

WL2855E

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

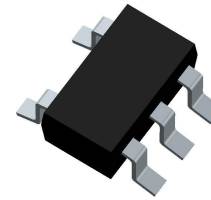
[Http://www.sh-willsemi.com](http://www.sh-willsemi.com)

Descriptions

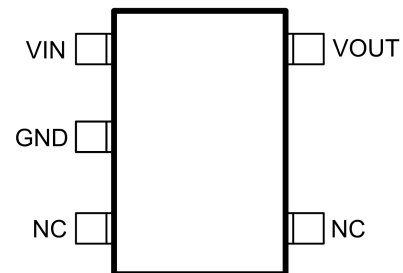
The WL2855E series is a high accuracy, low noise, 12V Input, 300mA, CMOS Linear regulator with high ripple rejection. The devices offer a new level of cost effective performance in cellular phones, laptop and notebook computers, and other portable devices.

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



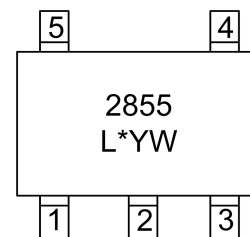
Pin Configuration (Top View)

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

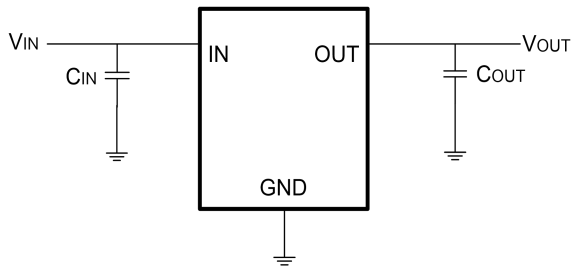
- Mobile Phone
- Cellphones, radiophone, digital cameras
- Bluetooth, wireless handsets
- Others portable electronics device



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

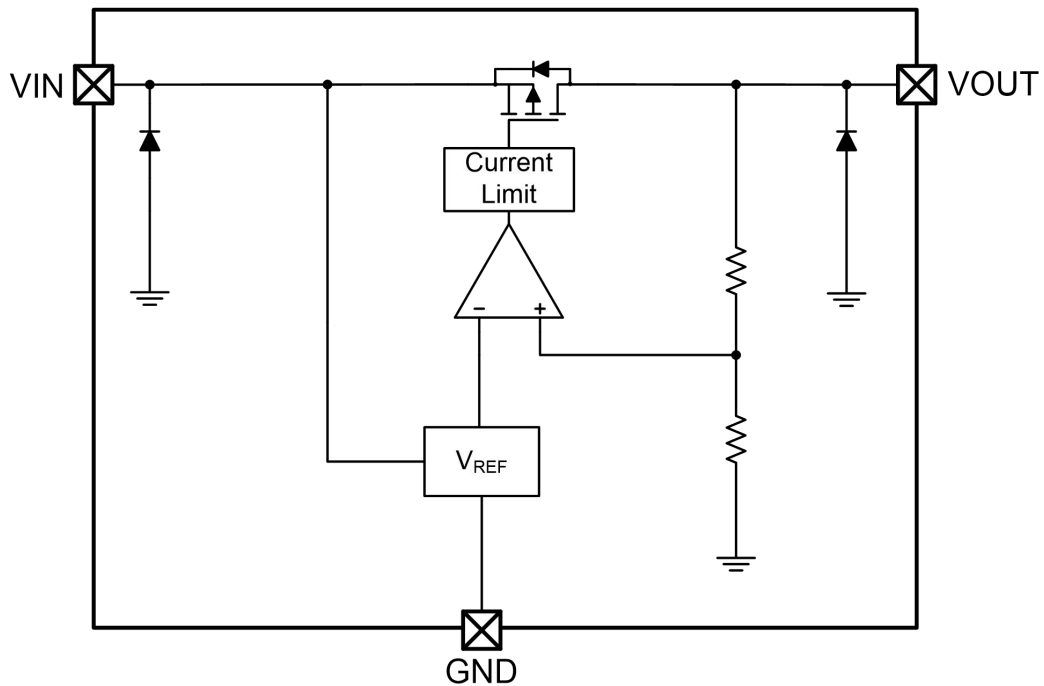
Order Information

For detail order information, please see page 12.

