WL2855K

Low noise, Low Power Consumption, 12V Input, 500mA, CMOS LDO

Http://www.ovt.com

Descriptions

The WL2855K series are high accuracy, low noise, 12V Input, 500mA, 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 WL2855K 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 WL2855K regulators are available in standard SOT-89-3L Package. Standard products are Pb-free and Halogen-free.

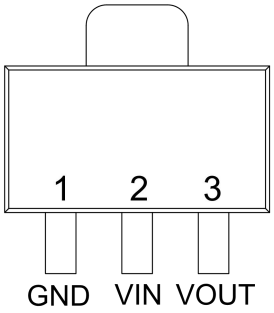
Features

- Input Voltage Range : 2.5V~12V
- Output Voltage Range :1.2V~5V
- Output Current :500mA
- Fixed Voltage Accuracy :±1%(Vo≥2.5V)
- Quiescent current :1uA
- Dropout voltage : 840mV@Vo=4V Io=500mA
- Recommend capacitor : ≥0.1uF
- Short-Circuit Protection

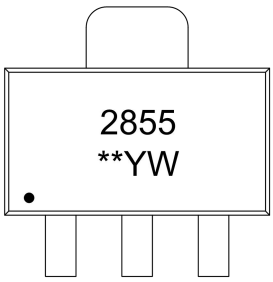
Applications

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

SOT-89-3L



Pin Configuration (Top View)



2855 : Device code
**** : Voltage code**
Y : Year Code
W : Week Code

For detail marking information, please see page 12.

Marking

Order Information

For detail order information, please see page 12.

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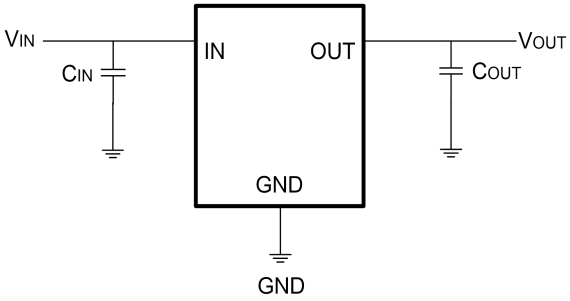
Typical Application



