

## Description

The AP2127 Series are positive voltage regulator ICs fabricated by CMOS process.

The AP2127 Series have features of low dropout voltage, low noise, high output voltage accuracy, and low current consumption which make them ideal for use in various battery-powered devices.

The AP2127 has 1.0V, 1.2V, 1.5V, 1.8V, 2.5V, 2.8V, 3.0V, 3.3V, 4.2V, and 4.75V fixed voltage versions and 0.8V to 5.5V adjustable voltage versions.

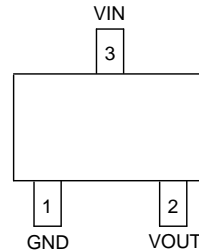
The AP2127 Series are available in SOT-23 (for fixed versions only), SOT-23-3 (for fixed versions only), SOT-23-5, SOT-89 (for fixed versions only) packages.

## Features

- Wide Operating Voltage: 2.5V to 6V
- High Output Voltage Accuracy:  $\pm 2\%$
- High Ripple Rejection:  
68dB @  $f = 1\text{kHz}$ , 54dB @  $f = 10\text{kHz}$
- Low Standby Current: 0.1 $\mu\text{A}$
- Low Dropout Voltage: 170mV @ 300mA for  $V_{\text{OUT}} = 3.3\text{V}$ ,  
140mV @ 300mA for  $V_{\text{OUT}} = 4.75\text{V}$
- Low Quiescent Current: 60 $\mu\text{A}$  Typical
- Low Output Noise: 60 $\mu\text{VRMS}$  @  $V_{\text{OUT}} = 0.8\text{V}$
- Short Current Limit: 50mA
- Over Temperature Protection
- Compatible with Low ESR Ceramic Capacitor:  
1 $\mu\text{F}$  for  $C_{\text{IN}}$  and  $C_{\text{OUT}}$
- Excellent Line/Load Regulation
- Soft Start Time: 50 $\mu\text{s}$
- Auto Discharge Resistance:  $R_{\text{DS(ON)}} = 60\Omega$
- **Totally Lead-Free & Fully RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**

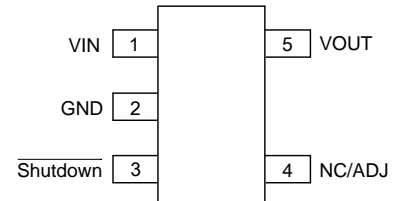
## Pin Assignments

(Top View)



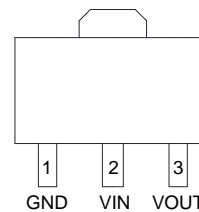
**SOT-23/SOT-23-3**

(Top View)



**SOT-23-5**

(Top View)



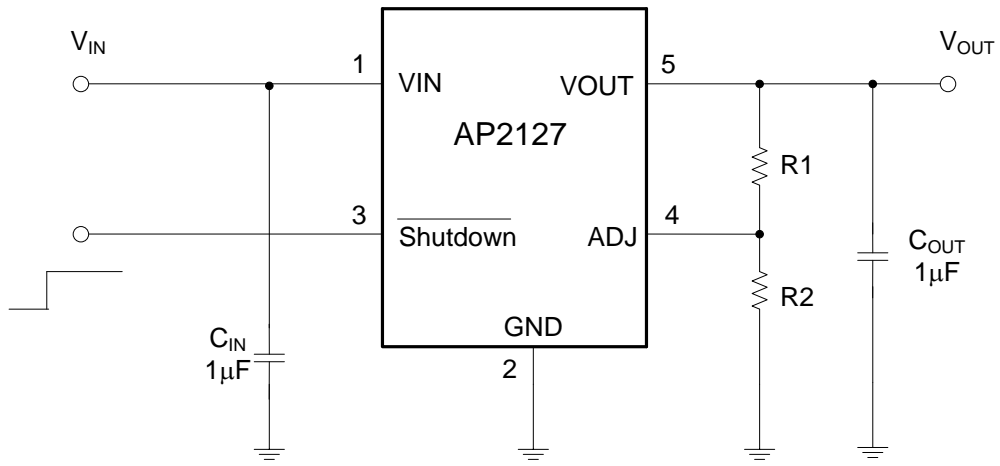
**SOT-89**

## Applications

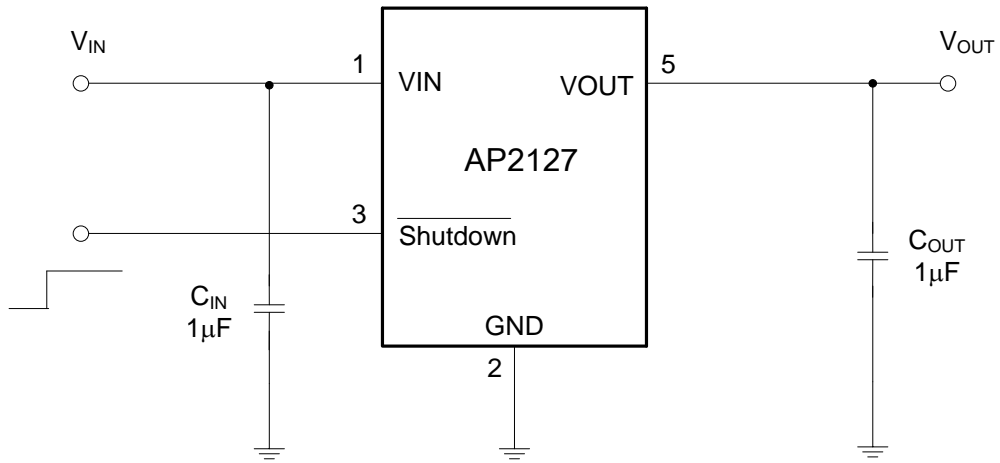
- Datacom
- Notebook Computers
- Mother Board

- Notes:
1. No purposely added lead. Fully EU Directive 2002/95/EC (RoHS) & 2011/65/EU (RoHS 2) compliant.
  2. See [http://www.diodes.com/quality/lead\\_free.html](http://www.diodes.com/quality/lead_free.html) for more information about Diodes Incorporated's definitions of Halogen- and Antimony-free, "Green" and Lead-free.
  3. Halogen- and Antimony-free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.

**Typical Applications Circuit**



$$V_{OUT} = 0.8(1 + R1/R2)V$$

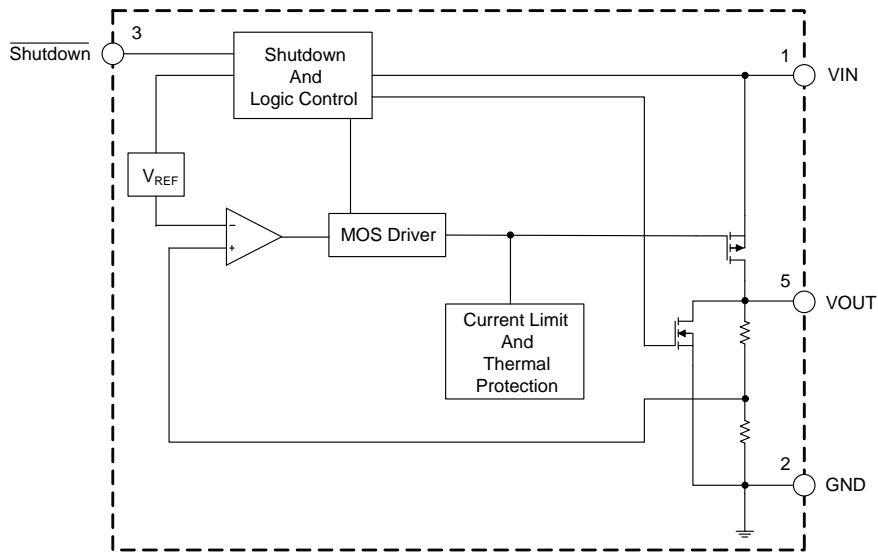


For Fixed Voltage Versions

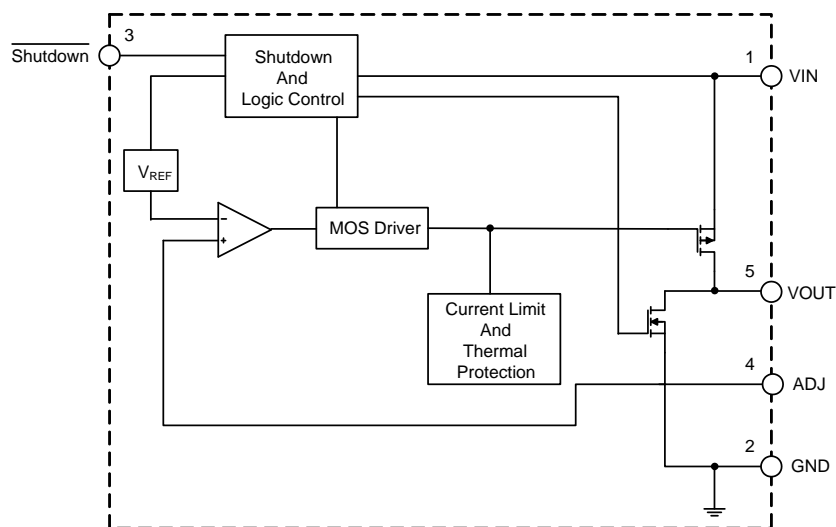
## Pin Descriptions

Pin Name	Pin Number			Function
	SOT-23 SOT-23-3	SOT-23-5	SOT-89	
VIN	3	1	2	Power Input
VOUT	2	5	3	Power Output
GND	1	2	1	Ground
NC/ADJ	—	4	—	No Connection / VOUT feedback input, connect resistor divider.
Shutdown	—	3	—	Enable Input.
PAD	—	—	—	Exposed PAD for thermal performance improvement connect to GND

## Functional Block Diagram



Fixed Version (SOT-23-5 Package)



Adjustable Version (SOT-23-5 Package)

### Absolute Maximum Ratings (Note 4) (@T<sub>A</sub> = +25°C, unless otherwise specified.)

Symbol	Parameter	Value		Unit
V <sub>IN</sub>	Input Voltage	6.5		V
V <sub>CE</sub>	Shutdown Input Voltage	-0.3 to V <sub>IN</sub> +0.3		V
I <sub>OUT</sub>	Output Current	450		mA
T <sub>J</sub>	Junction Temperature	+150		°C
T <sub>STG</sub>	Storage Temperature Range	-65 to +150		°C
T <sub>LEAD</sub>	Lead Temperature (Soldering, 10sec)	+260		°C
θ <sub>JA</sub>	Thermal Resistance (Junction to Ambient)	SOT-23	180	°C/W
		SOT-23-3	250	
		SOT-23-5	250	
		SOT-89	100	
ESD	ESD (Human Body Model)	6000		V
ESD	ESD (Machine Model)	200		V

Note: 4. Stresses greater than those listed under "Absolute Maximum Ratings" may cause permanent damage to the device. These are stress ratings only, and functional operation of the device at these or any other conditions beyond those indicated under "Recommended Operating Conditions" is not implied. Exposure to "Absolute Maximum Ratings" for extended periods may affect device reliability.

