

## WL2862K

**High Input Voltage, Low Quiescent Current LDO**

[Http://www.ovt.com](http://www.ovt.com)

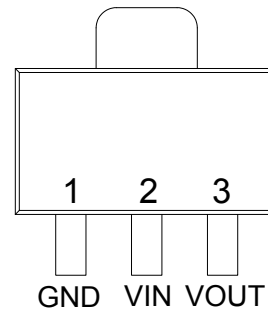
### Descriptions

The WL2862K series is a high accuracy, high input voltage low quiescent current, high speed, and low dropout Linear regulator with high ripple rejection.



**SOT-89**

The WL2862K offers over-current limit and over temperature protection to ensure the device working in well conditions.

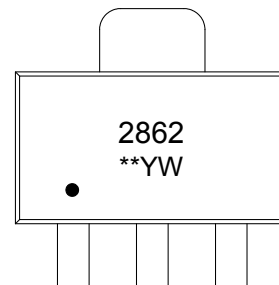


The WL2862K regulators are available in standard SOT-89-3L packages. Standard products are Pb-free and Halogen-free.

### Pin Configuration (Top View)

### Features

- Supply Voltage : 4.5V~36V
- Output Range : 3V~12V
- Output Accuracy : <+/-2%
- Output Current : 150mA@(VIN-VOUT=2V)(Typ.)
- PSRR : 65dB @ 0.1KHz
- Dropout Voltage : 900mV @ IOUT=150mA
- Quiescent Current : 4.5μA@VIN=12V(Typ.)
- Recommend Capacitor : 10uF



### Marking

- |               |                      |
|---------------|----------------------|
| <b>2862**</b> | <b>= Device Code</b> |
| <b>Y</b>      | <b>= Year</b>        |
| <b>W</b>      | <b>= Week</b>        |

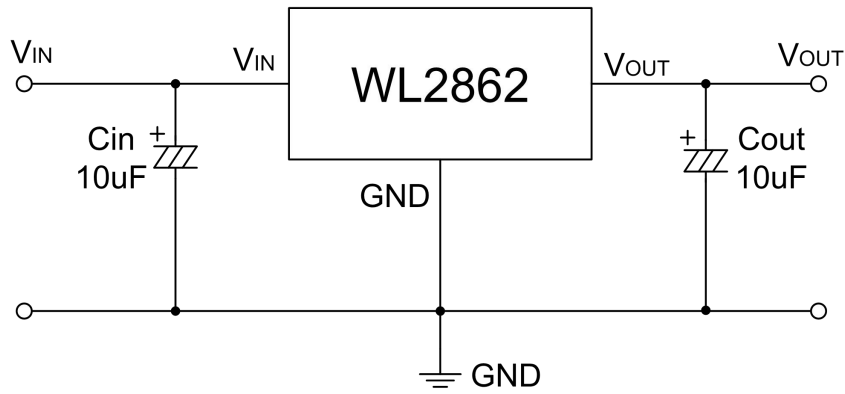
### Applications

- Battery-Powered Equipment
- Communication Equipment
- Audio/Video Equipment
- Smoke Detector

### Order Information

For detail order information, please see page 10.

