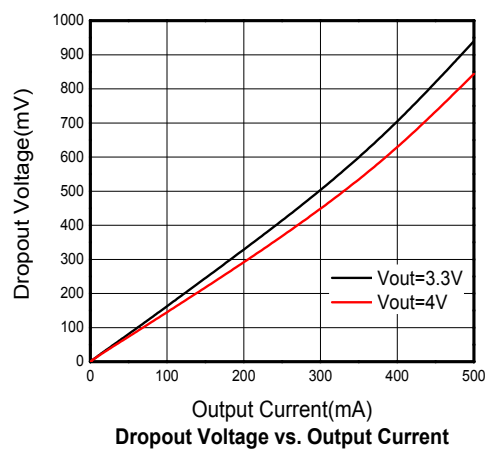
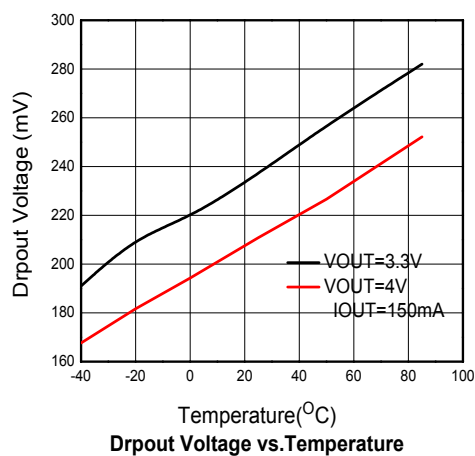


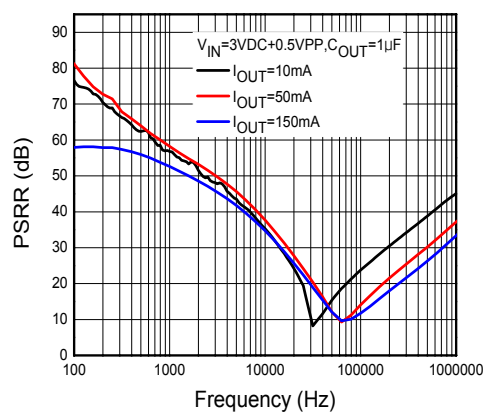
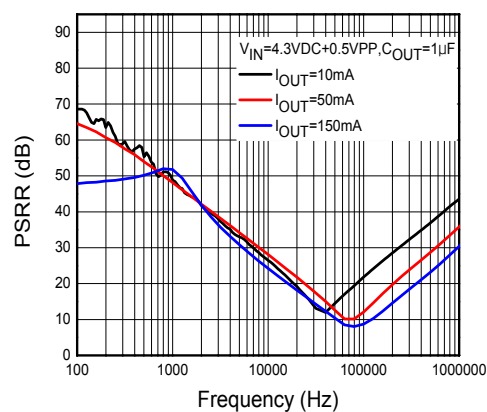
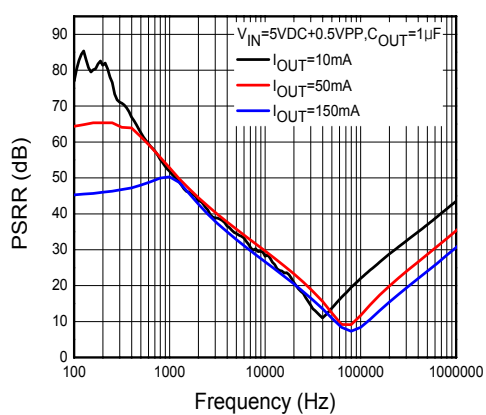
$V_{\text{OUT}}=3.3\text{V}$