### Recommended Operating Conditions (@T<sub>A</sub> = +25°C, unless otherwise specified.)

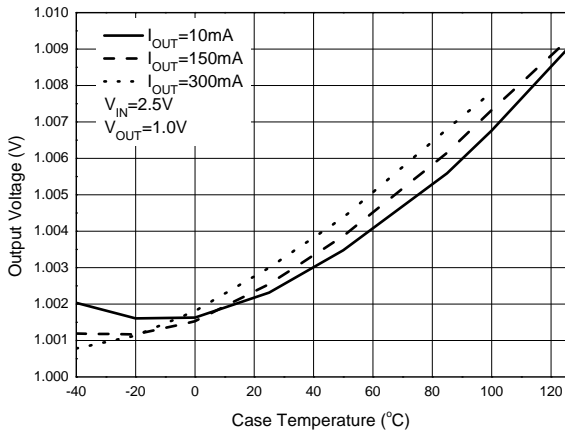
Symbol	Parameter	Min	Max	Unit
V <sub>IN</sub>	Input Voltage	2.5	6	V
T <sub>A</sub>	Operating Ambient Temperature Range	-40	+85	°C

**Electrical Characteristics** ( $V_{IN} = 2.5V$  (for 0.8V to 1.8V voltage versions),  $V_{IN} = V_{OUT} + 1V$  (for 2.5V to 4.75V voltage versions),  $V_{IN} = 6V @ V_{OUT} = 4.75V$ ,  $T_A = +25^\circ C$ ,  $C_{IN} = 1\mu F$ ,  $C_{OUT} = 1\mu F$ , **Bold** typeface applies over  $-40^\circ C \leq T_A \leq +85^\circ C$ , unless otherwise specified.)

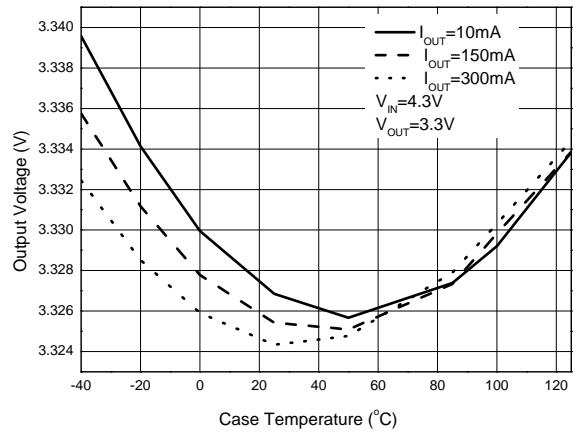
Symbol	Parameter	Conditions	Min	Typ	Max	Unit	
$V_{REF}$	Reference Voltage	$V_{IN} = V_{OUT} + 1V$ $1mA \leq I_{OUT} \leq 300mA$	0.784	0.8	0.816	V	
$V_{OUT}$	Output Voltage	$V_{IN} = V_{OUT} + 1V$ $1mA \leq I_{OUT} \leq 300mA$	98% x $V_{OUT}$	—	102% x $V_{OUT}$	V	
$V_{IN}$	Input Voltage	—	2.5	—	6	V	
$I_{OUT(MAX)}$	Maximum Output Current	$V_{IN} - V_{OUT} = 1V$ $V_{OUT} = 0.98 \times V_{OUT}$	300	400	—	mA	
$\Delta V_{OUT}$	Load Regulation	$V_{IN} - V_{OUT} = 1V$ $1mA \leq I_{OUT} \leq 300mA$	—	4	10	mV	
$\Delta V_{OUT}$	Line Regulation	$V_{OUT} + 0.5V \leq V_{IN} \leq 6V$ $I_{OUT} = 30mA$	—	0.5	5	mV	
$V_{DROP}$	Dropout Voltage	$V_{OUT} = 1.0V, I_{OUT} = 300mA$	—	1400	1500	mV	
		$V_{OUT} = 1.2V, I_{OUT} = 300mA$	—	1200	1300		
		$V_{OUT} = 1.5V, I_{OUT} = 300mA$	—	900	1000		
		$V_{OUT} = 1.8V, I_{OUT} = 300mA$	—	600	700		
		$V_{OUT} = 2.5V, 2.8V, 3.0V, 3.3V, 4.2V,$ $I_{OUT} = 300mA$	—	170	300		
		$V_{OUT} = 4.75V,$ $I_{OUT} = 300mA$	—	140	300		
$I_Q$	Quiescent Current	$V_{IN} = V_{OUT} + 1V, I_{OUT} = 0mA$	—	60	90	$\mu A$	
$I_{STD}$	Standby Current	$V_{IN} = V_{OUT} + 1V$ $V_{SHUTDOWN}$ in off mode	—	0.1	1.0	$\mu A$	
$PSRR$	Power Supply Rejection Ration	AP2127-1.0V to 4.2V, Ripple 1V <sub>P-P</sub> $V_{IN} = V_{OUT} + 1V$	f = 100Hz	—	68	—	dB
			f = 1kHz	—	68	—	dB
			f = 10kHz	—	54	—	dB
		AP2127-4.75V, Ripple 0.5V <sub>P-P</sub> $V_{IN} = V_{OUT} + 1V$	f = 100Hz	—	63	—	dB
			f = 1kHz	—	63	—	dB
			f = 10kHz	—	45	—	dB
$\Delta V_{OUT}/V_{OUT} / \Delta T$	Output Voltage Temperature Coefficient	$I_{OUT} = 30mA, -40^\circ C \leq T_A \leq +85^\circ C$	—	<b><math>\pm 100</math></b>	—	ppm/ $^\circ C$	
$I_{SHORT}$	Short Current Limit	$V_{OUT} = 0V$	—	50	—	mA	
$t_{SS}$	Soft Start Time	—	—	50	—	$\mu s$	
$V_{NOISE}$	RMS Output Noise	$T_A = +25^\circ C, 10Hz \leq f \leq 100kHz,$ $V_{OUT} = 0.8V$	—	60	—	$\mu V_{RMS}$	
—	Shutdown High Voltage	Shutdown Input Voltage High	<b>1.5</b>	—	—	V	
—	Shutdown Low Voltage	Shutdown Input Voltage Low	—	—	<b>0.5</b>	V	
—	$V_{OUT}$ Discharge MOSFET $R_{DS(ON)}$	Shutdown Input Voltage Low	—	60	—	$\Omega$	
—	Shutdown Pull Down Resistance	—	—	3	—	M $\Omega$	
—	Thermal Shutdown	—	—	+165	—	$^\circ C$	
—	Thermal Shutdown Hysteresis	—	—	+30	—		
$\theta_{JC}$	Thermal Resistance	SOT-23	—	100	—	$^\circ C/W$	
		SOT-23-3	—	150	—		
		SOT-23-5	—	150	—		
		SOT-89	—	75	—		