Typical Application

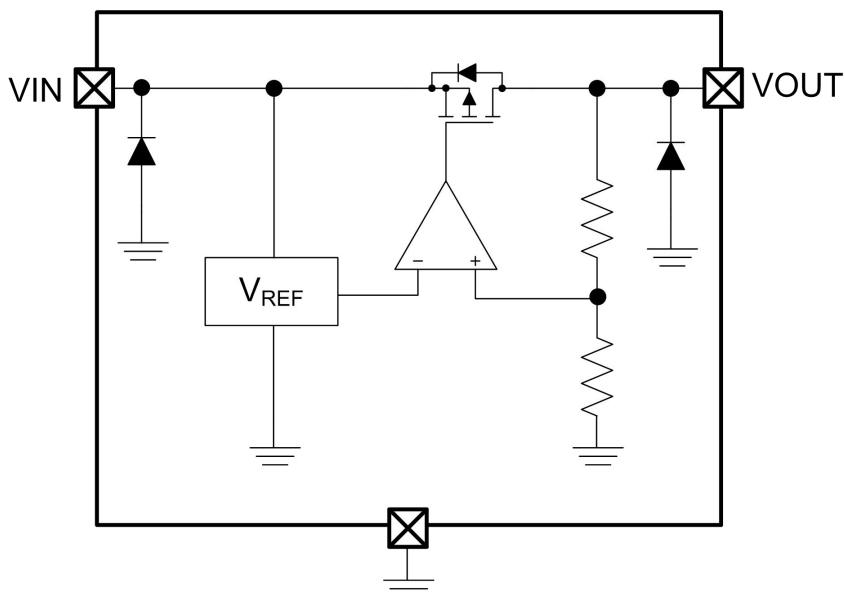


(Locate Cin and Cout as close to the Vin pin and Vout pin as possible.)

Pin Description

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

Block Diagram



**Absolute Maximum Ratings**

Parameter	Value	Unit
Power Dissipation	700	mW
V <sub>IN</sub> Range	-0.3~44	V
V <sub>OUT</sub> Range	-0.3~15	V
Lead Temperature Range	260	°C
Storage Temperature Range	-55 ~ 150	°C
Operating Junction Temperature Range	150	°C
ESD MM	600	V
ESD HBM	8K	V

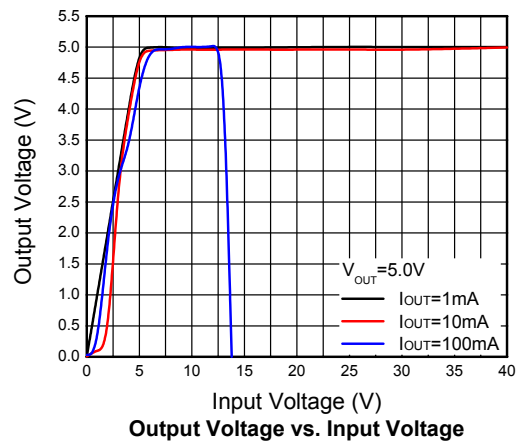
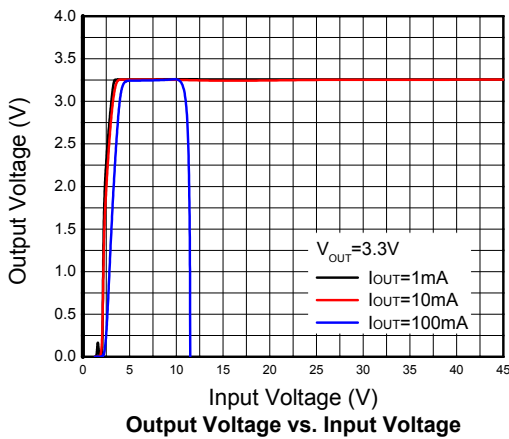
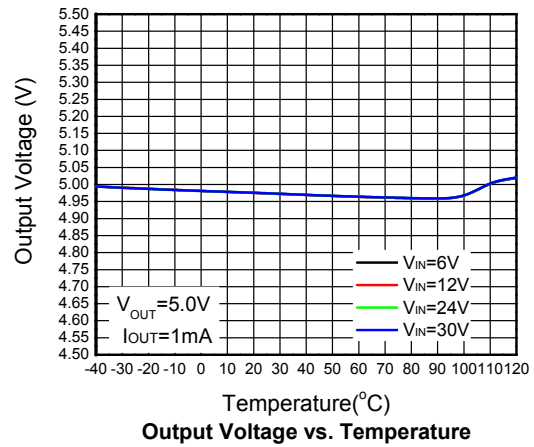
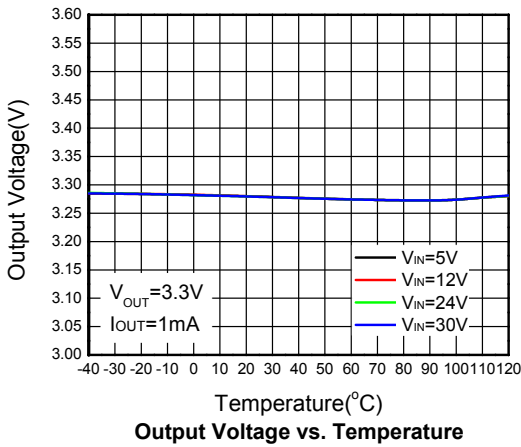
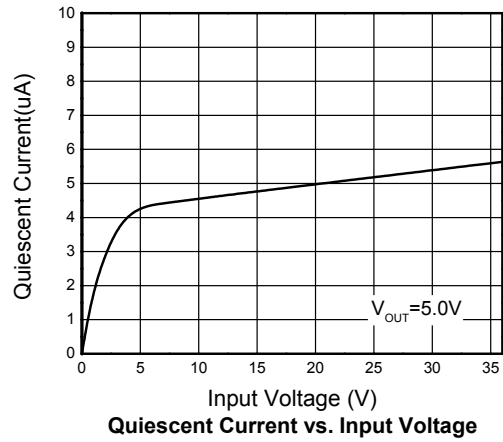
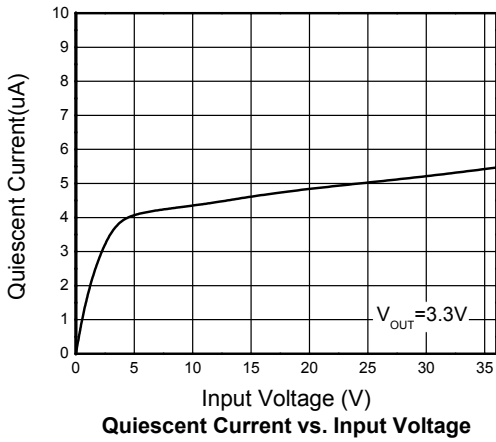
**Recommend Operating Ratings**