$V_{\text{OUT}}=4.0\text{V}$



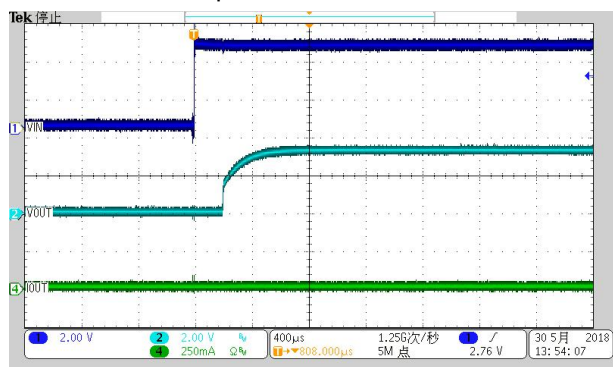
$V_{OUT}=1.2V$

 $V_{OUT}=3.3V$

Vdropout


$V_{OUT}=1.2V$

 $V_{OUT}=3.3V$

 $V_{OUT}=4.0V$


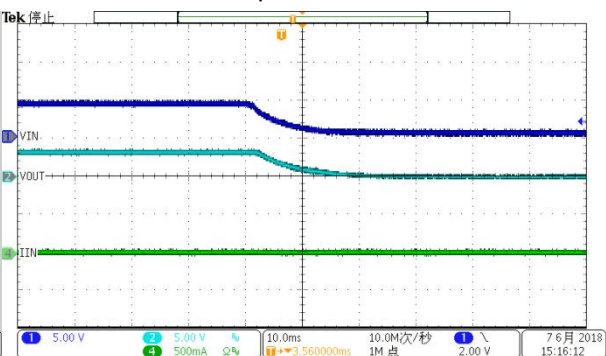
1.Start up & Shunt down

$V_{OUT}=3.3V$

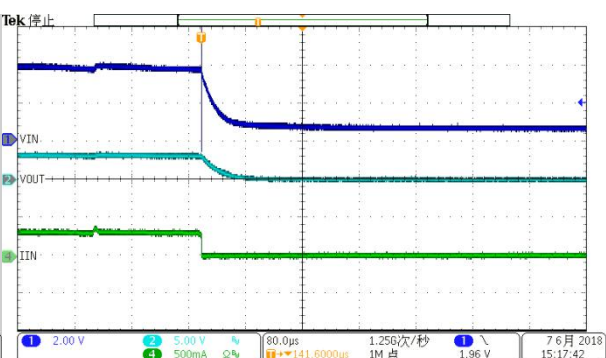
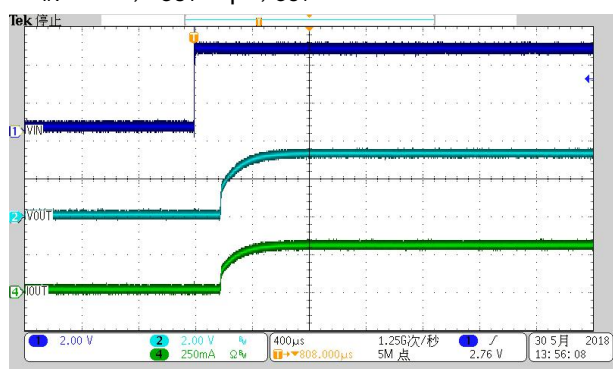
$V_{IN}=4.3V, C_{OUT}=1\mu F, I_{OUT}=1mA$



$V_{IN}=4.3V, C_{OUT}=1\mu F, I_{OUT}=300mA$

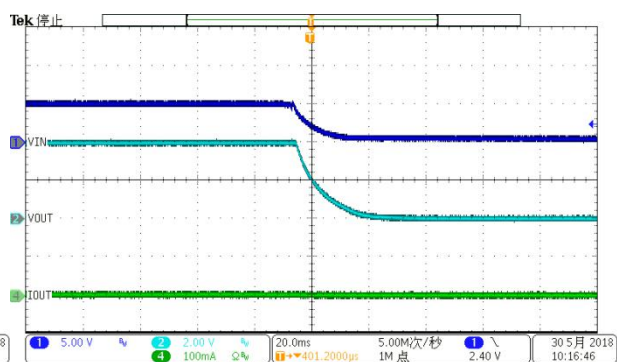
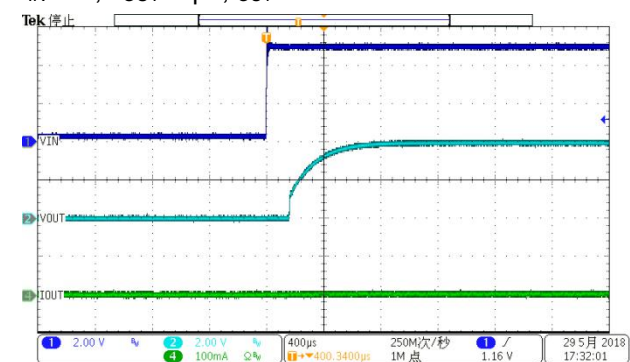