Typical Application
Pin Description

SOT-23-5L

PIN	Symbol	Description
1	V _{IN}	Input
2	GND	Ground
3	NC	No Connection
4	NC	No Connection
5	V _{OUT}	Output

Recommend capacitor : $\geq 0.1\mu\text{F}$

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}	Internally Limited	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

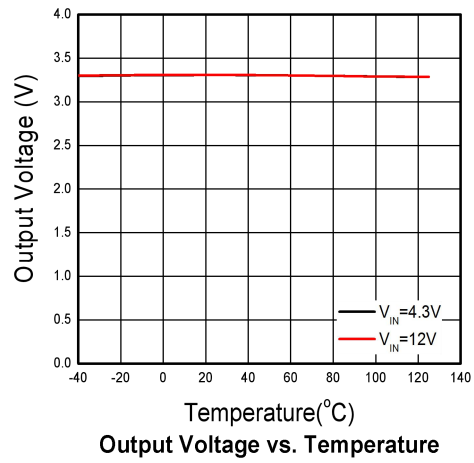
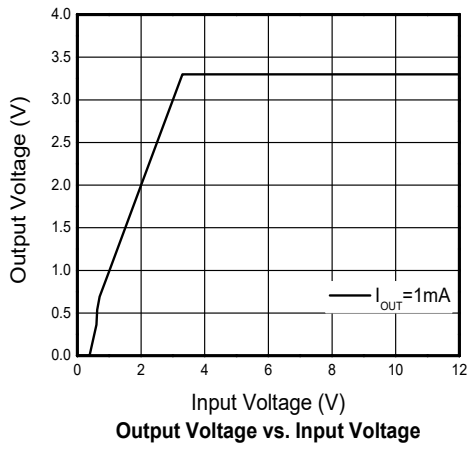
Parameter	Value	Unit
Operating Supply voltage	2.5~12	V
Operating Temperature Range	-40~85	$^\circ\text{C}$
Thermal Resistance, $R_{\theta JA}$ (SOT-23-5L)	250	$^\circ\text{C}/\text{W}$

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

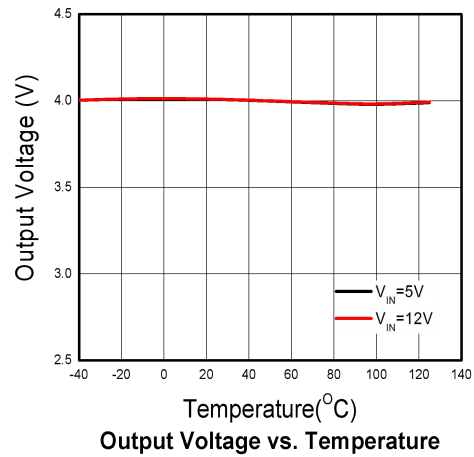
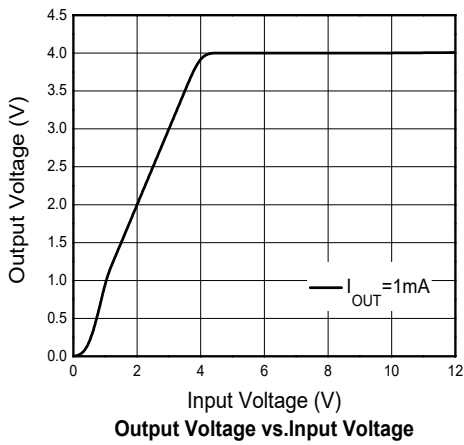
Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit	
Output Voltage	V _{OUT}	V _{OUT} ≤2.5V	-25	V _{OUT}	+25	mV	
		V _{OUT} >2.5V	0.99* V _{out}	V _{OUT}	1.01* V _{out}	V	
Input Voltage	V _{IN}		2.5		12	V	
Current Limit	I _{LIM}	V _{IN} ≥3V	300			mA	
Dropout Voltage	V _{DROP}	V _{OUT} =3.3V, I _{OUT} =300mA		500		mV	
		V _{OUT} =4V, I _{OUT} =300mA		450		mV	
Line Regulation	ΔV _{LINE}	V _{IN} =V _{OUT} +1~12V		1	5	mV	
Load Regulation	ΔV _{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	V _{OUT} =3.3V, I _{OUT} =10mA	f=100Hz		70		dB
			f=1kHz		50		dB
Output Noise Voltage	e _{NO}	V _{OUT} =3.3V, I _{OUT} =30mA		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)

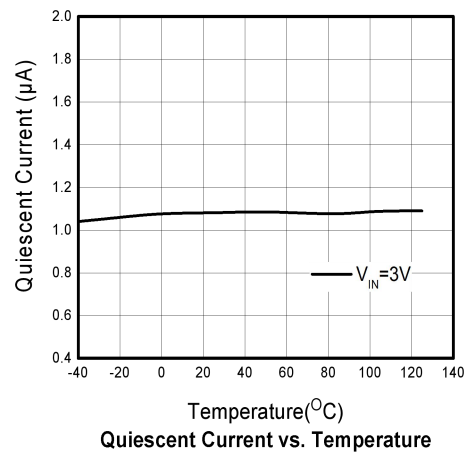
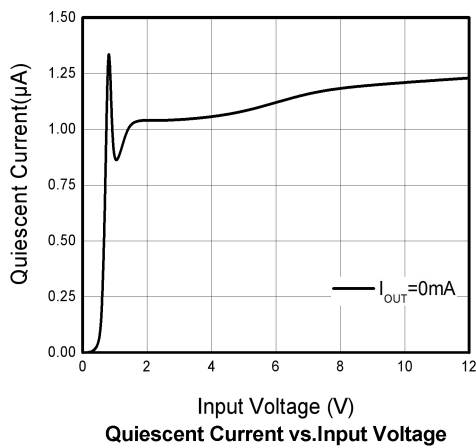
$V_{\text{OUT}}=3.3\text{V}$