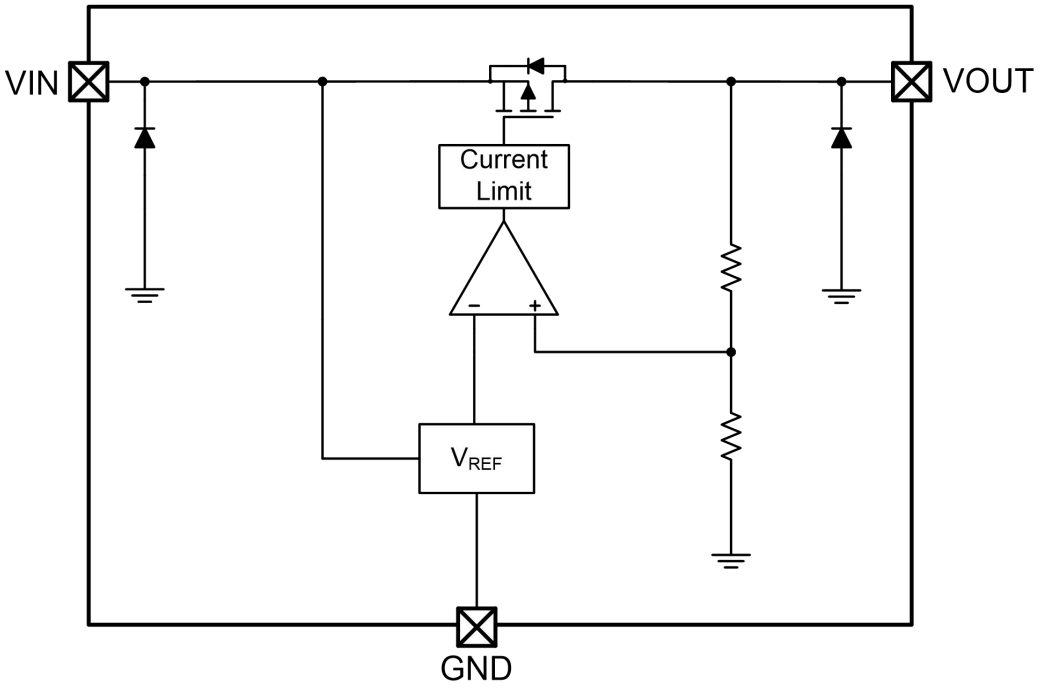
Recommend capacitor :≥0.1uF

Pin Description

SOT-89-3L

PIN	Symbol	Description
1	GND	Ground
2	VIN	Input
3	VOUT	Output

Block Diagram



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Absolute Maximum Ratings

Parameter		Value	Unit
Power Dissipation, P_D@T_A=25˚C		1.5	W
V_{IN} Range		-0.3~13.5	V
V_{OUT} Range		-0.3~5.5	V
I_{OUT}		Internally Limited	mA
Lead Temperature Range		260	ºC
Storage Temperature Range		-55~150	ºC
Operating Junction Temperature Range		150	ºC
MSL		Level-3	
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	ºC
Thermal Resistance, $R_{\theta JA}$ (SOT-89-3L)	77	ºC/W

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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}≥3.3V		500			mA
Dropout Voltage	V_{DROP}	V_{OUT}=3.3V, I_{OUT}=500mA			940	1200	mV
		V_{OUT}=4V, I_{OUT}=500mA			840	1100	mV
Line Regulation	$\triangle V_{LINE}$	V_{IN}=V_{OUT}+1~12V			1	5	mV
Load Regulation	$\triangle V_{Load}$	I_{OUT}=1~500mA			30	50	mV
Quiescent Current	I_Q	V_{IN}=4V, I_{OUT}=0			1	2.2	μA
Short Current	I_{SHORT}	V_{OUT} short to GND			180		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

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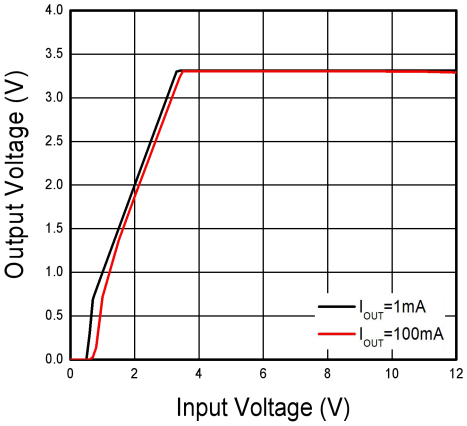
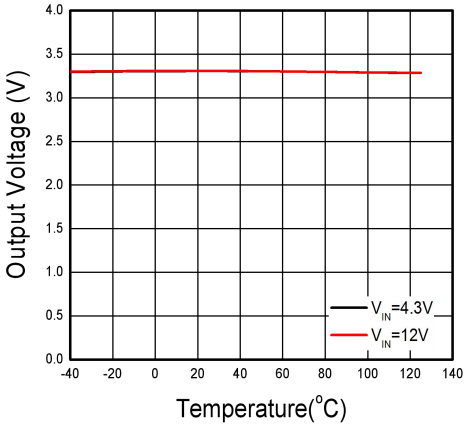
Typical characteristics (Ta=25°C, V_{IN}=V_{OUT}+1V, I_{OUT}=1mA, C_{IN}=C_{OUT}=1 μ F, unless otherwise noted)