$V_{IN}=4.3V, C_{OUT}=1\mu F, I_{OUT}=300mA$

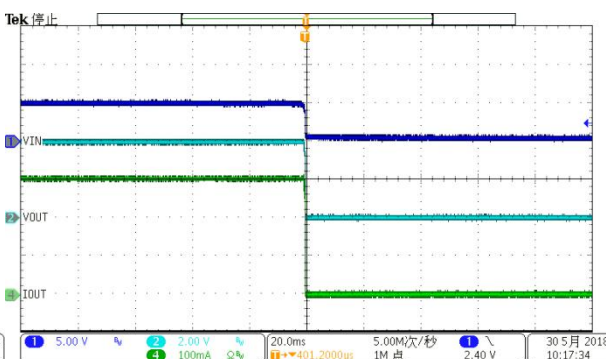
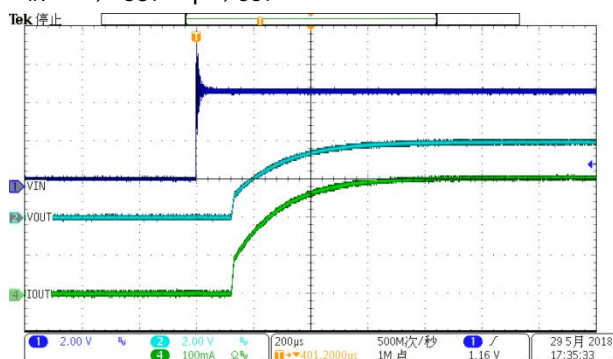


$V_{OUT}=4V$

$V_{IN}=5V, C_{OUT}=1\mu F, I_{OUT}=1mA$

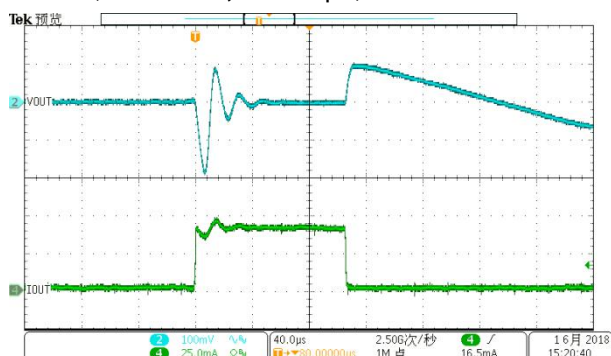


$V_{IN}=5V, C_{OUT}=1\mu F, I_{OUT}=300mA$

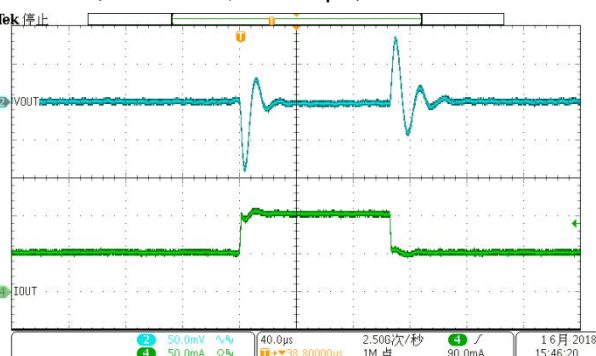


2. Load & Line Transient

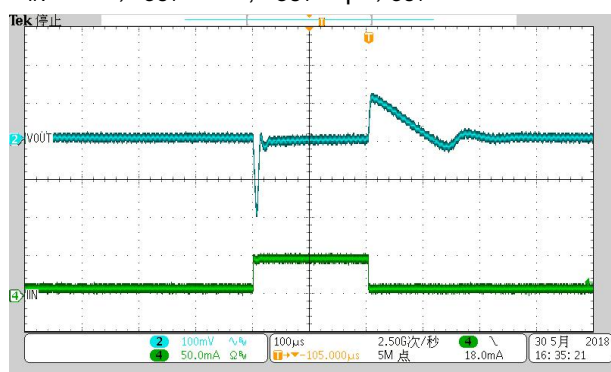
$V_{IN}=3V, V_{OUT}=1.2V, C_{OUT}=1\mu F, I_{OUT}=1mA-40mA$



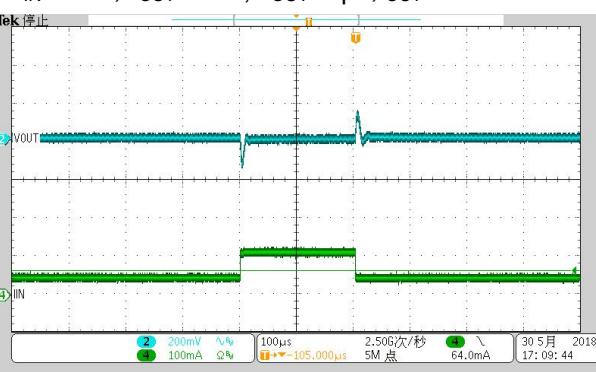
$V_{IN}=3V, V_{OUT}=1.2V, C_{OUT}=1\mu F, I_{OUT}=50mA-100mA$