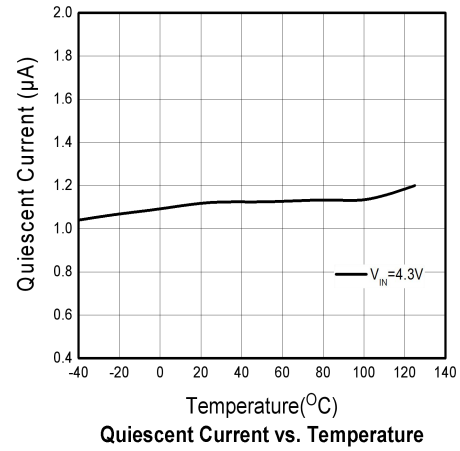
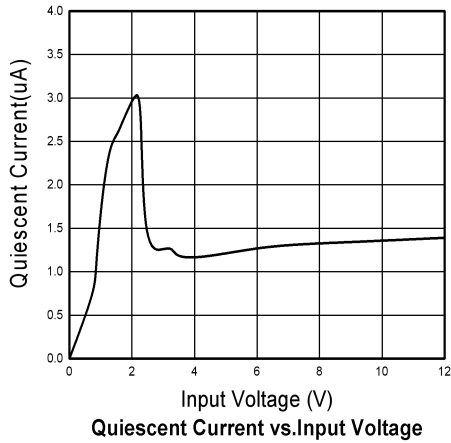
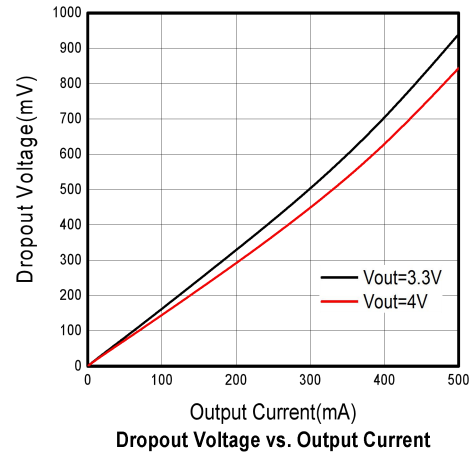
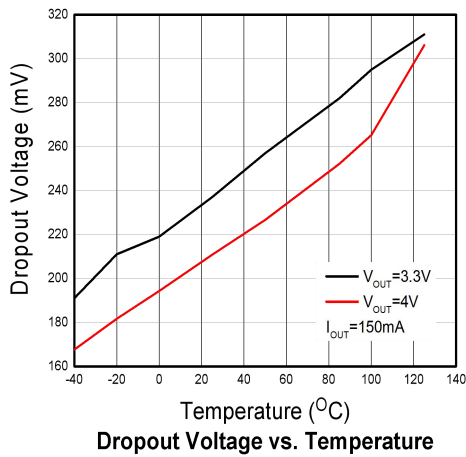
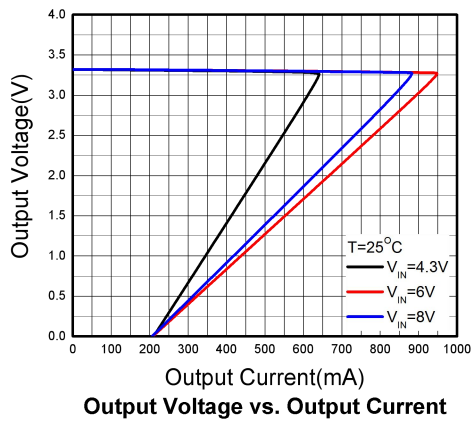
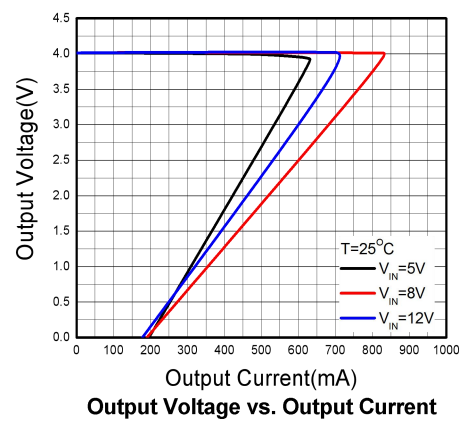