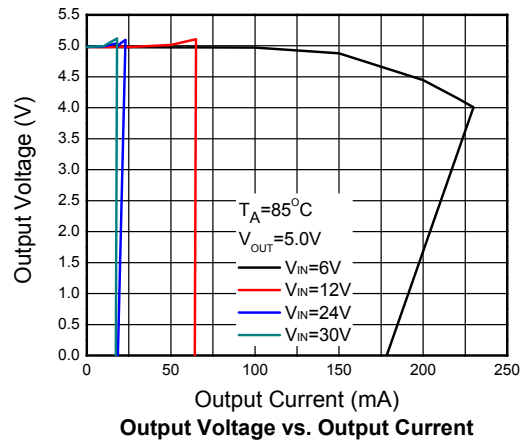
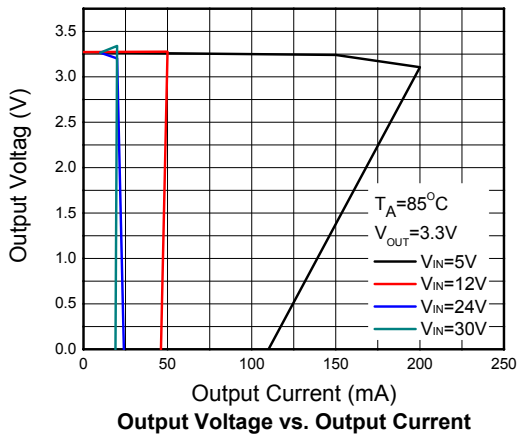
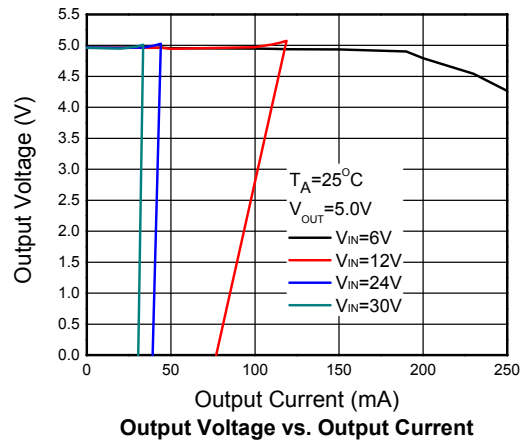
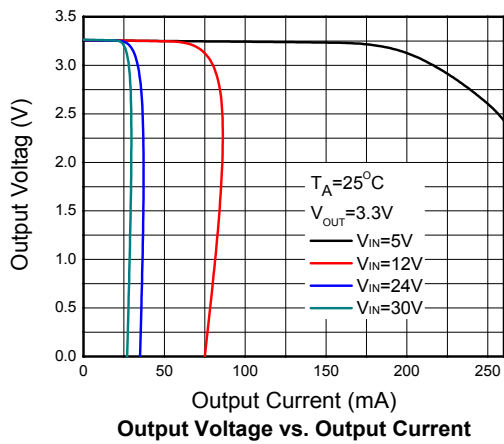
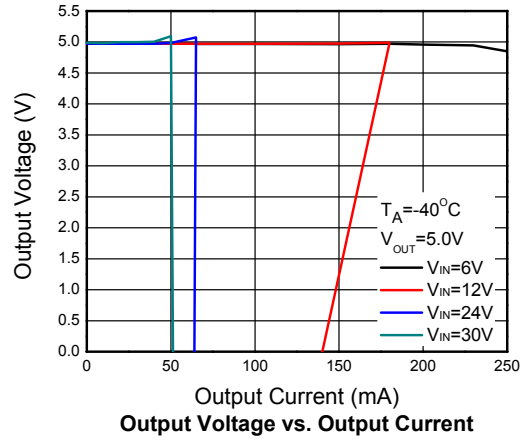
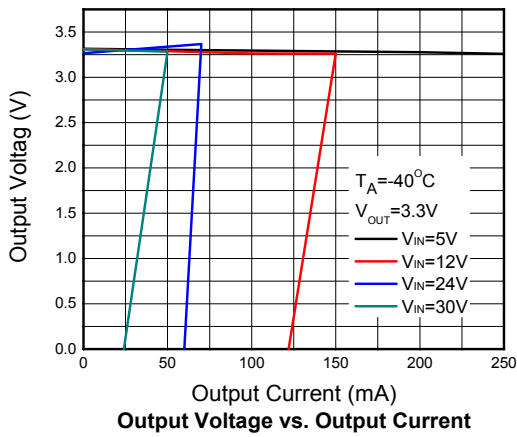
Parameter	Value	Unit
Operating Supply voltage	4.5~36	V
Operating Temperature Range	-40~85	°C
Thermal Resistance (On PCB) , R <sub>θJA</sub>	77	°C/W