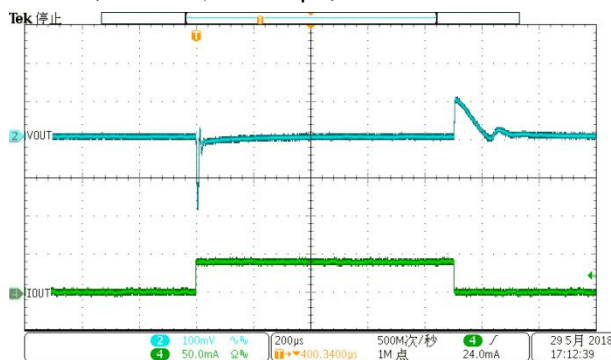
$V_{IN}=4.3V, V_{OUT}=3.3V, C_{OUT}=1\mu F, I_{OUT}=1mA-40mA$



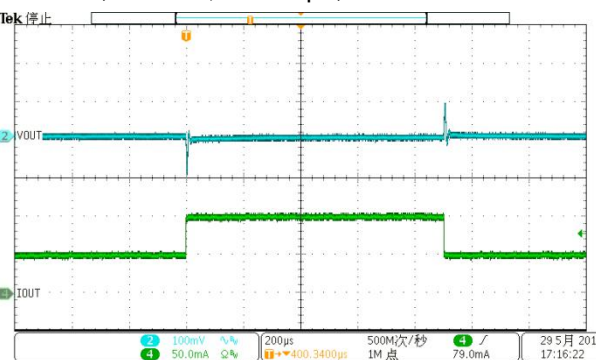
$V_{IN}=4.3V, V_{OUT}=3.3V, C_{OUT}=1\mu F, I_{OUT}=50mA-100mA$



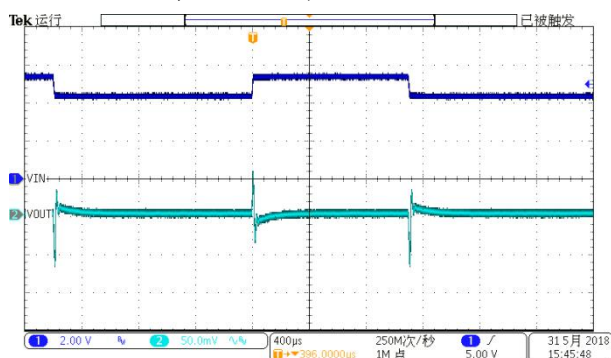
$V_{IN}=5V, V_{OUT}=4V, C_{OUT}=1\mu F, I_{OUT}=1mA-40mA$



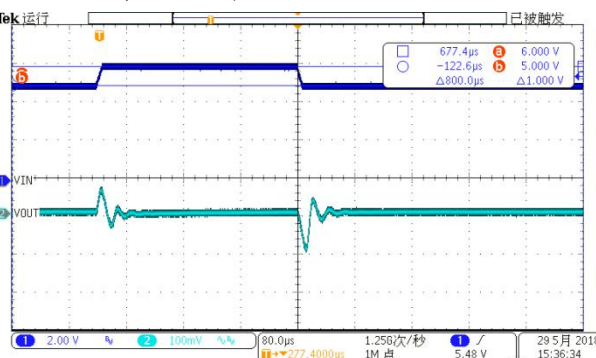
$V_{IN}=5V, V_{OUT}=4V, C_{OUT}=1\mu F, I_{OUT}=50mA-100mA$