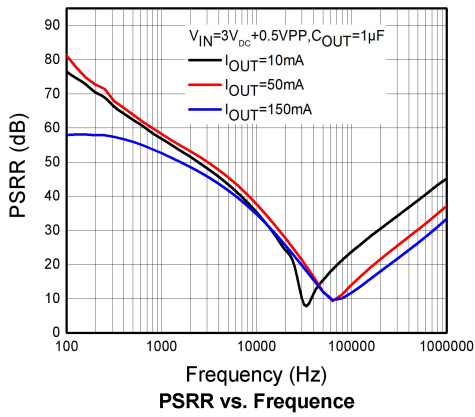
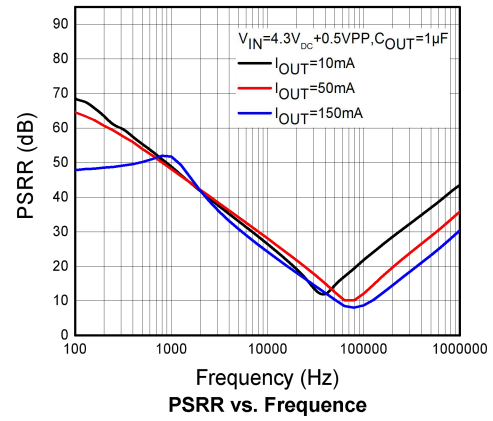
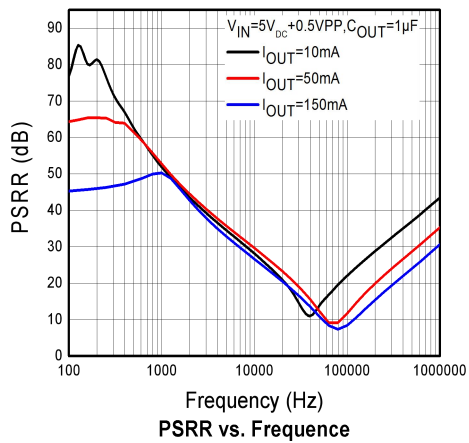
$V_{\text{OUT}}=4.0\text{V}$



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



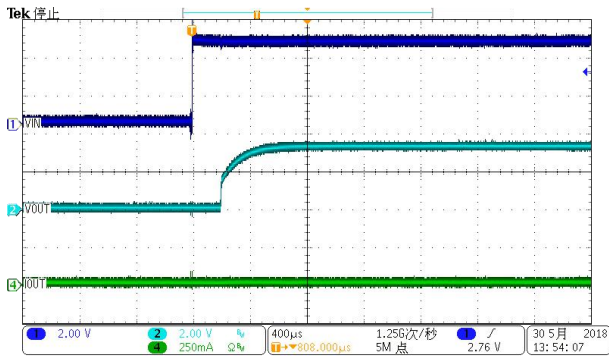
$V_{OUT}=3.3V$

Vdropout

 $V_{OUT}=3.3V$

 $V_{OUT}=4.0V$


$V_{OUT}=1.2V$

 $V_{OUT}=3.3V$

 $V_{OUT}=4.0V$


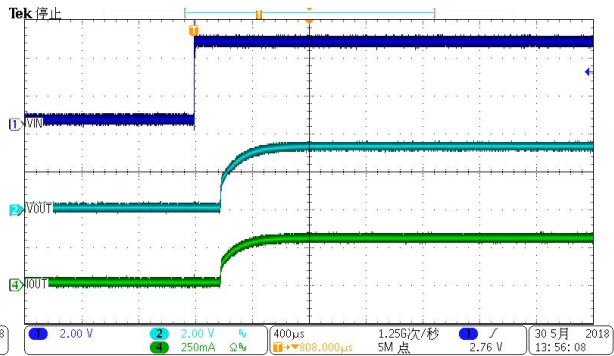
1. Start up & Shut down

$V_{OUT}=3.3V$

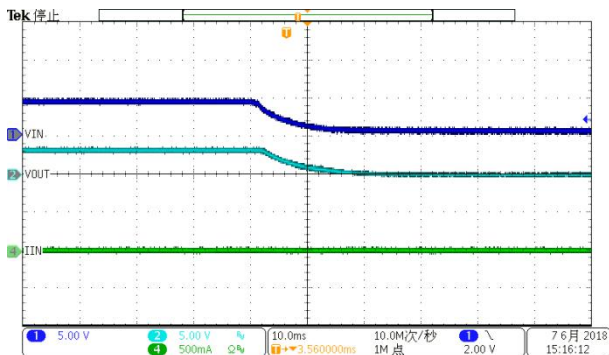
$V_{IN}=4.3V, C_{OUT}=1\mu F, I_{OUT}=1mA$