V_{OUT}=3.3V

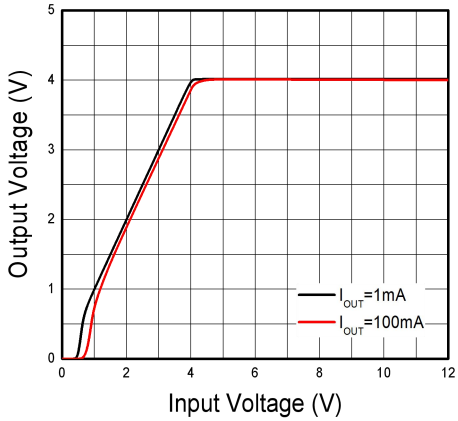


Output Voltage vs. Input Voltage

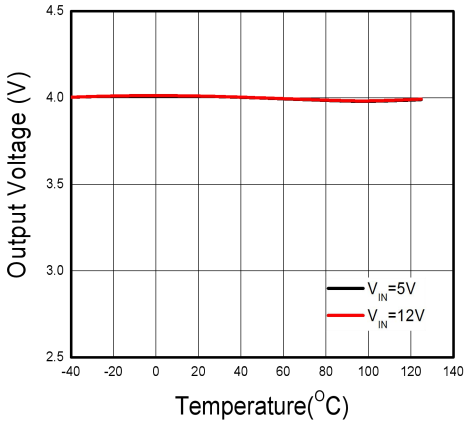


Output Voltage vs. Temperature

V_{OUT}=4.0V

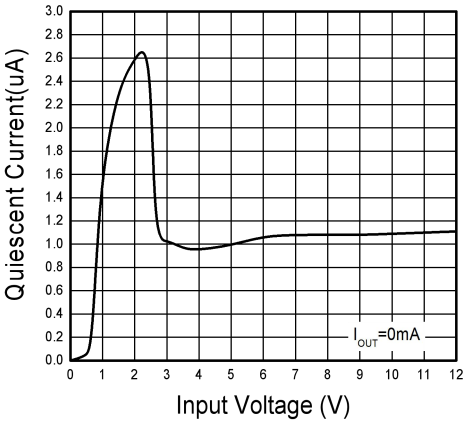


Output Voltage vs. Input Voltage

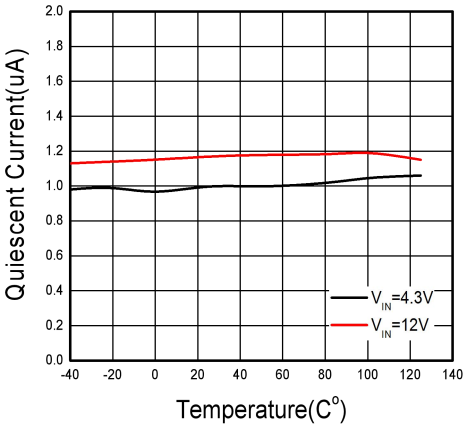


Output Voltage vs. Temperature

V_{OUT}=3.3V



Quiescent Current vs. Input Voltage



Quiescent Current vs. Temperature

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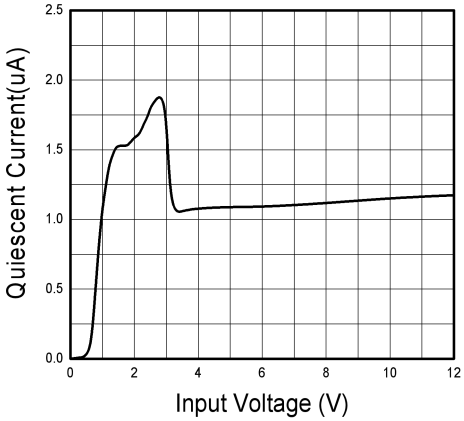
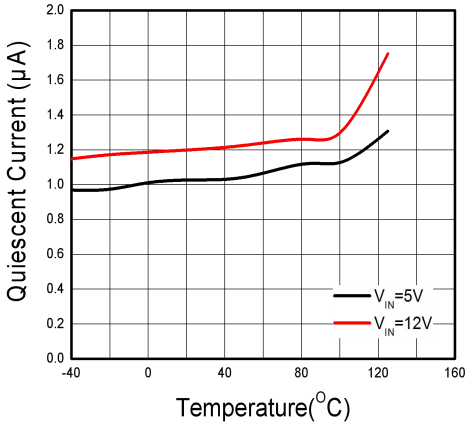
V_{OUT}=4.0V