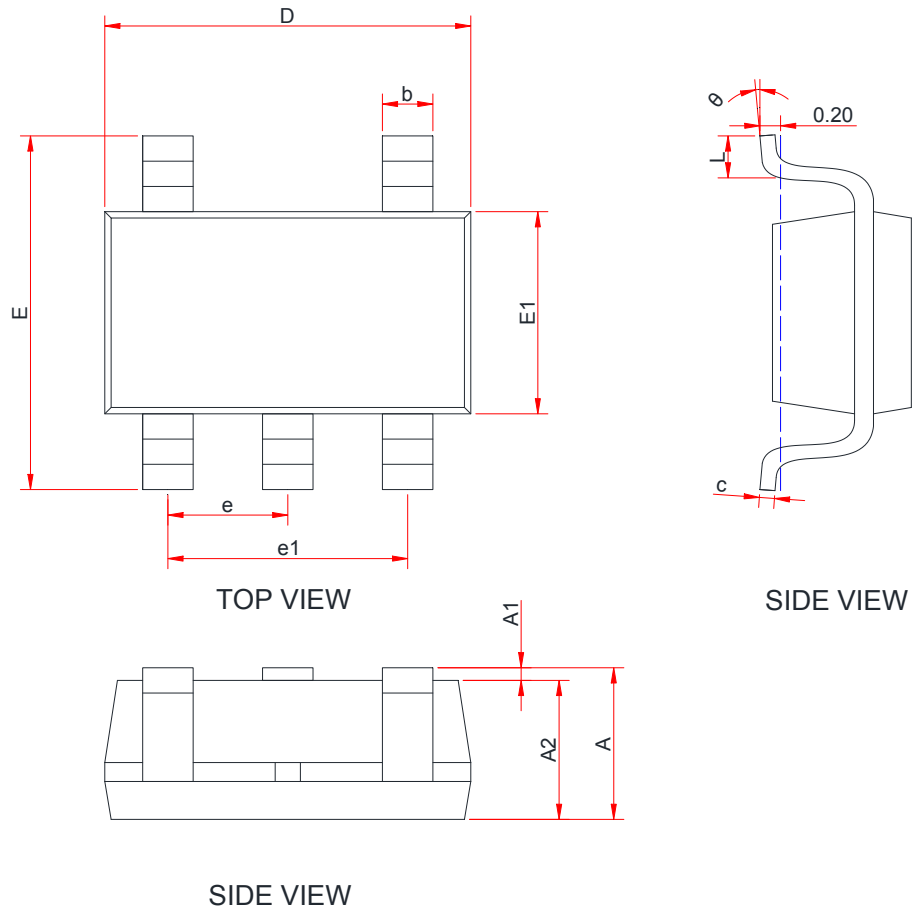


$V_{IN}=4.3-5.3V, V_{OUT}=3.3V, I_{OUT}=10mA$

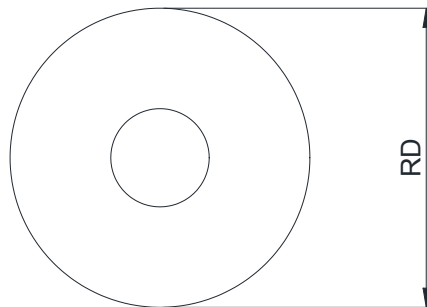
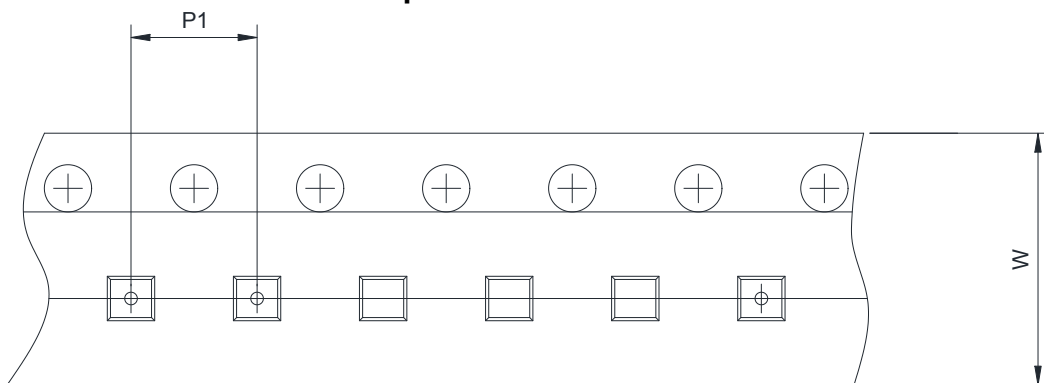
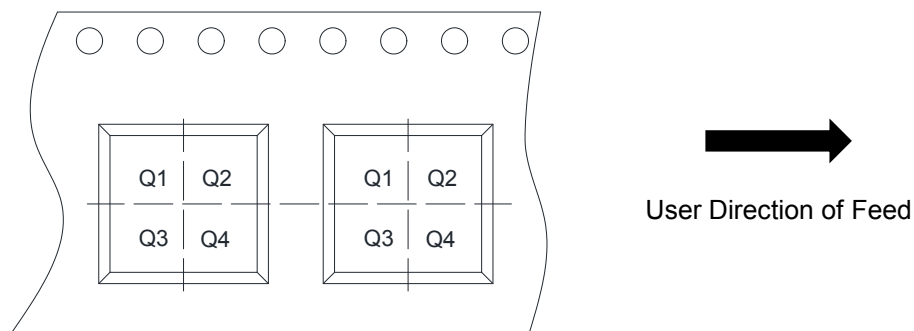


$V_{IN}=6-7V, V_{OUT}=4V, I_{OUT}=10mA$



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


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