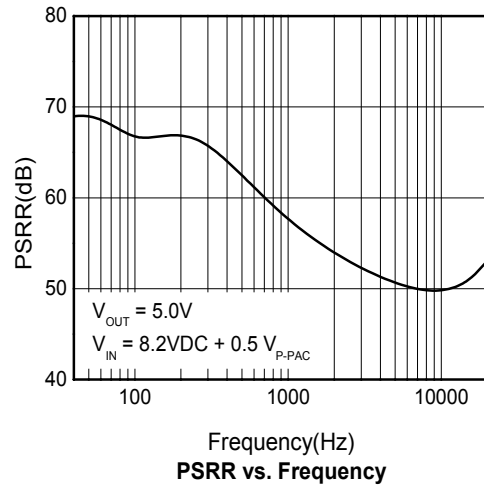
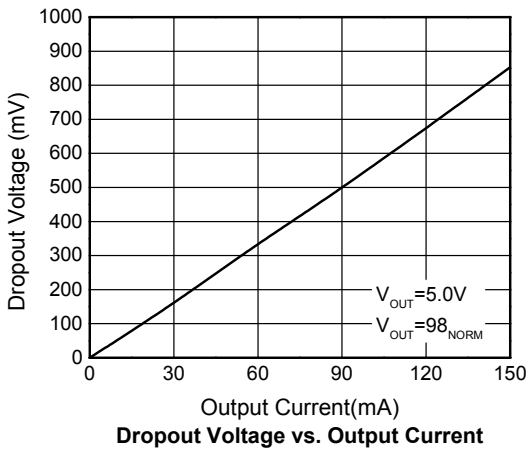
**Electronics Characteristics** ( $T_A=25^{\circ}\text{C}$ ,  $V_{IN}=12\text{V}$ ,  $C_{IN}=C_{OUT}=10\mu\text{F}$ , unless otherwise noted)