**Performance Characteristics (Note 5)**

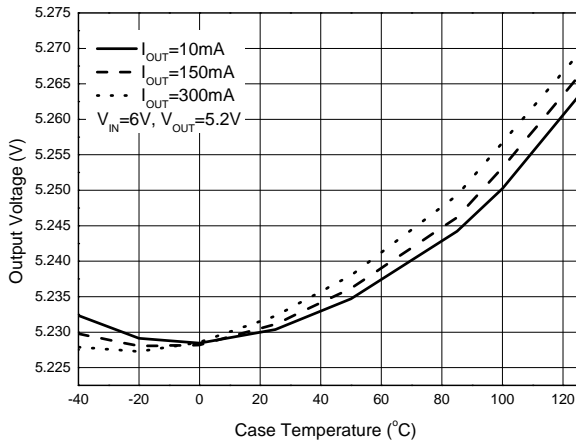
**Output Voltage vs. Case Temperature**



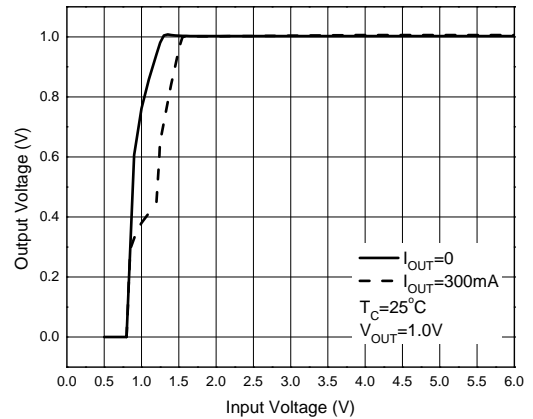
**Output Voltage vs. Case Temperature**



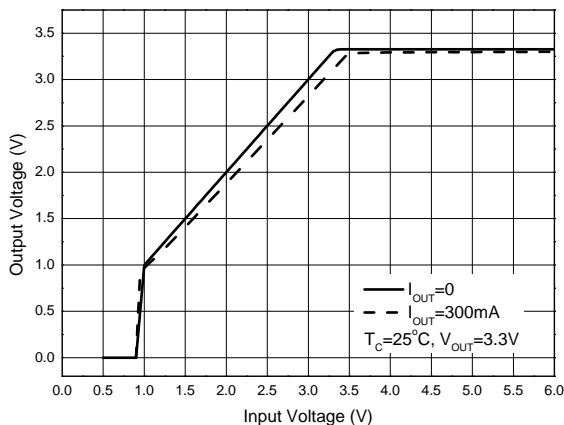
**Output Voltage vs. Case Temperature**



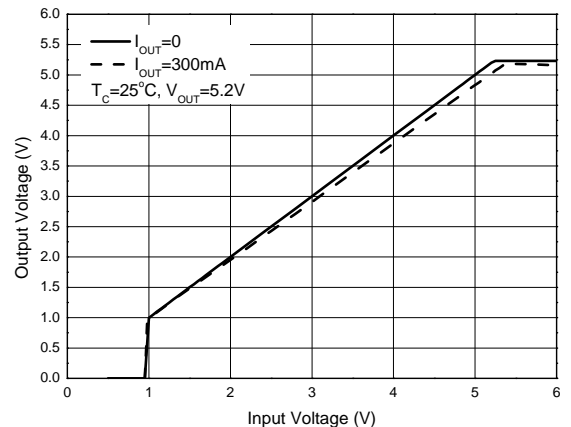
**Output Voltage vs. Input Voltage**



**Output Voltage vs. Input Voltage**



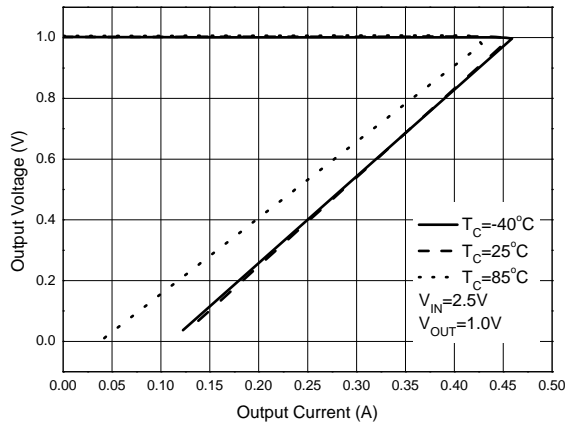
**Output Voltage vs. Input Voltage**



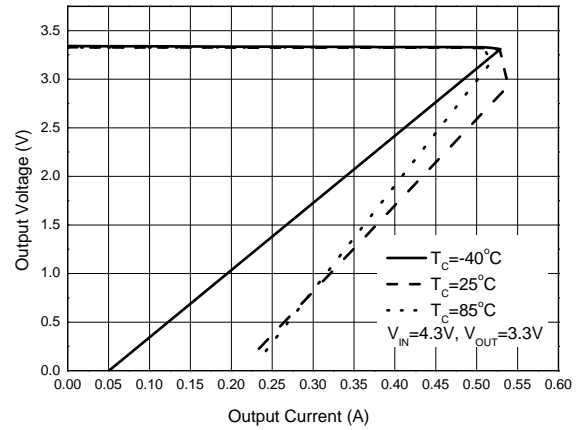
Note 5: Maximum output of 4.75V passed qualification test. Performance Characteristics for 5.2V are for reference only.

**Performance Characteristics (Cont.) (Note 5)**

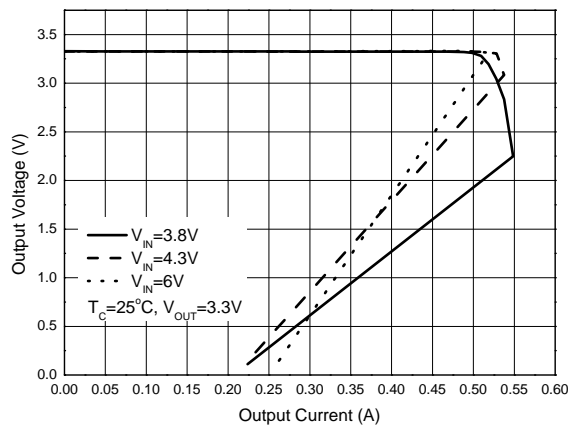
**Output Voltage vs. Output Current**



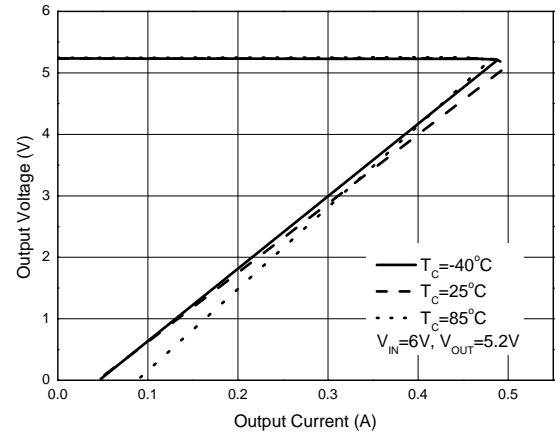
**Output Voltage vs. Output Current**



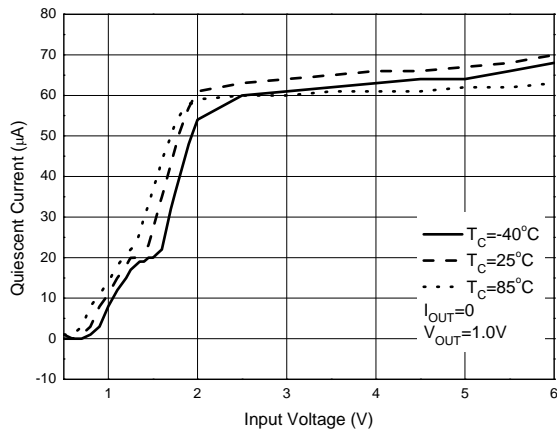
**Output Voltage vs. Output Current**



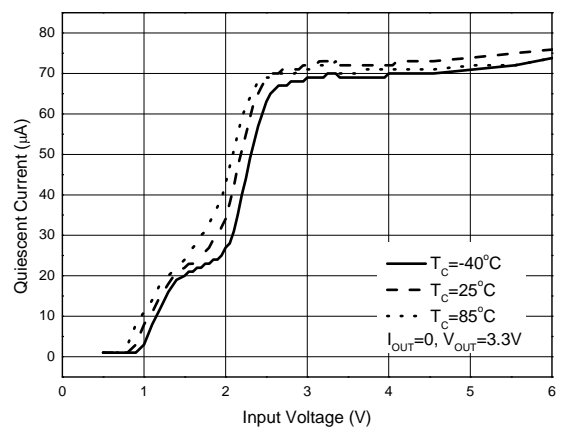
**Output Voltage vs. Output Current**



**Quiescent Current vs. Input Voltage**



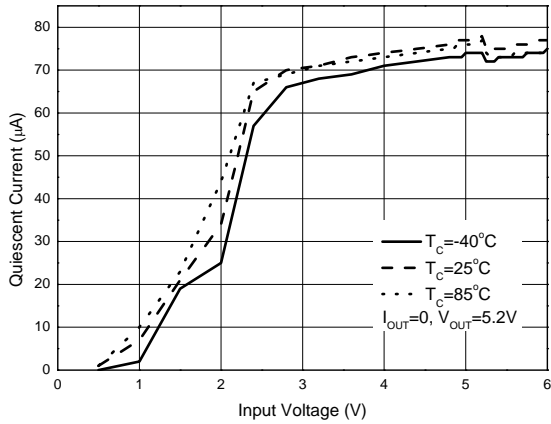
**Quiescent Current vs. Input Voltage**



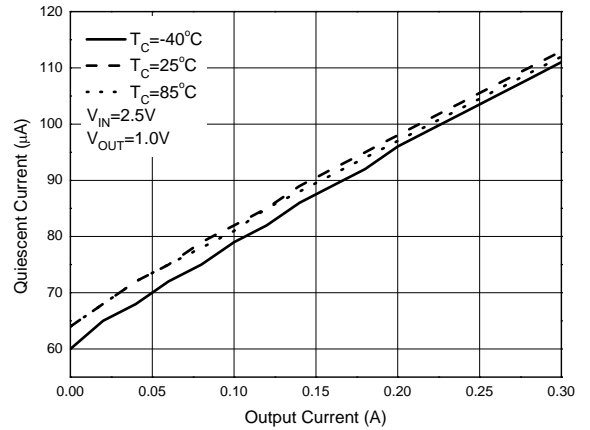
Note 5: Maximum output of 4.75V passed qualification test. Performance Characteristics for 5.2V are for reference only.

**Performance Characteristics (Cont.) (Note 5)**

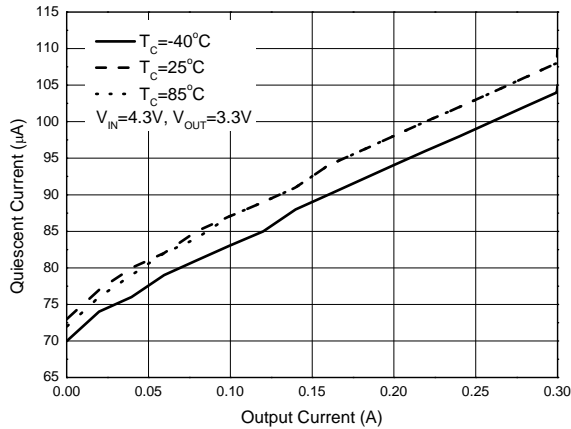
**Quiescent Current vs. Input Voltage**



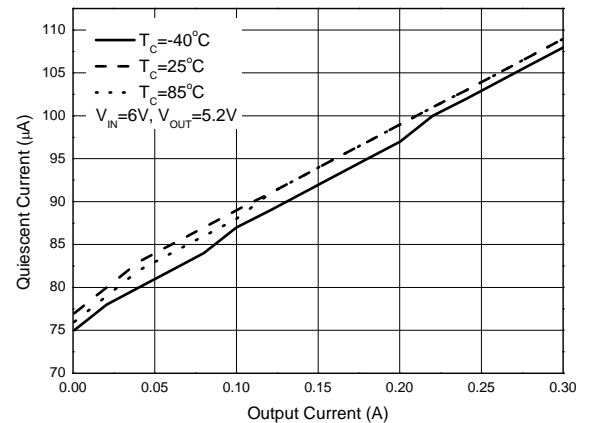
**Quiescent Current vs. Output Current**



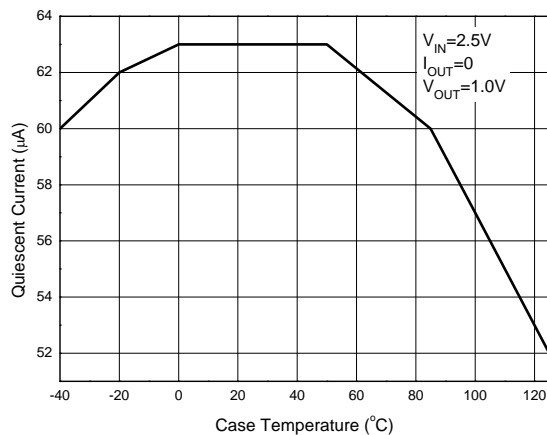
**Quiescent Current vs. Output Current**