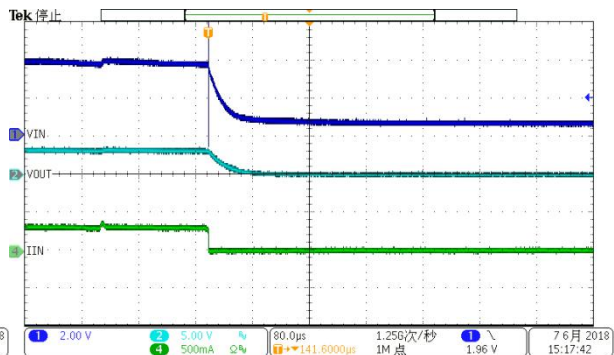
$V_{IN}=4.3V, C_{OUT}=1\mu F, I_{OUT}=300mA$



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

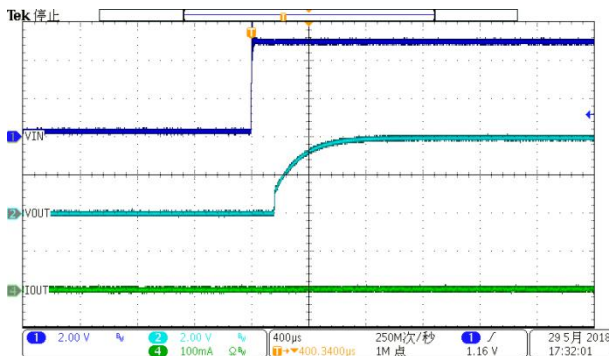


$V_{IN}=4.3V, C_{OUT}=1\mu F, I_{OUT}=300mA$

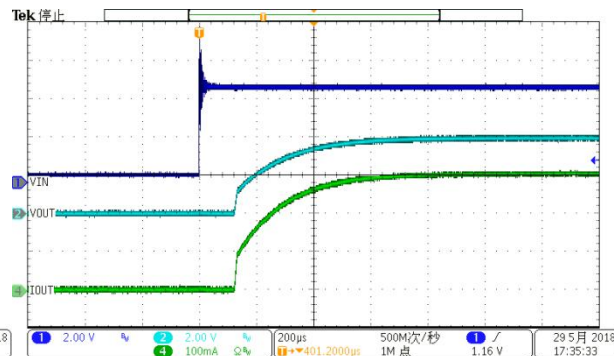


$V_{OUT}=4V$

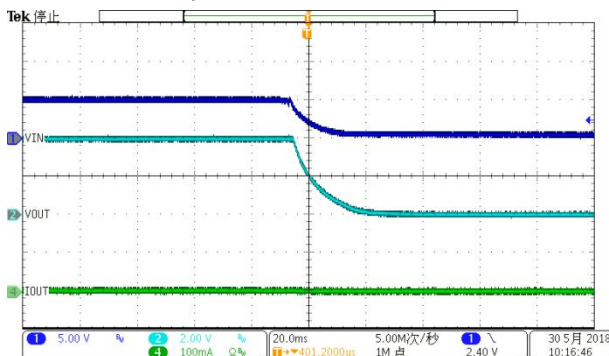
$V_{IN}=5V, C_{OUT}=1\mu F, I_{OUT}=1mA$



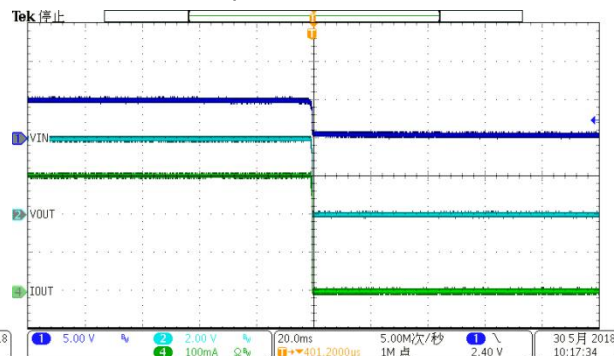
$V_{IN}=5V, C_{OUT}=1\mu F, I_{OUT}=300mA$