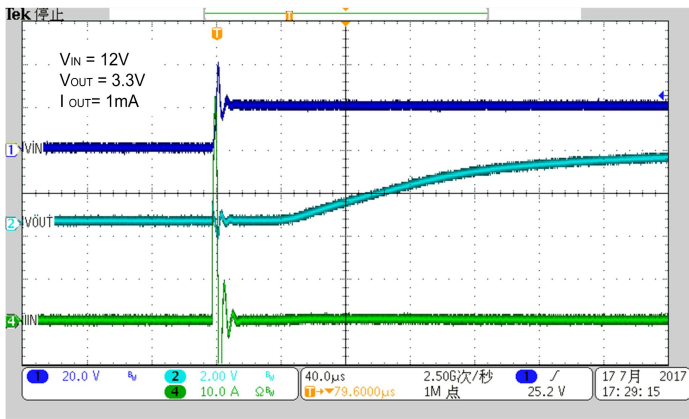
Symbol	Parameter	Test Condition	WL2862K SPEC			Unit
			Min.	Typ.	Max.	
$V_{IN}$	Input Range	$I_{OUT}=10\text{mA}$	4.5		36	V
$V_{OUT}$	Output Range	$I_{OUT}=10\text{mA}$	$V_{OUT} \cdot 0.98$	$V_{OUT}$	$V_{OUT} \cdot 1.02$	V
$\Delta V_{OUT}$	Output Voltage	$V_{IN}=12\text{V}, I_{OUT}=10\text{mA}$	2.940	3.0	3.060	V
			3.234	3.3	3.366	V
			4.9	5.0	5.1	V
		$V_{IN}=18\text{V}, I_{OUT}=10\text{mA}$	11.76	12.0	12.24	V
$I_{OUT\_PK}$	Maximum Output Current	$V_{IN}=V_{OUT}+2\text{V}, R_L=1\Omega$	150			mA
$I_{Q1}$	Quiescent Current For $V_{OUT}=5\text{V}$	$V_{IN}=12\text{V}$ , No load		4.5		$\mu\text{A}$
$I_{Q2}$	Quiescent Current For $V_{OUT}=12\text{V}$	$V_{IN}=18\text{V}$ , No load		5.5		$\mu\text{A}$
$V_{DROP}$	Dropout Voltage	$I_{OUT}=1\text{mA}$		6		mV
		$I_{OUT}=150\text{mA}$		900		
$\Delta V_{Line}$	Line Regulation	$V_{IN}=7\text{--}24\text{V}, V_{OUT}=5\text{V}, I_{OUT}=1\text{mA}$		0.02		%V
		$V_{IN}=7\text{--}36\text{V}, V_{OUT}=5\text{V}, I_{OUT}=1\text{mA}$		0.1		
$\Delta V_{Load}$	Load Regulation	$V_{IN}=12\text{V}, I_{OUT}=1\text{--}100\text{mA}$		0.6		%
$e_{NO}$	Output Noise	$I_{OUT}=10\text{mA}$		300		$\mu\text{V}$
PSRR	Ripple Rejection	$V_{IN}=10\text{V}$ $V_{PP}=0.5\text{V}$ $I_{OUT}=1\text{mA}$	$f=100\text{Hz}$	65		dB
			$f=1\text{KHz}$	55		
			$f=10\text{KHz}$	40		
$T_{SD}$	Thermal Protection	$V_{IN}=12\text{V}, I_{OUT}=1\text{mA}$		150		$^{\circ}\text{C}$
$\Delta V_o/\Delta T$	Temperature Coefficient	$V_{IN}=12\text{V}, I_{OUT}=1\text{mA}$		100		ppm