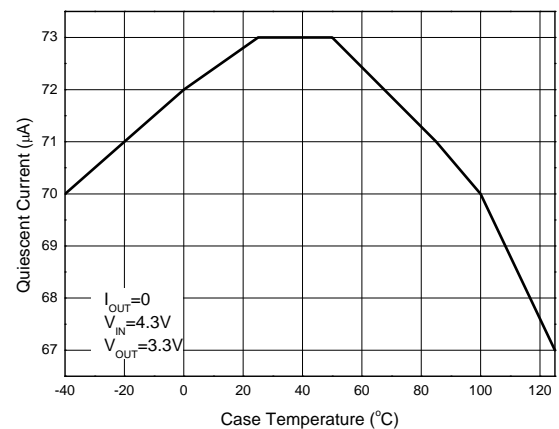
**Quiescent Current vs. Output Current**



**Quiescent Current vs. Case Temperature**



**Quiescent Current vs. Case Temperature**

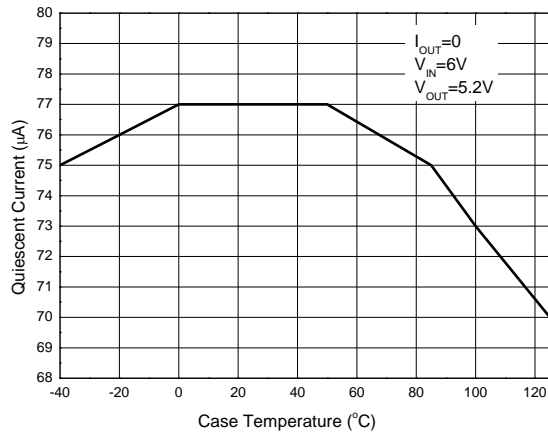


Note 5: Maximum output of 4.75V passed qualification test. Performance Characteristics for 5.2V are for reference only.

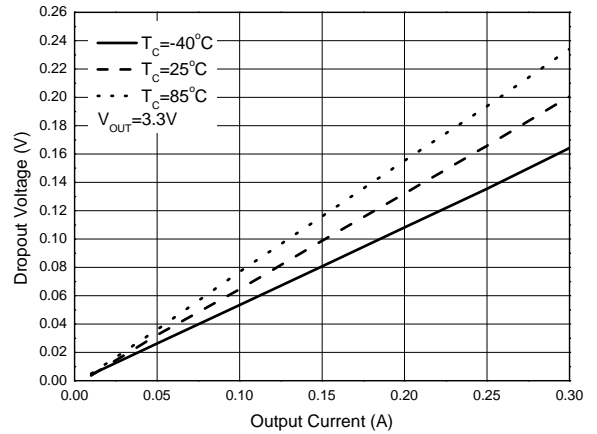


**Performance Characteristics (Cont.) (Note 5)**

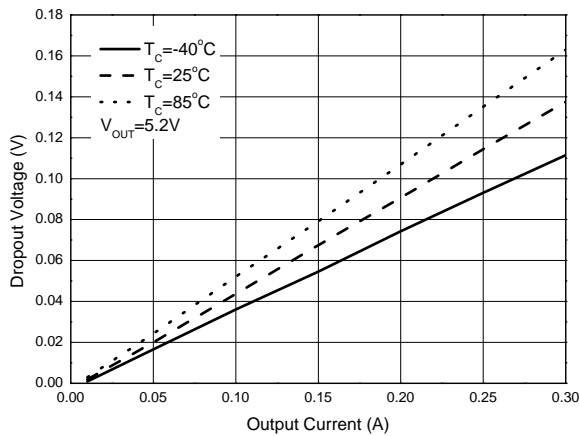
**Quiescent Current vs. Case Temperature**



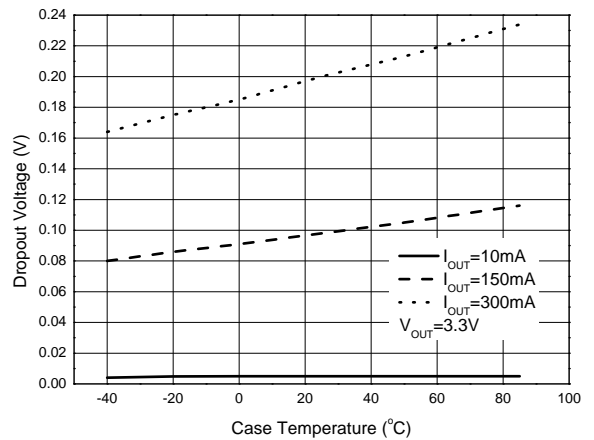
**Dropout Voltage vs. Output Current**



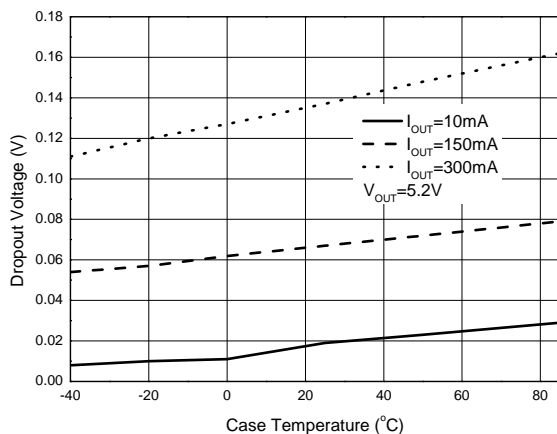
**Dropout Voltage vs. Output Current**



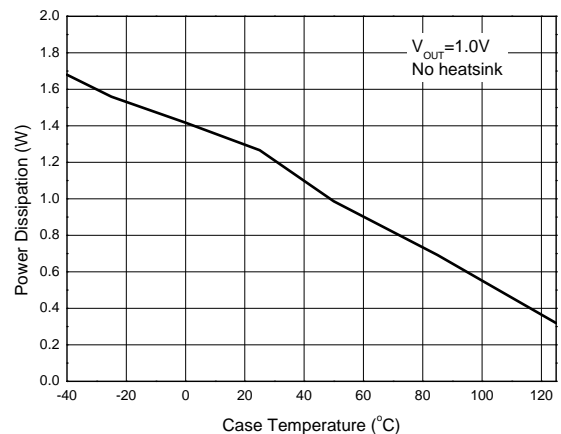
**Dropout Voltage vs. Case Temperature**



**Dropout Voltage vs. Case Temperature**



**Power Dissipation vs. Case Temperature**

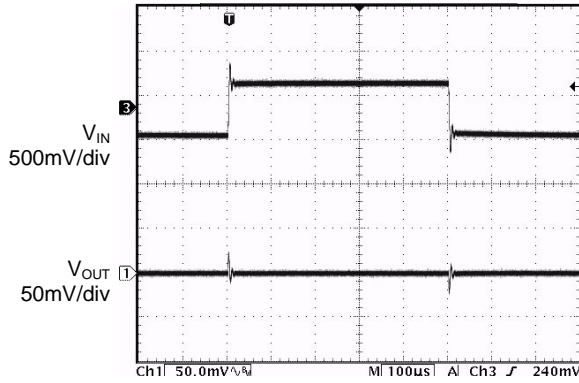


Note 5: Maximum output of 4.75V passed qualification test. Performance Characteristics for 5.2V are for reference only.

**Performance Characteristics** (Cont.) (Note 5)

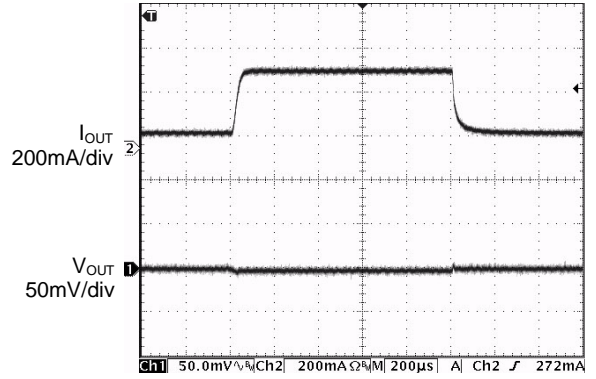
**Line Transient**

(Condition:  $C_{IN} = C_{OUT} = 1\mu F$ ,  $I_{OUT} = 10mA$ ,  $V_{IN} = 2.5V$  to  $3.3V$ ,  $V_{OUT} = 1V$ )



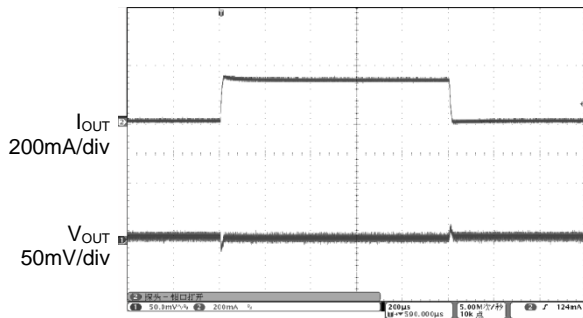
**Load Transient**

(Condition:  $C_{IN} = C_{OUT} = 1\mu F$ , Slew Rate =  $20mA/\mu s$ ,  $V_{IN} = 2.5V$ ,  $V_{OUT} = 1V$ ,  $I_{OUT} = 10mA$  to  $300mA$ )



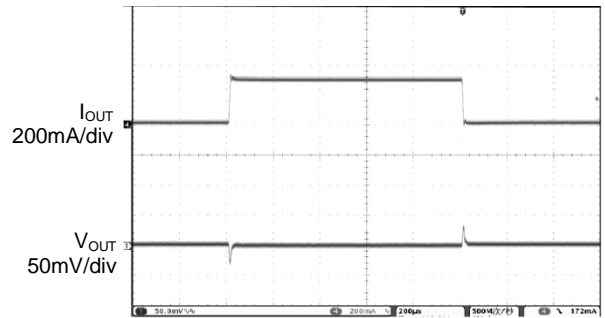
**Load Transient**

(Condition:  $C_{IN} = C_{OUT} = 1\mu F$ ,  $I_{OUT} = 10mA$  to  $300mA$ ,  $V_{IN} = 4.3V$ ,  $V_{OUT} = 3.3V$ )



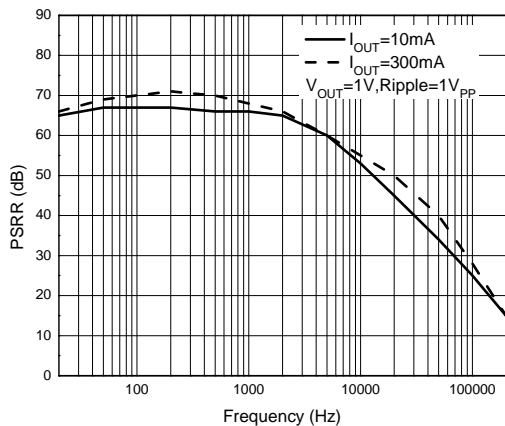
**Load Transient**

(Condition:  $C_{IN} = C_{OUT} = 1\mu F$ , Slew Rate =  $20mA/\mu s$ ,  $V_{IN} = 6V$ ,  $V_{OUT} = 5.2V$ ,  $I_{OUT} = 10mA$  to  $300mA$ )