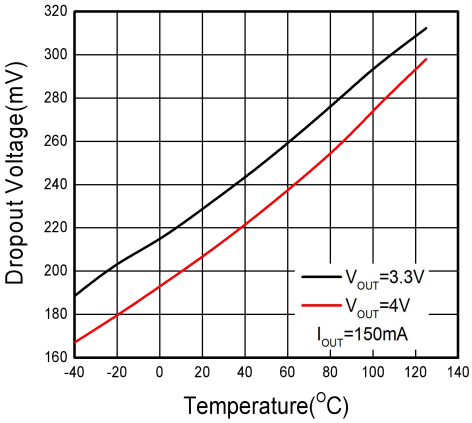


Quiescent Current vs. Input Voltage

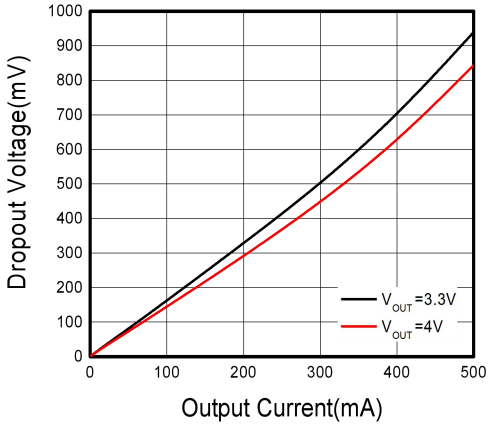


Quiescent Current vs. Temperature

Vdropout

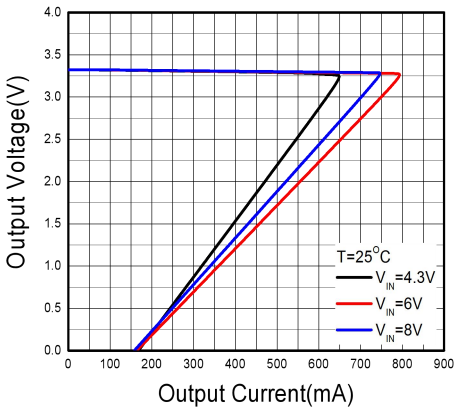


Dropout Voltage vs. Temperature



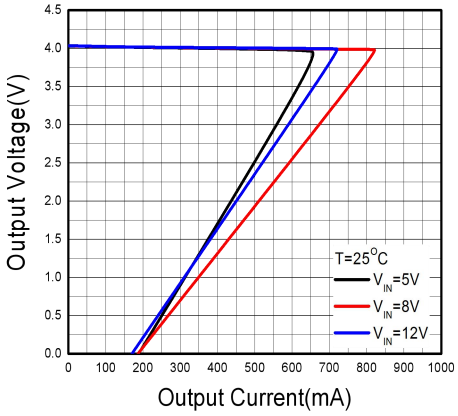
Dropout Voltage vs.Output Current

V_{OUT}=3.3V



Output Voltage vs. Output Current

V_{OUT}=4.0V



Output Voltage vs. Output Current

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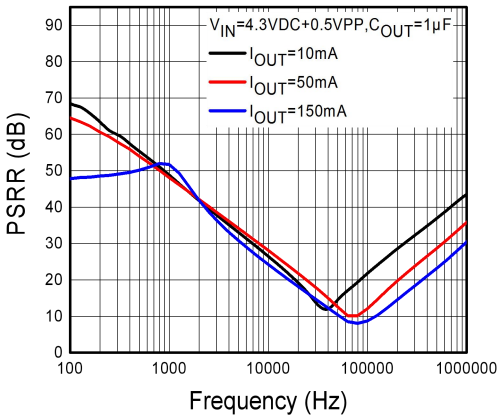
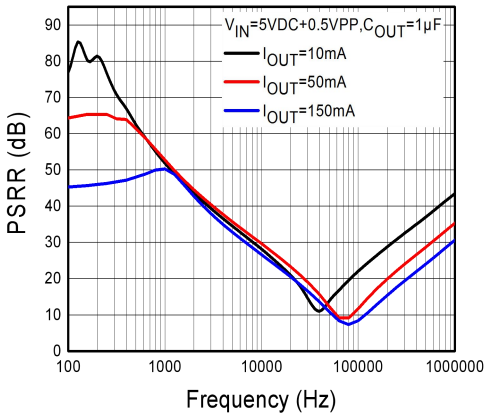
V_{OUT}=3.3V