Typical characteristics ( $T_A=25^\circ\text{C}$ ,  $C_{IN}=C_{OUT}=10\mu\text{F}$ , unless otherwise noted)

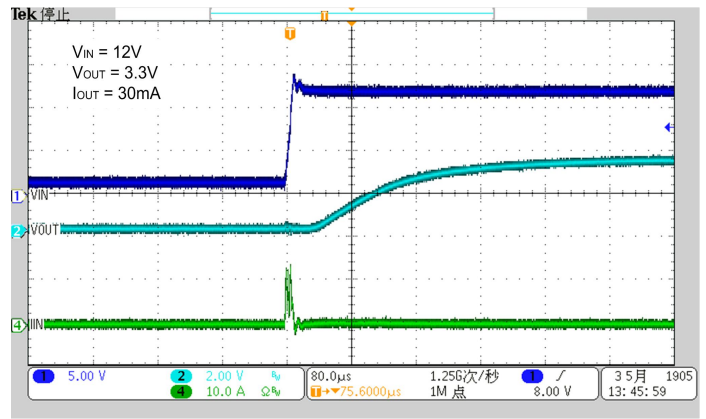




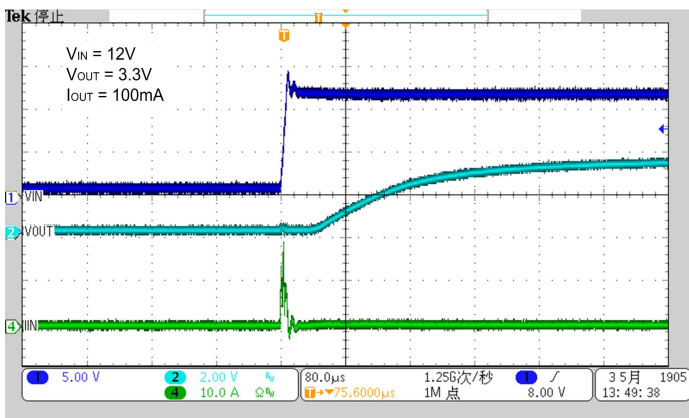




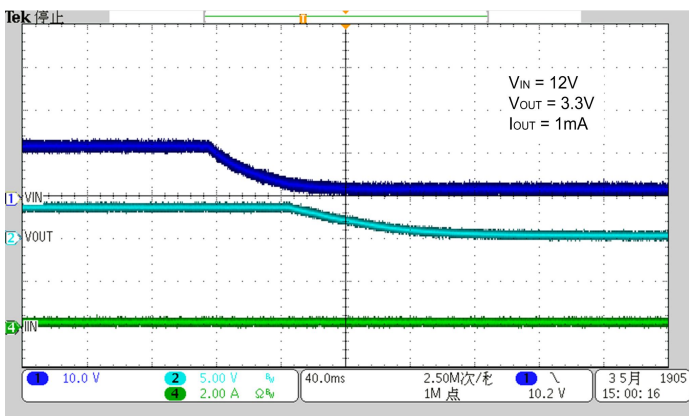
Start up from Power ON



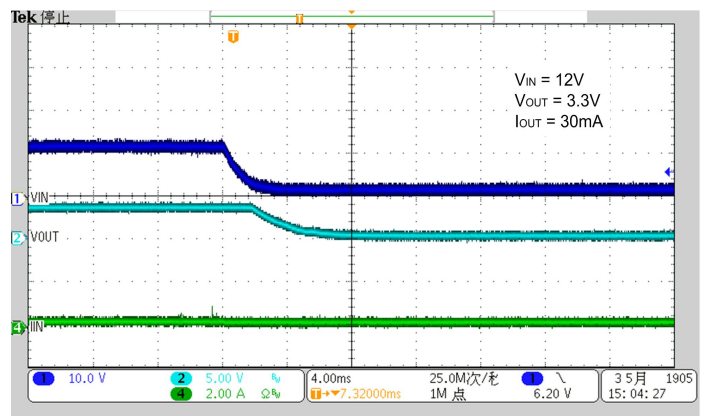
Start up from Power ON