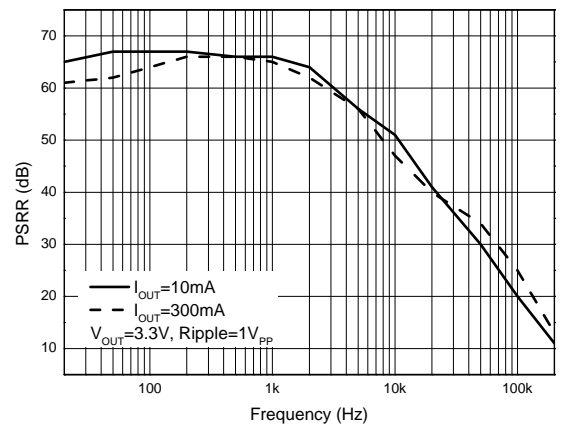
**PSRR vs. Frequency**

(Condition:  $C_{IN} = C_{OUT} = 1\mu F$ ,  $V_{IN} = 2.5V$ ,  $V_{OUT} = 1V$ , Ripple =  $1V_{PP}$ )



**PSRR vs. Frequency**

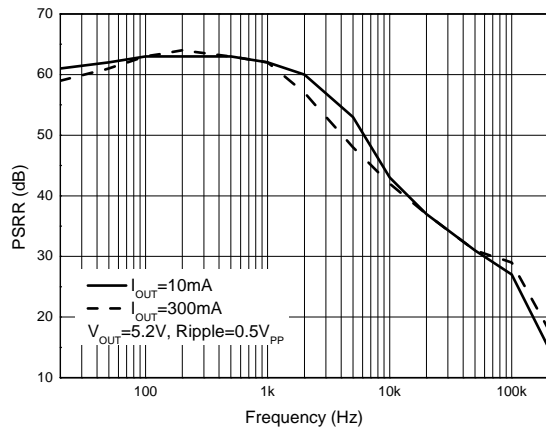
(Condition:  $C_{IN} = C_{OUT} = 1\mu F$ ,  $V_{IN} = 4.3V$ ,  $V_{OUT} = 3.3V$ , Ripple =  $1V_{PP}$ )



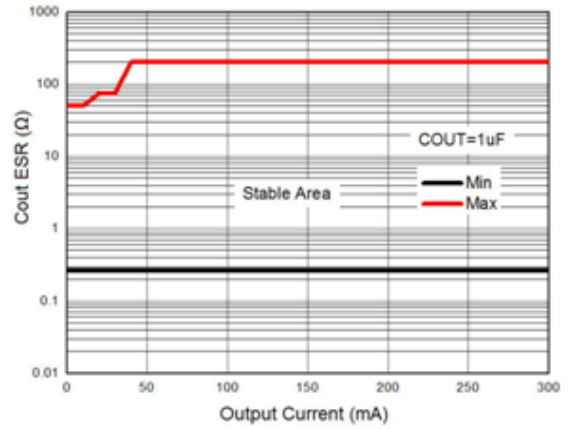
Note 5: Maximum output of 4.75V passed qualification test. Performance Characteristics for 5.2V are for reference only.

**Performance Characteristics** (Cont.) (Note 5)

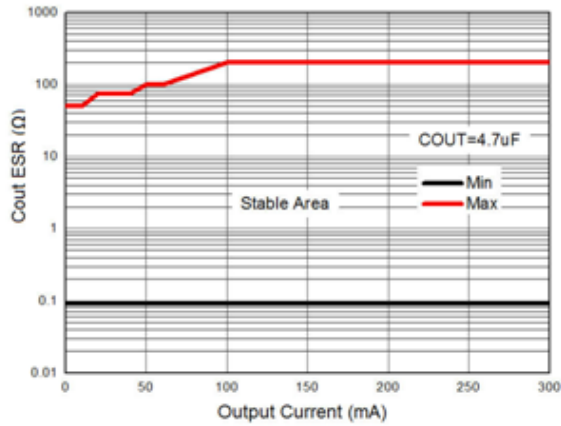
**PSRR vs. Frequency**  
(Condition:  $C_{IN}=C_{OUT}=1\mu F$ ,  $V_{IN}=6V$ ,  $V_{OUT}=5.2V$ ,  
Ripple=0.5V<sub>PP</sub>)



**Region of Stable C<sub>OUT</sub> ESR vs. Output Current (C<sub>OUT</sub> = 1μF)**



**Region of Stable C<sub>OUT</sub> ESR vs. Output Current (C<sub>OUT</sub> = 4.7μF)**



Note 5: Maximum output of 4.75V passed qualification test. Performance Characteristics for 5.2V are for reference only.

## Application Notes

### Input Capacitor

A 1µF ceramic capacitor is recommended to connect between VIN and GND pins to decouple input power supply glitch and noise. The amount of the capacitance may be increased without limit. This input capacitor must be located as close as possible to the device to assure input stability and less noise. For PCB layout, a wide copper trace is required for both VIN and GND.

### Output Capacitor

The output capacitor is required to stabilize and help transient response for LDO. The AP2127 is stable with very small ceramic output capacitor with a low ESR 1µF or higher of X7R or X5R MLCC capacitor, which will be sufficient at full temperature ranges. Additional capacitance helps to reduce undershoot and overshoot during transient. Place output capacitor as close as possible to VOUT and GND pins, and keep the leads as short as possible.

### Adjustable Operation

For adjustable version, the output voltage is calculated by:

$$V_{OUT} = V_{REF} \left( 1 + \frac{R_1}{R_2} \right)$$

Where  $V_{REF} = 0.8V$  (the internal reference voltage)

Rearranging the equation will give the following that is used for adjusting the output to a particular voltage:

$$R_1 = R_2 \left( \frac{V_{OUT}}{V_{REF}} - 1 \right)$$

For AP2127, the resistor at the low side ( $R_2$ ) can be selected from 5kΩ to 200kΩ.

In order to improve the stability and to decrease the noise level of the adjustable version, a feed-forward capacitor is suggested to be placed between VOUT and ADJ pins (Figure 1). It's recommended that this feed-forward capacitor value can be calculated as:

$$0.7kHz \leq \frac{1}{2\pi \times R_1 \times C_{ff}} \leq 15kHz$$

The recommended value of the feed-forward capacitor for different resistor divider ratios is shown in the table below.

Output Voltage	R1	R2	C <sub>ff</sub>
1.2V	7.5kΩ	15kΩ	2.7nF
1.6V	7.5kΩ	7.5kΩ	2.7nF
1.8V	22.5kΩ	18kΩ	1nF
1.9V	7.5kΩ	5.49kΩ	2.7nF
2.5V	38.3kΩ	18kΩ	560pF
3.3V	56.2kΩ	18kΩ	390pF
4.0V	120kΩ	30.1kΩ	180pF

Table 1. Output Voltage Setting Guide

**Application Notes** (Cont.)

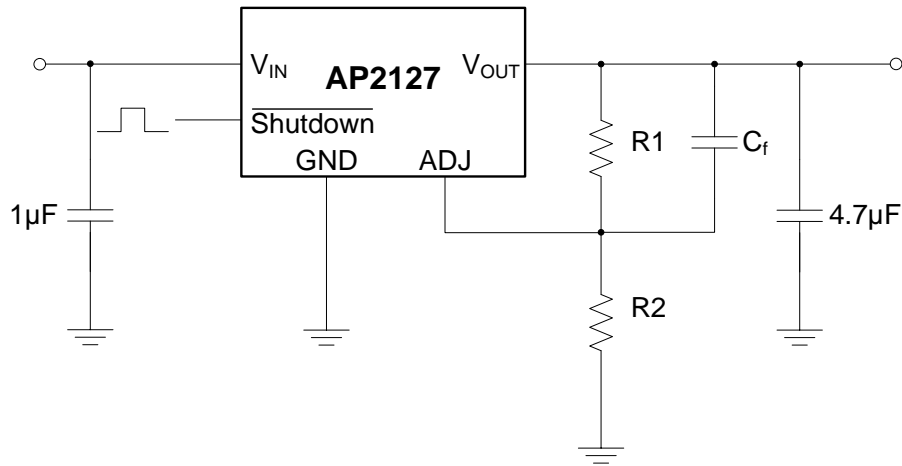


Figure 1. Application Circuit with Feed-forward Capacitor

**Current Limit Protection**

When output current at VOUT pin is higher than current limit threshold, the current limit protection will be triggered and clamp the output current to prevent over-current and to protect the regulator and load from damaged due to overheating.

**Short Circuit Protection**

When VOUT pin is shorted to GND, short circuit protection will be triggered and clamp the output current to approximately 50mA.

**Auto discharge with Shutdown Version**

For shutdown version, an auto discharge MOSFET with  $R_{DS(ON)}$  of 60Ω typical is integrated between VOUT and GND pins, which can discharge the charge of the output capacitors quickly when turning off AP2127 with Shutdown pin.

**Thermal Consideration**

Internal thermal protection circuitry of AP2127 is used to protect device during overload conditions. For continuous operation, ensure not to exceed the operating junction temperature range of +125°C.