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

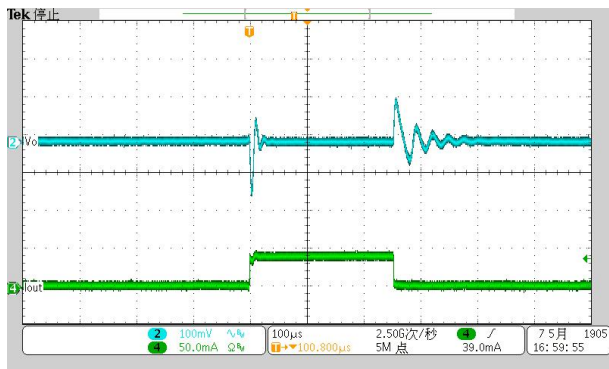


$V_{IN}=5V, C_{OUT}=1\mu F, I_{OUT}=300mA$

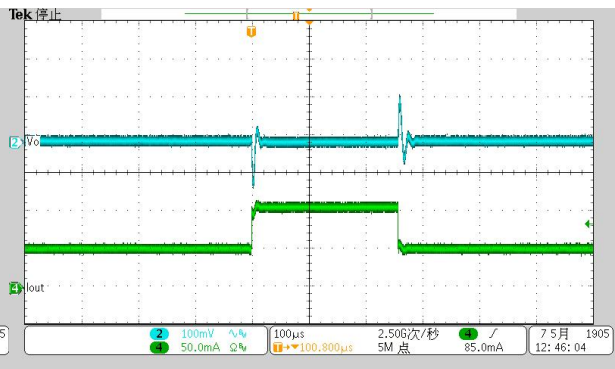


2. Load & Line Transient

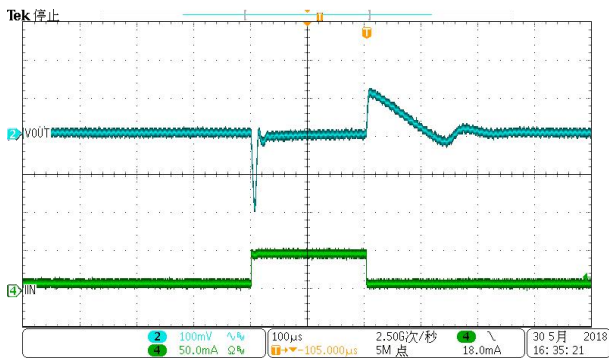
$V_{IN}=3V, V_{OUT}=1.2V, C_{OUT}=1\mu F, I_{OUT}=1mA-40mA$



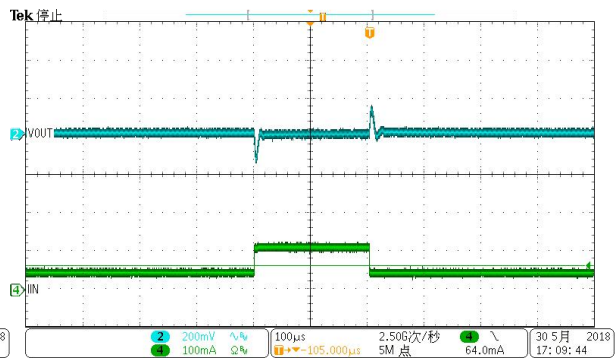
$V_{IN}=3V, V_{OUT}=1.2V, C_{OUT}=1\mu F, I_{OUT}=50mA-100mA$



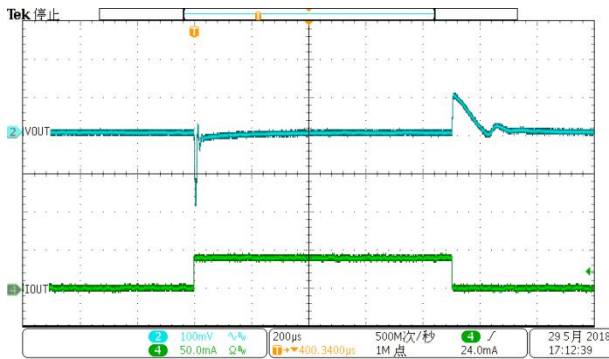
$V_{IN}=4.3V, V_{OUT}=3.3V, C_{OUT}=1\mu F, I_{OUT}=1mA-40mA$



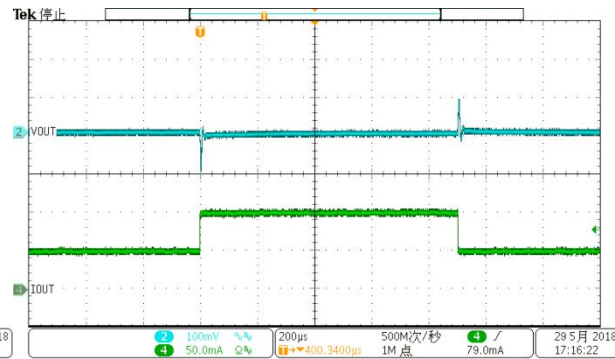
$V_{IN}=4.3V, V_{OUT}=3.3V, C_{OUT}=1\mu F, I_{OUT}=50mA-100mA$