PSRR vs. Frequency

V_{OUT}=4.0V



PSRR vs. Frequency

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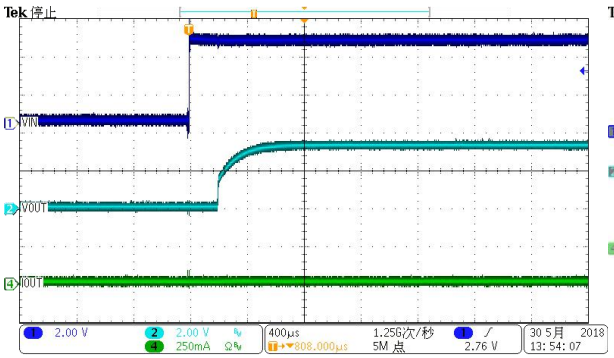
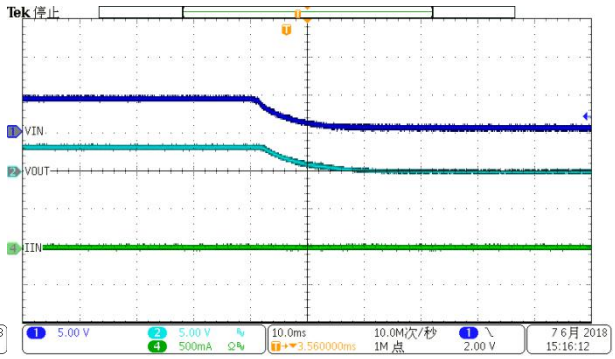
1.Start up & Shut down