The power dissipation definition in the device is:

$$P_D = (V_{IN} - V_{OUT}) \times I_{OUT} + V_{IN} \times I_Q$$

The maximum power dissipation depends on the thermal resistance of IC package, PCB layout and the surrounding airflow. The maximum power dissipation can also be calculated as:

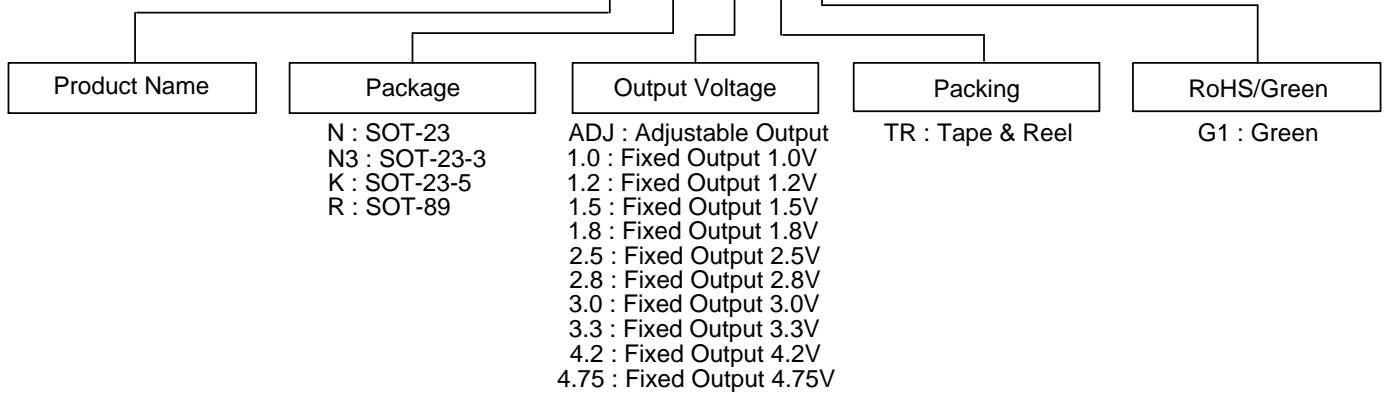
$$P_{D(MAX)} = (T_{J(MAX)} - T_A) / \theta_{JA}$$

The maximum power dissipation for SOT-23-5 package (least copper size) at  $T_A = +25^\circ\text{C}$  can be calculated as:

$$P_{D(MAX)} = (125^\circ\text{C} - 25^\circ\text{C}) / (250^\circ\text{C/W}) = 0.4\text{W}$$

## Ordering Information

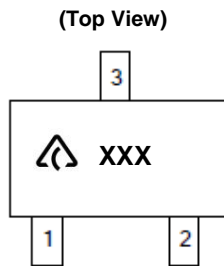
**AP2127 XX - XXX XX XX**




Part Number	Marking ID	Temperature Range	Package	Packaging
AP2127N-1.0TRG1	GU8	-40°C to +85°C	SOT-23	3000/Tape & Reel
AP2127N-1.2TRG1	GS8			3000/Tape & Reel
AP2127N-1.5TRG1	GV8			3000/Tape & Reel
AP2127N-1.8TRG1	GW8			3000/Tape & Reel
AP2127N-2.5TRG1	GT9			3000/Tape & Reel
AP2127N-2.8TRG1	GU9			3000/Tape & Reel
AP2127N-3.0TRG1	GV9			3000/Tape & Reel
AP2127N-3.3TRG1	GW9			3000/Tape & Reel
AP2127N3-1.2TRG1	GU2			SOT-23-3
AP2127N3-1.5TRG1	GU3		3000/Tape & Reel	
AP2127K-ADJTRG1	GEH		SOT-23-5	3000/Tape & Reel
AP2127K-1.0TRG1	GEG			3000/Tape & Reel
AP2127K-1.2TRG1	GEI			3000/Tape & Reel
AP2127K-1.5TRG1	GEP			3000/Tape & Reel
AP2127K-1.8TRG1	GEQ			3000/Tape & Reel
AP2127K-2.5TRG1	GER			3000/Tape & Reel
AP2127K-2.8TRG1	GES			3000/Tape & Reel
AP2127K-3.0TRG1	GHF			3000/Tape & Reel
AP2127K-3.3TRG1	GET			3000/Tape & Reel
AP2127K-4.2TRG1	GEU			3000/Tape & Reel
AP2127K-4.75TRG1	GEZ	3000/Tape & Reel		
AP2127R-3.3TRG1	G42P	SOT-89		1000/Tape & Reel

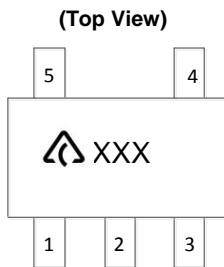
## Marking Information


(1) SOT-23, SOT-23-3

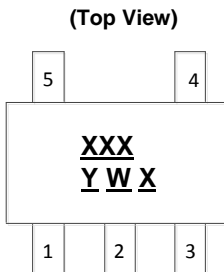


 : Logo  
XXX : Marking ID (See Ordering Information)

(2) SOT-23-5

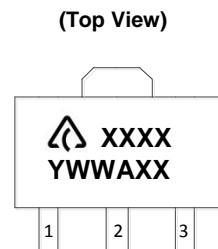


 : Logo  
XXX : Marking ID (See Ordering Information)



XXX : Marking ID (See Ordering Information)  
Y : Year 0 to 9  
W : Week : A to Z : 1 to 26 week;  
a to z : 27 to 52 week; z represents  
52 and 53 week  
X : Internal Code

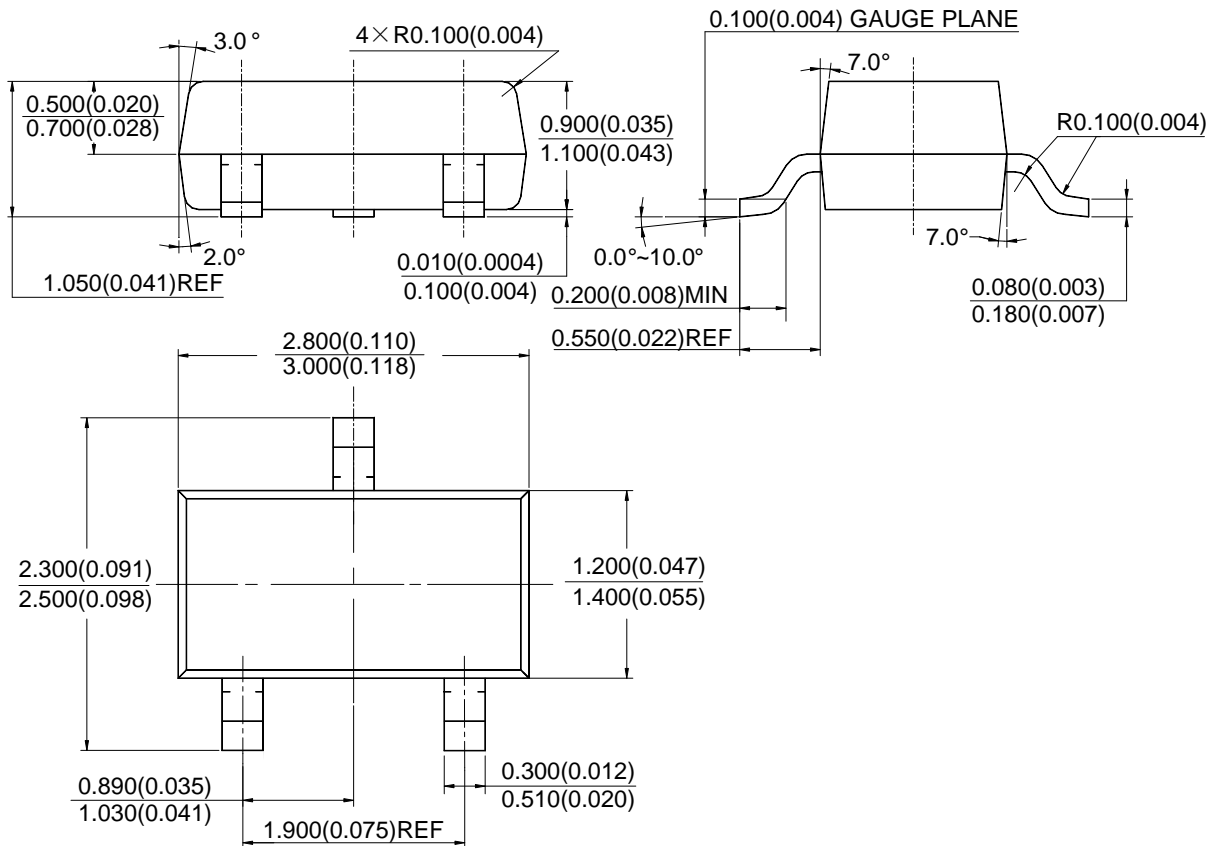
(3) SOT-89



First Line: Logo and Marking ID (See Ordering Information)  
Second Line: Date Code  
Y: Year  
WW: Work Week of Molding  
A: Assembly House Code  
XX: 7th and 8th Digits of Batch Number