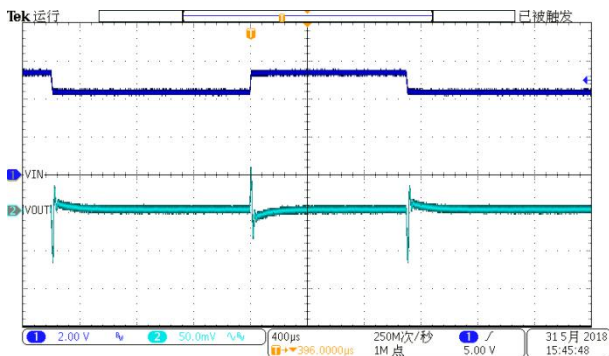
$V_{IN}=5V, V_{OUT}=4V, C_{OUT}=1\mu F, I_{OUT}=1mA-40mA$



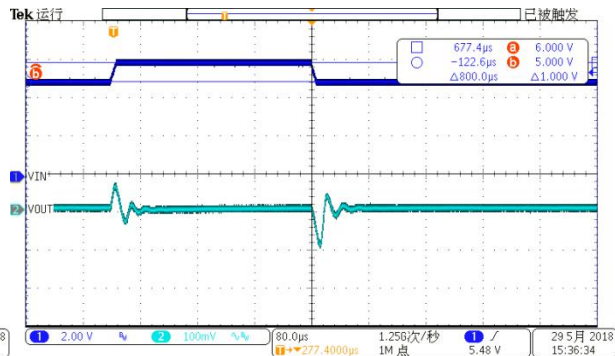
$V_{IN}=5V, V_{OUT}=4V, C_{OUT}=1\mu F, I_{OUT}=50mA-100mA$