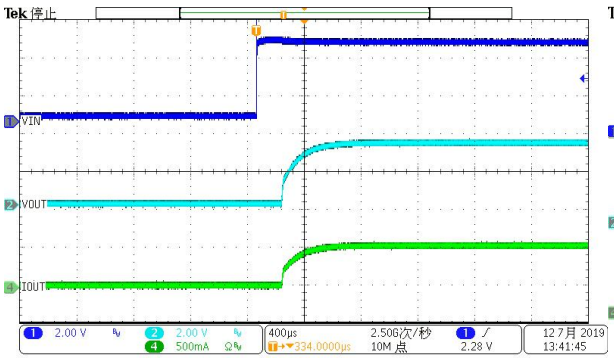
V_{OUT}=3.3V

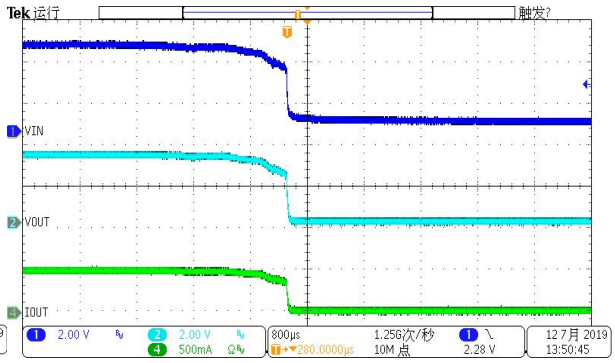
V_{IN}=4.3V,C_{OUT}=1μF,I_{OUT}=1mA





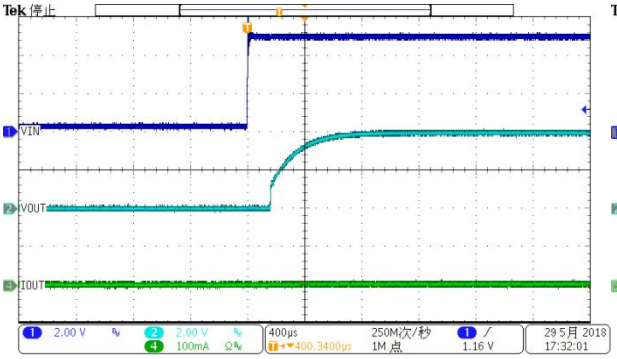
V_{IN}=4.3V,C_{OUT}=1μF,I_{OUT}=500mA

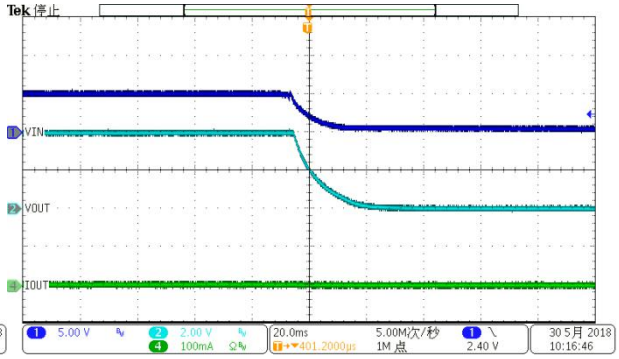




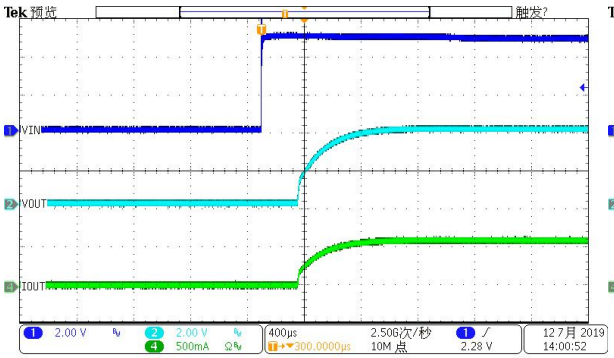
V_{OUT}=4V

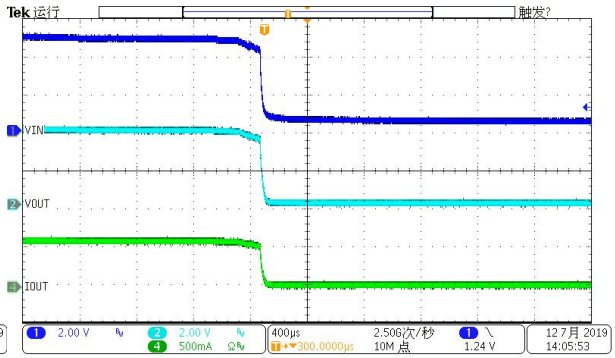
V_{IN}=5V,C_{OUT}=1μF,I_{OUT}=1mA





V_{IN}=5V,C_{OUT}=1μF,I_{OUT}=500mA





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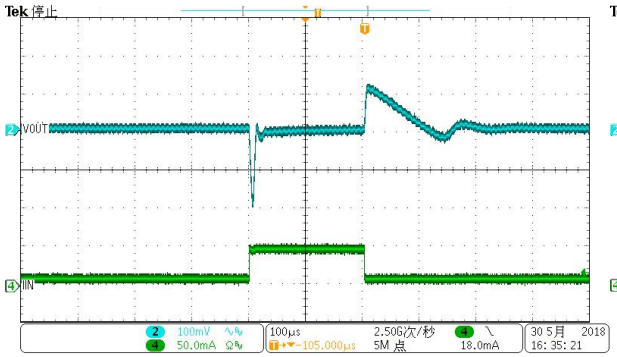
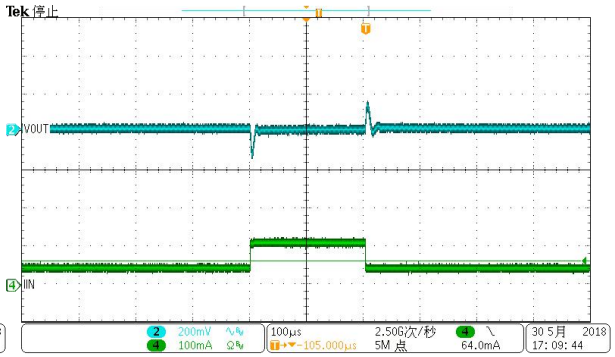
2.Load & Line Transient

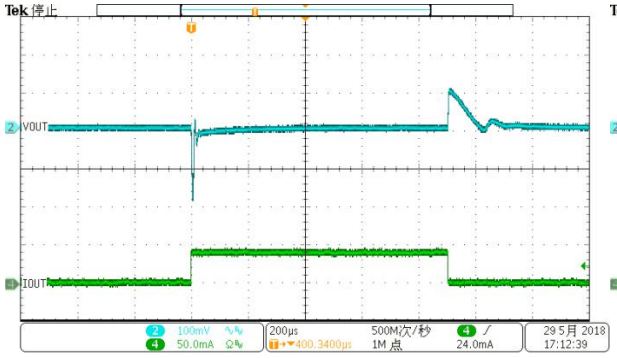
V_{IN}=4.3V,V_{OUT}=3.3V,C_{OUT}=1μF,I_{OUT}=1mA-40mA