Start up from Power ON

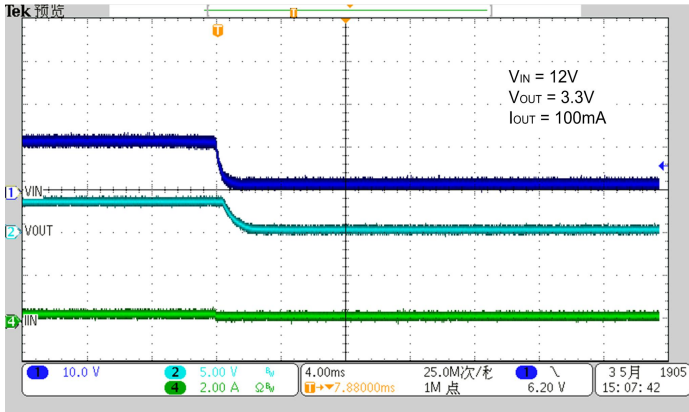


Shutdown from Power OFF

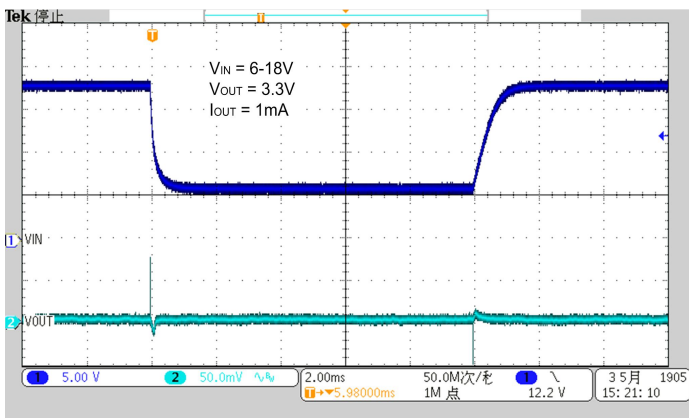


Shutdown from Power OFF

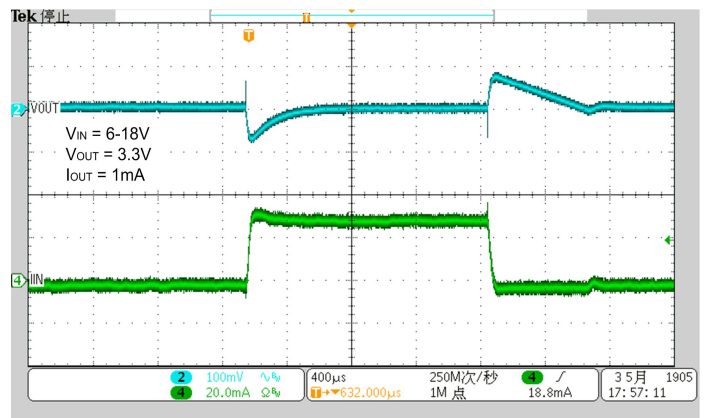




Shutdown from Power OFF



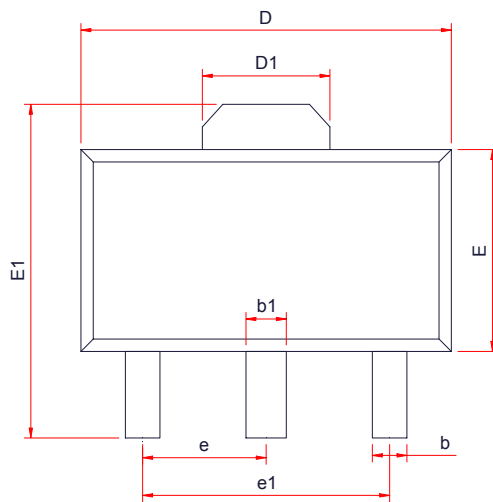
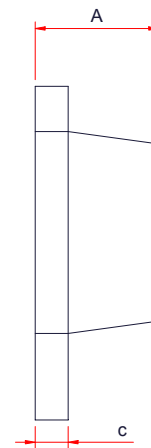
Line Transient Response