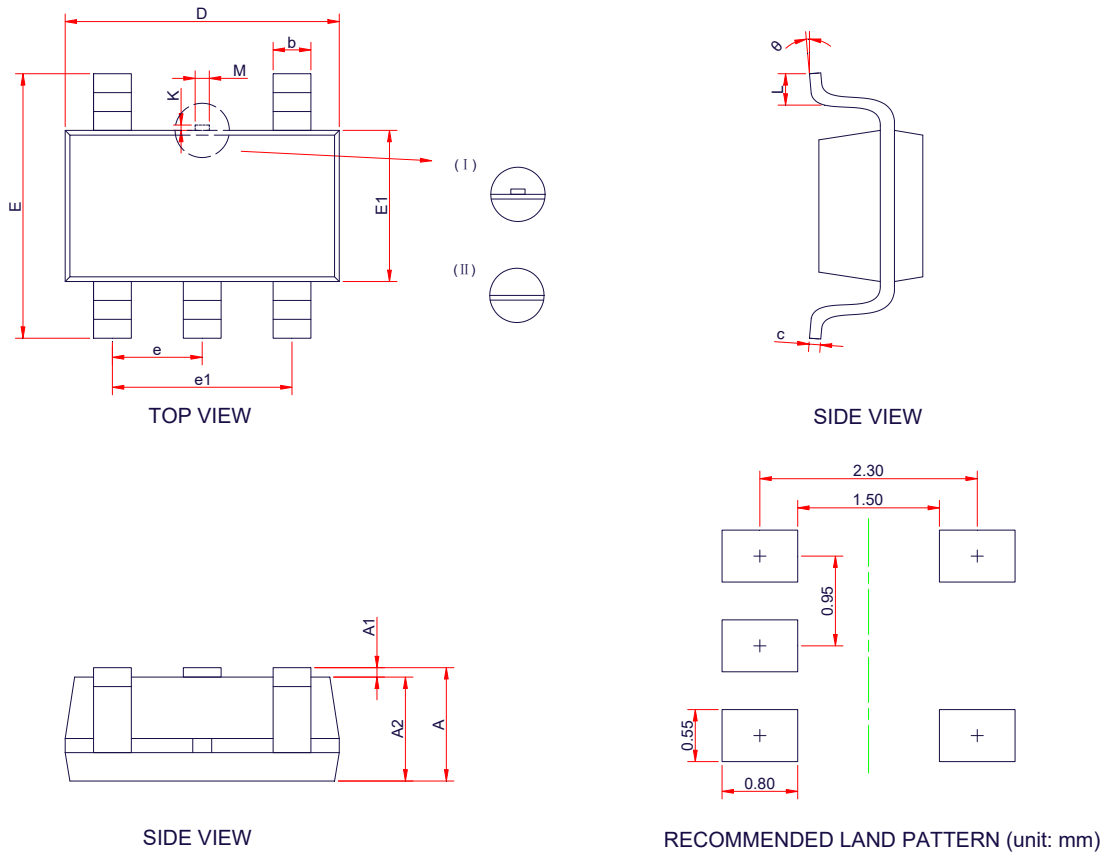


$V_{IN}=4.3-5.3V, V_{OUT}=3.3V, I_{OUT}=10mA$

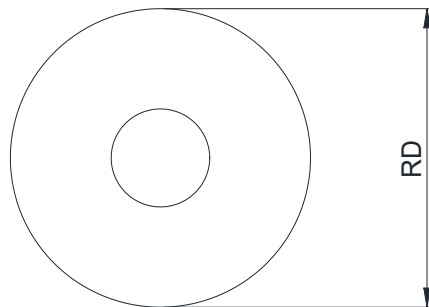
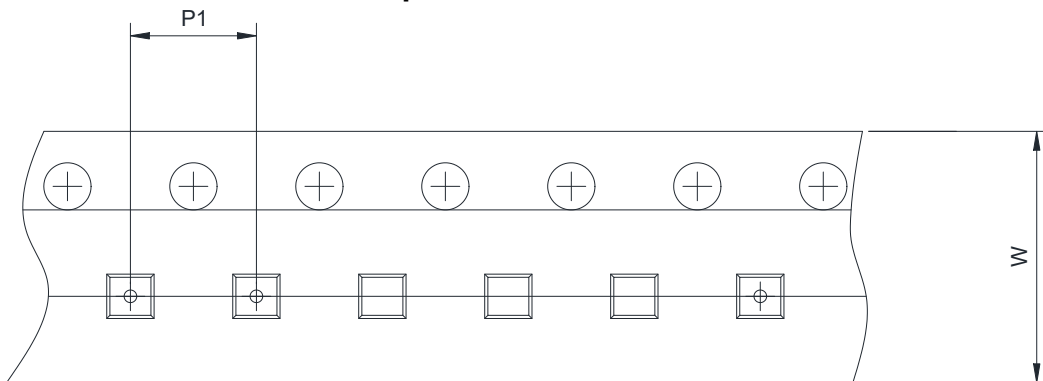
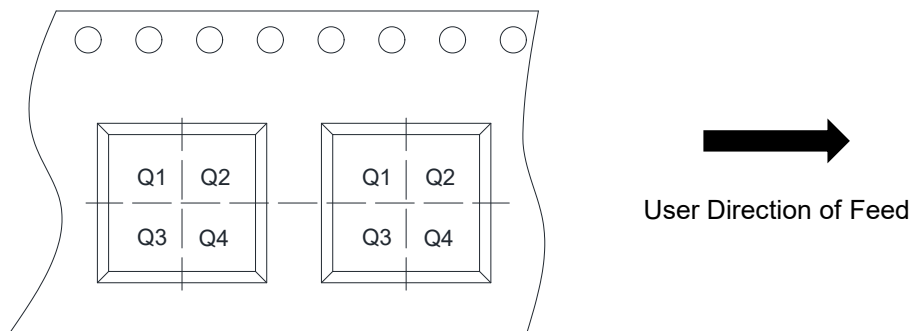


$V_{IN}=5-6V, V_{OUT}=4V, I_{OUT}=10mA$



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	1.90 BSC		
L	0.30	0.45	0.60
M	0.10	0.15	0.25
K	0.00	-	0.25
θ	0°	-	8°

TAPE AND REEL INFORMATION
Reel Dimensions

Tape Dimensions

Quadrant Assignments For PIN1 Orientation In Tape


RD	Reel Dimension	<input checked="" type="checkbox"/> 7inch	<input type="checkbox"/> 13inch
W	Overall width of the carrier tape	<input checked="" type="checkbox"/> 8mm	<input type="checkbox"/> 12mm <input type="checkbox"/> 16mm
P1	Pitch between successive cavity centers	<input type="checkbox"/> 2mm	<input checked="" type="checkbox"/> 4mm <input type="checkbox"/> 8mm
Pin1	Pin1 Quadrant	<input type="checkbox"/> Q1	<input type="checkbox"/> Q2 <input checked="" type="checkbox"/> Q3 <input type="checkbox"/> Q4

ORDER INFORMATION

Ordering No.	Vout (V)	Package	Operating Temperature	Marking	Shipping
WL2855E12-5/TR	1.2	SOT-23-5L	-40~85°C	LEYW	Tape and Reel, 3000
WL2855E18-5/TR	1.8	SOT-23-5L	-40~85°C	LHYW	Tape and Reel, 3000
WL2855E28-5/TR	2.8	SOT-23-5L	-40~85°C	LLYW	Tape and Reel, 3000
WL2855E30-5/TR	3.0	SOT-23-5L	-40~85°C	LMYW	Tape and Reel, 3000
WL2855E33-5/TR	3.3	SOT-23-5L	-40~85°C	LNYW	Tape and Reel, 3000
WL2855E40-5/TR	4.0	SOT-23-5L	-40~85°C	LRYW	Tape and Reel, 3000
WL2855E50-5/TR	5.0	SOT-23-5L	-40~85°C	LTYW	Tape and Reel, 3000