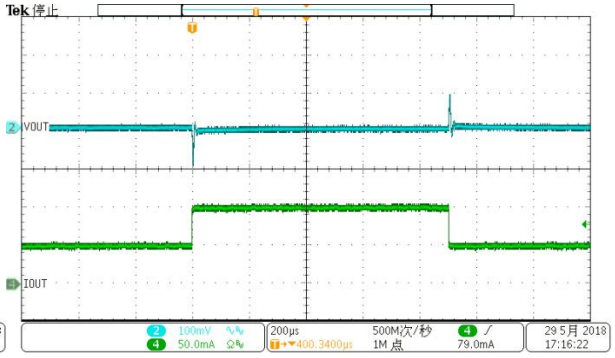
V_{IN}=4.3V,V_{OUT}=3.3V,C_{OUT}=1μF,I_{OUT}=50mA-100mA



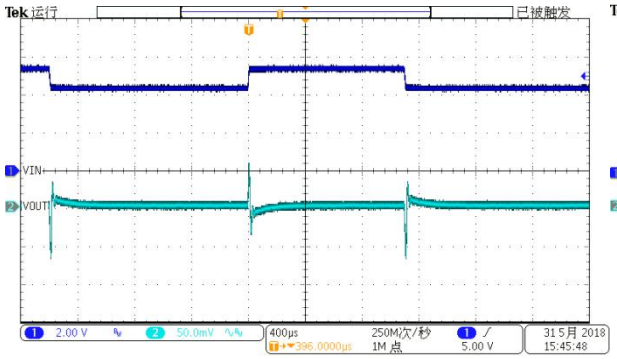
V_{IN}=5V,V_{OUT}=4V,C_{OUT}=1μF,I_{OUT}=1mA-40mA



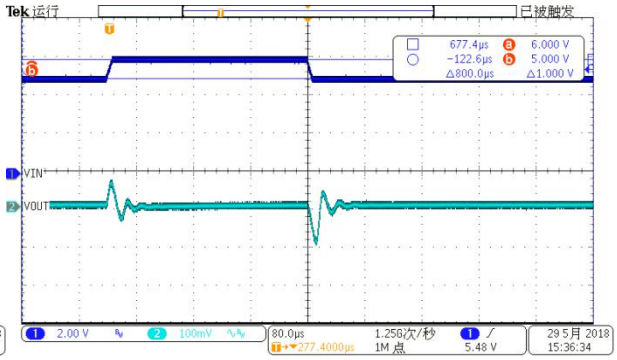
V_{IN}=5V,V_{OUT}=4V,C_{OUT}=1μF,I_{OUT}=50mA-100mA



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



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



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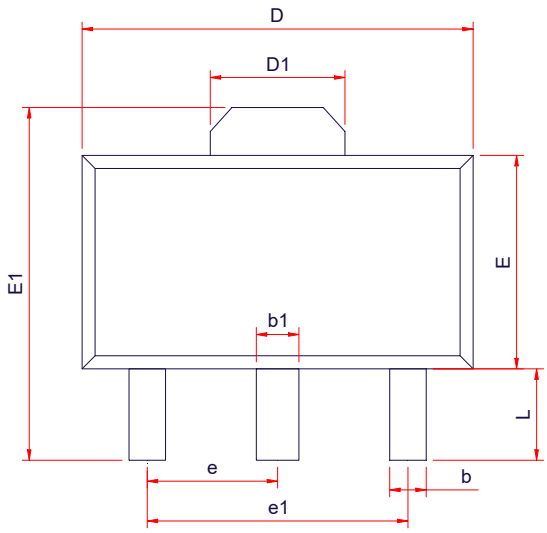
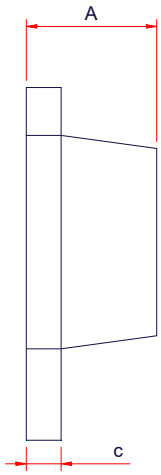
PACKAGE OUTLINE DIMENSIONS

SOT-89-3L



TOP VIEW



SIDE VIEW

SIDE VIEW

Symbol	Dimensions in Millimeters		
	Min.	Typ.	Max.
A	1.40	1.50	1.60
b	0.32	0.42	0.52
b1	0.40	0.49	0.58
c	0.30	0.40	0.50
D	4.40	4.50	4.60
D1	1.60 Ref		
E	2.30	2.45	2.60
E1	3.75	4.00	4.25
e	1.50 BSC		
e1	3.00 BSC		
L	1.05 Ref		