Line Transient Response

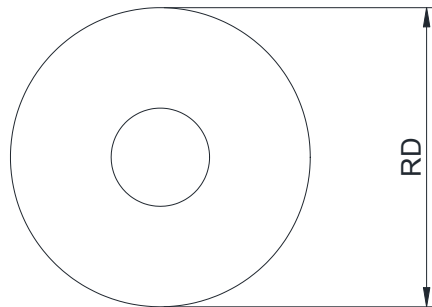
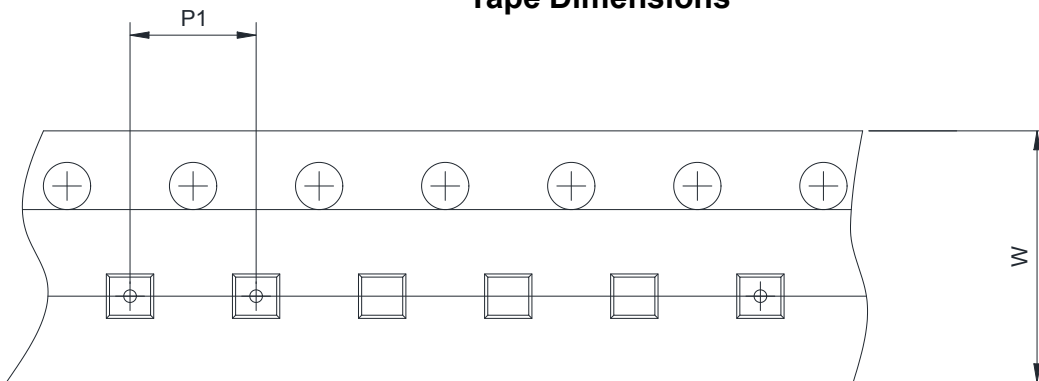
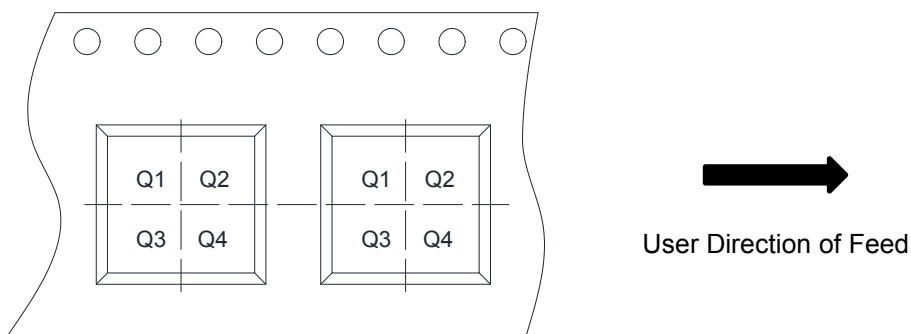
## ORDER INFORMATION

Ordering No.	Vout (V)	Package	Operating Temperature	Marking	Shipping
WL2862K30-3/TR	3.0	SOT-89	-40~+85°C	2862 DAYW	Tape and Reel, 1000
WL2862K33-3/TR	3.3	SOT-89	-40~+85°C	2862 DDYW	Tape and Reel, 1000
WL2862K50-3/TR	5.0	SOT-89	-40~+85°C	2862 FAYW	Tape and Reel, 1000
WL2862KC0-3/TR	12.0	SOT-89	-40~+85°C	2862 BCYW	Tape and Reel, 1000

**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	1.50	1.65	1.80
E	2.30	2.45	2.60
E1	3.75	4.00	4.25
e	1.50BSC		
e1	3.00BSC		
L	0.89		1.20

**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 type="checkbox"/> 8mm	<input checked="" type="checkbox"/> 12mm <input type="checkbox"/> 16mm
P1	Pitch between successive cavity centers	<input type="checkbox"/> 2mm	<input type="checkbox"/> 4mm <input checked="" type="checkbox"/> 8mm
Pin1	Pin1 Quadrant	<input type="checkbox"/> Q1	<input type="checkbox"/> Q2 <input checked="" type="checkbox"/> Q3 <input type="checkbox"/> Q4