**Package Outline Dimensions** (All dimensions in mm.)

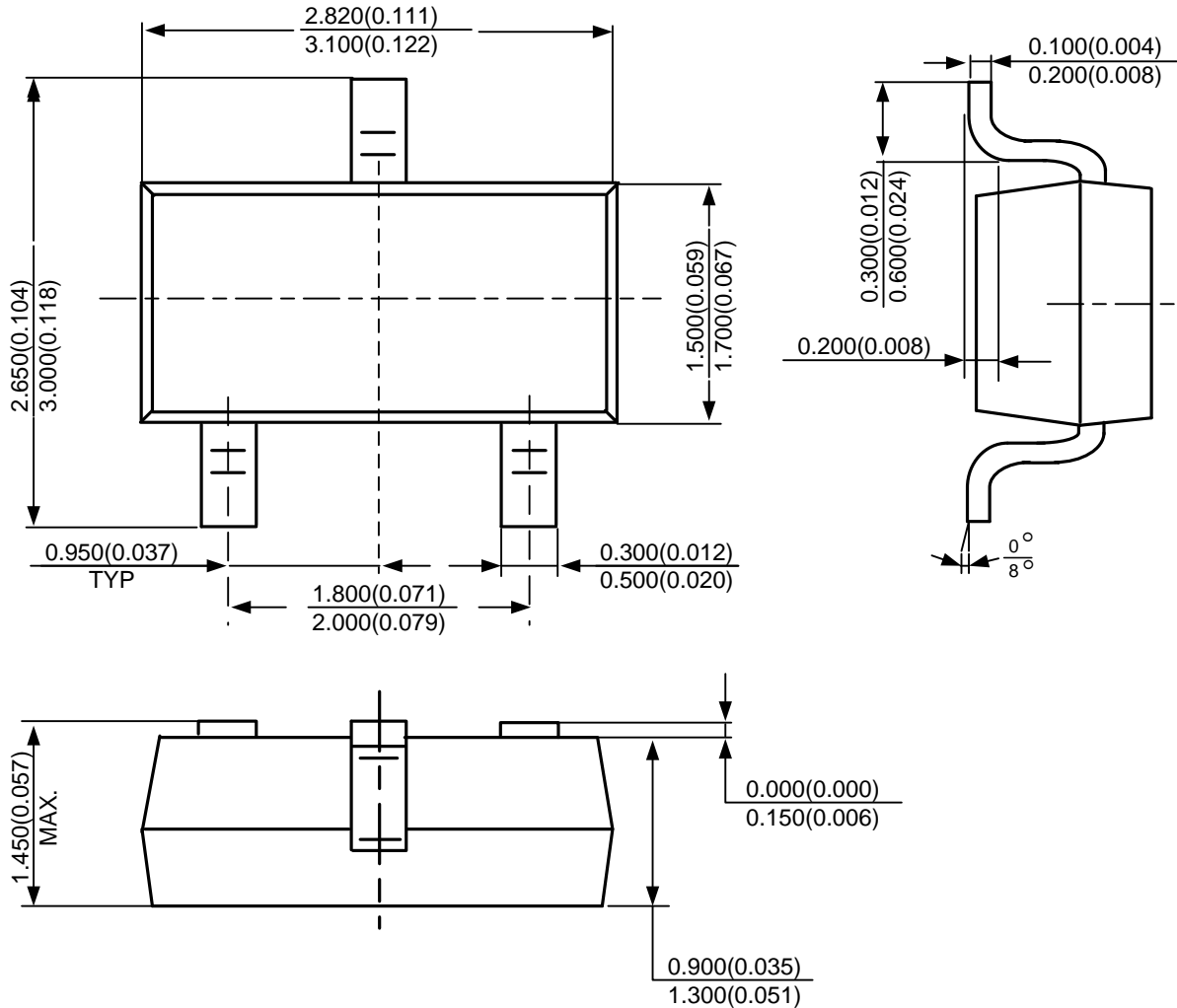
(1) Package Type: SOT-23





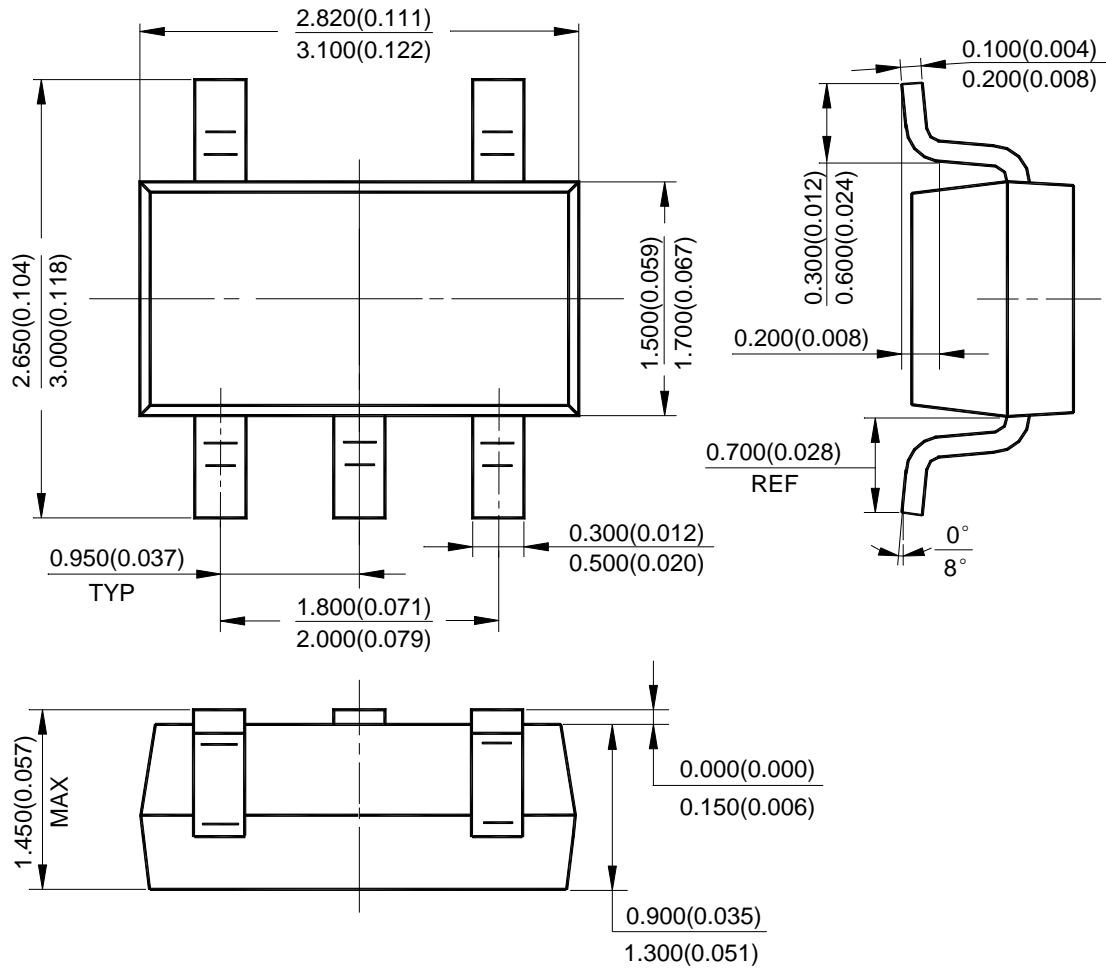
**Package Outline Dimensions** (Cont.) (All dimensions in mm.)

(2) Package Type: SOT-23-3



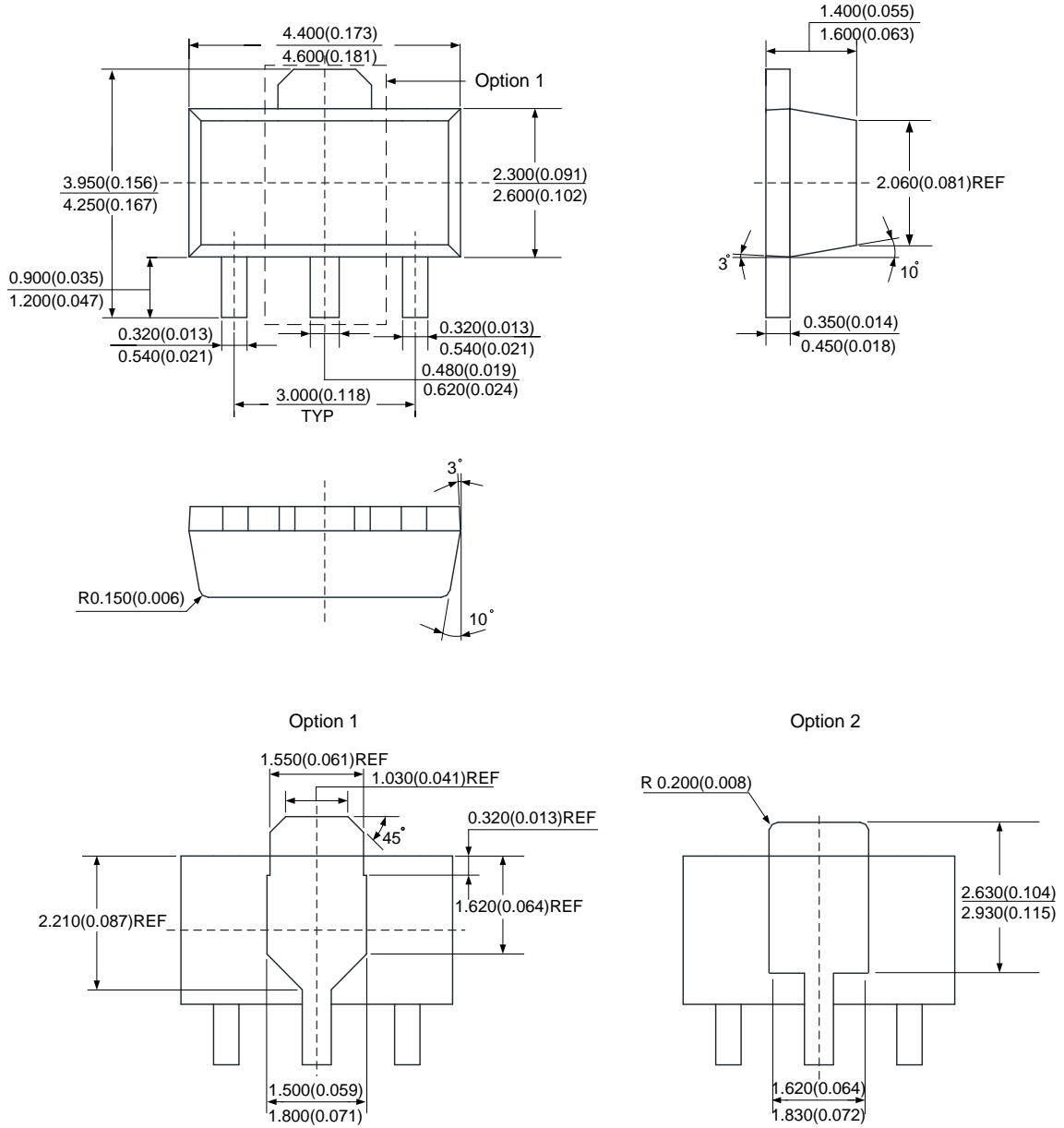
**Package Outline Dimensions** (Cont.) (All dimensions in mm.)

(3) Package Type: SOT-23-5



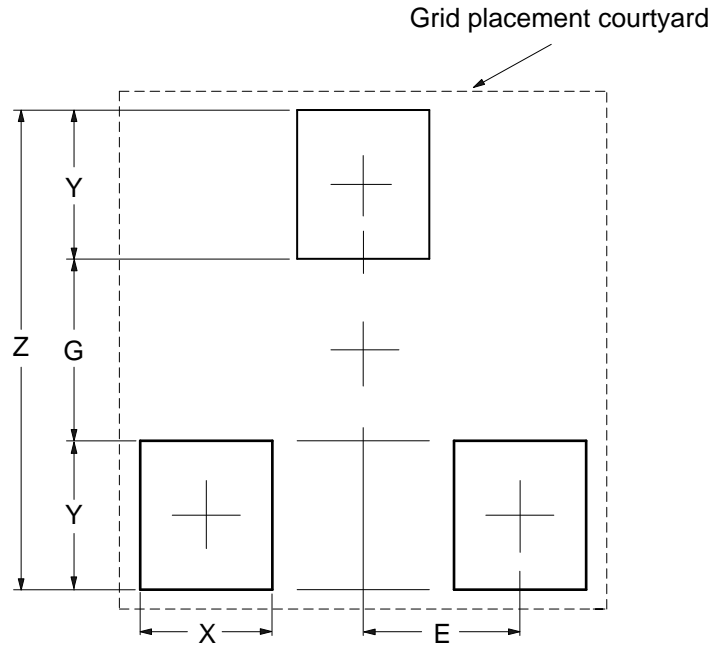
**Package Outline Dimensions** (Cont.) (All dimensions in mm.)