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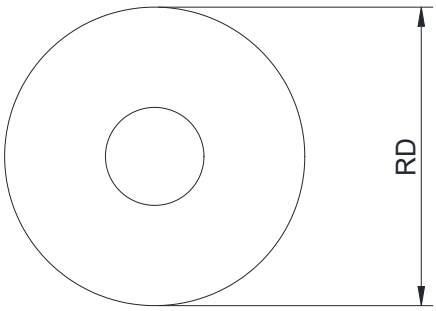
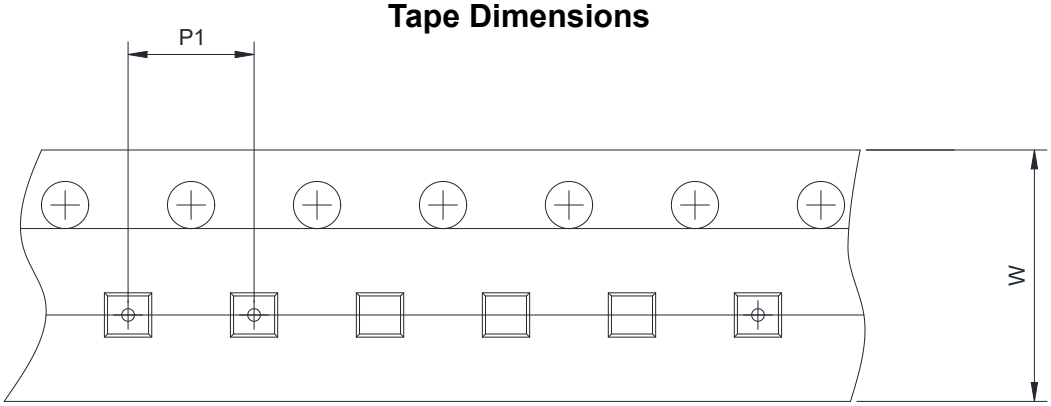
TAPE AND REEL INFORMATION

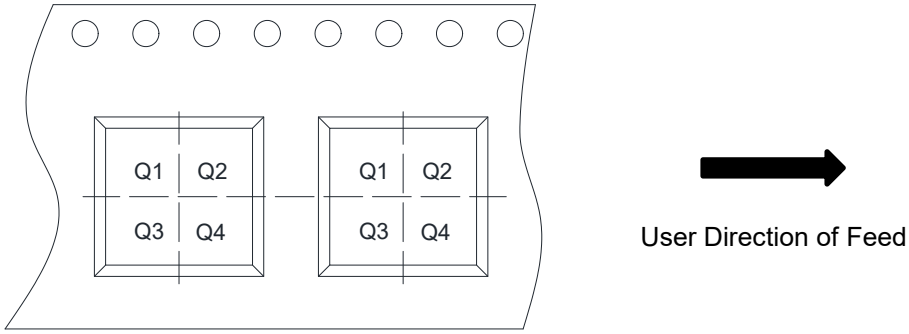
Reel Dimensions



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

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ORDER INFORMATION

Ordering No.	Vout (V)	Package	Operating Temperature	Marking	Shipping
WL2855K18-3/TR	1.8	SOT-89-3L	-40~85℃	BJYW	Tape and Reel, 1000
WL2855K28-3/TR	2.8	SOT-89-3L	-40~85℃	CJYW	Tape and Reel, 1000
WL2855K30-3/TR	3.0	SOT-89-3L	-40~85℃	DAYW	Tape and Reel, 1000
WL2855K33-3/TR	3.3	SOT-89-3L	-40~85℃	DDYW	Tape and Reel, 1000
WL2855K37-3/TR	3.7	SOT-89-3L	-40~85℃	DHYW	Tape and Reel, 1000
WL2855K38-3/TR	3.8	SOT-89-3L	-40~85℃	DJYW	Tape and Reel, 1000
WL2855K40-3/TR	4.0	SOT-89-3L	-40~85℃	EAYW	Tape and Reel, 1000
WL2855K50-3/TR	5.0	SOT-89-3L	-40~85℃	FAYW	Tape and Reel, 1000

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