(4) Package Type: SOT-89



**Suggested Pad Layout**

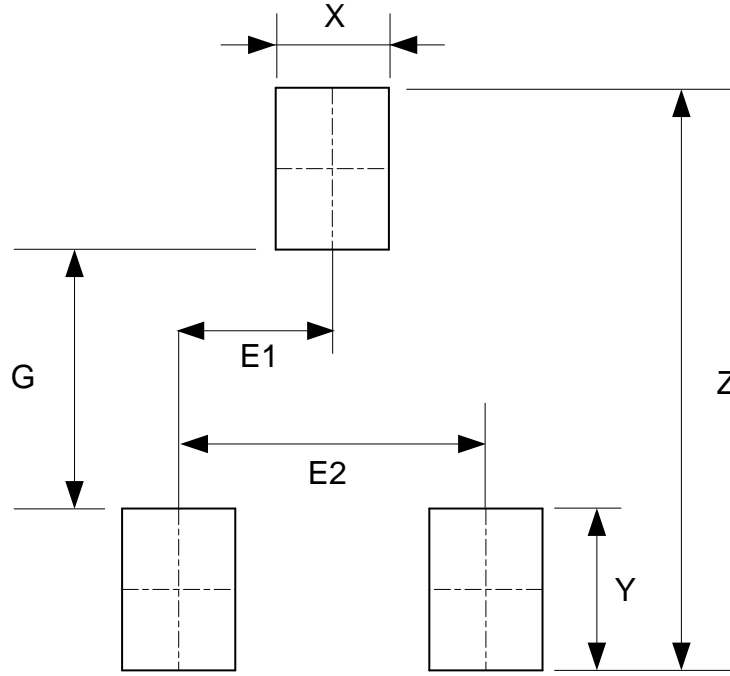
(1) Package Type: SOT-23



Dimensions	Z (mm)/(inch)	G (mm)/(inch)	X (mm)/(inch)	Y (mm)/(inch)	E (mm)/(inch)
Value	2.900/0.114	1.100/0.043	0.800/0.031	0.900/0.035	0.950/0.037

**Suggested Pad Layout (Cont.)**

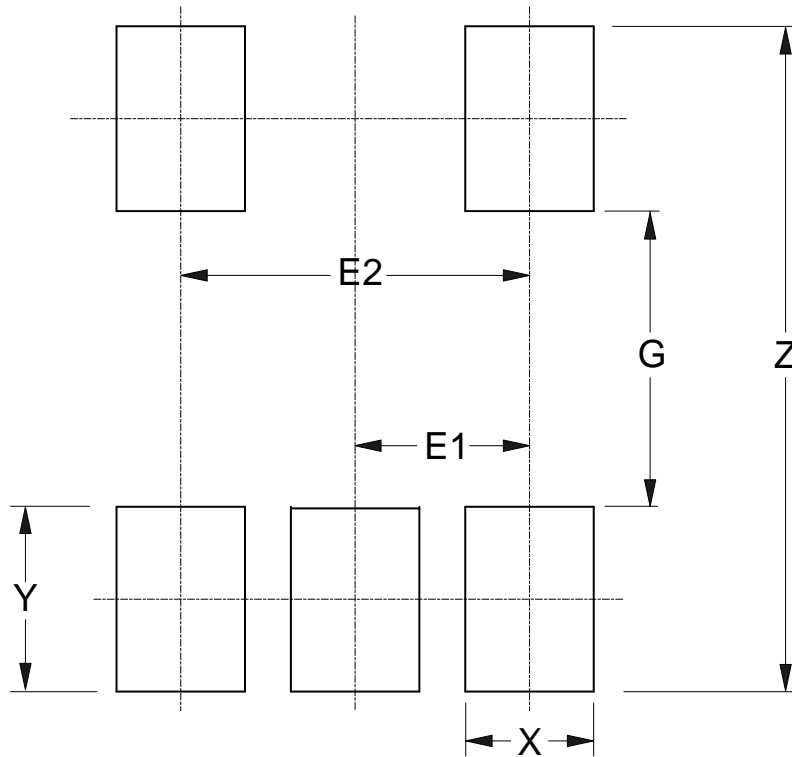
(2) Package Type: SOT-23-3



Dimensions	Z (mm)/(inch)	G (mm)/(inch)	X (mm)/(inch)	Y (mm)/(inch)	E1 (mm)/(inch)	E2 (mm)/(inch)
Value	3.600/0.142	1.600/0.063	0.700/0.028	1.000/0.039	0.950/0.037	1.900/0.075

**Suggested Pad Layout** (Cont.)

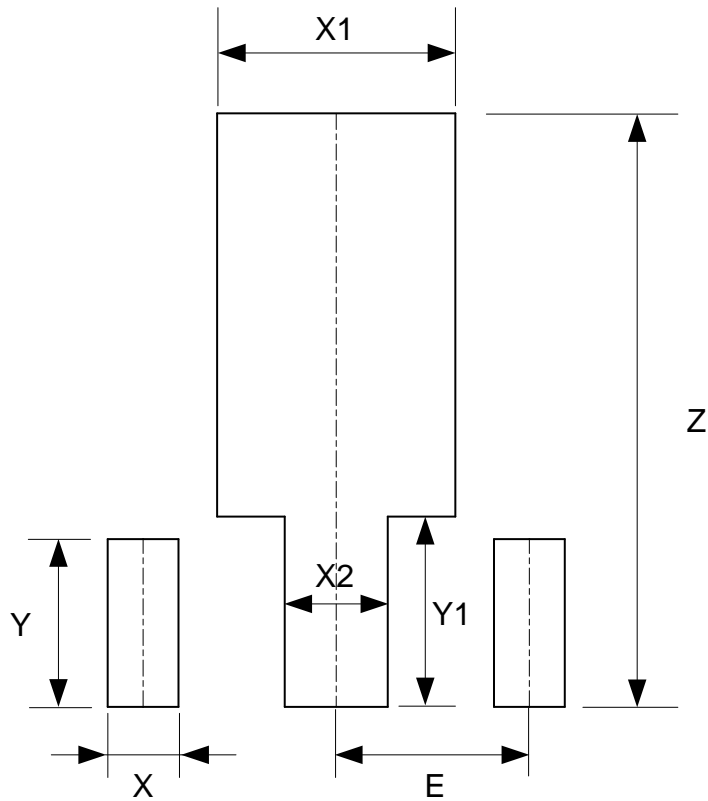
(3) Package Type: SOT-23-5



Dimensions	Z (mm)/(inch)	G (mm)/(inch)	X (mm)/(inch)	Y (mm)/(inch)	E1 (mm)/(inch)	E2 (mm)/(inch)
Value	3.600/0.142	1.600/0.063	0.700/0.028	1.000/0.039	0.950/0.037	1.900/0.075

**Suggested Pad Layout** (Cont.)

(4) Package Type: SOT-89



Dimensions	Z (mm)/(inch)	X (mm)/(inch)	X1 (mm)/(inch)	X2 (mm)/(inch)	Y (mm)/(inch)	Y1 (mm)/(inch)	E (mm)/(inch)
Value	4.600/0.181	0.550/0.022	1.850/0.073	0.800/0.031	1.300/0.051	1.475/0.058	1.500/0.059

**IMPORTANT NOTICE**

DIODES INCORPORATED MAKES NO WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, WITH REGARDS TO THIS DOCUMENT, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE (AND THEIR EQUIVALENTS UNDER THE LAWS OF ANY JURISDICTION).

Diodes Incorporated and its subsidiaries reserve the right to make modifications, enhancements, improvements, corrections or other changes without further notice to this document and any product described herein. Diodes Incorporated does not assume any liability arising out of the application or use of this document or any product described herein; neither does Diodes Incorporated convey any license under its patent or trademark rights, nor the rights of others. Any Customer or user of this document or products described herein in such applications shall assume all risks of such use and will agree to hold Diodes Incorporated and all the companies whose products are represented on Diodes Incorporated website, harmless against all damages.

Diodes Incorporated does not warrant or accept any liability whatsoever in respect of any products purchased through unauthorized sales channel. Should Customers purchase or use Diodes Incorporated products for any unintended or unauthorized application, Customers shall indemnify and hold Diodes Incorporated and its representatives harmless against all claims, damages, expenses, and attorney fees arising out of, directly or indirectly, any claim of personal injury or death associated with such unintended or unauthorized application.

Products described herein may be covered by one or more United States, international or foreign patents pending. Product names and markings noted herein may also be covered by one or more United States, international or foreign trademarks.

This document is written in English but may be translated into multiple languages for reference. Only the English version of this document is the final and determinative format released by Diodes Incorporated.

**LIFE SUPPORT**

Diodes Incorporated products are specifically not authorized for use as critical components in life support devices or systems without the express written approval of the Chief Executive Officer of Diodes Incorporated. As used herein:

A. Life support devices or systems are devices or systems which:

1. are intended to implant into the body, or
2. support or sustain life and whose failure to perform when properly used in accordance with instructions for use provided in the labeling can be reasonably expected to result in significant injury to the user.

B. A critical component is any component in a life support device or system whose failure to perform can be reasonably expected to cause the failure of the life support device or to affect its safety or effectiveness.

Customers represent that they have all necessary expertise in the safety and regulatory ramifications of their life support devices or systems, and acknowledge and agree that they are solely responsible for all legal, regulatory and safety-related requirements concerning their products and any use of Diodes Incorporated products in such safety-critical, life support devices or systems, notwithstanding any devices- or systems-related information or support that may be provided by Diodes Incorporated. Further, Customers must fully indemnify Diodes Incorporated and its representatives against any damages arising out of the use of Diodes Incorporated products in such safety-critical, life support devices or systems.

Copyright © 2017, Diodes Incorporated

[www.diodes.com](http://www.diodes.com)



# 深圳市致新科科技有限公司

## Shenzhen Zhixinke Technology Co., Ltd.



### 阻容器件

插件电解电容 贴片电阻	贴片铝电解电容 热敏电阻	贴片电容 MLCC 压敏电阻	钽电容 碳膜电阻	薄膜电容 金属膜电阻
----------------	-----------------	-------------------	-------------	---------------

### 高压MOS (N-400V N-500V N-600V N-650V N-700V N-800V N-900V / 电流: 0.5A~26A区间 电压电流选型)

2N65 650V 2A TO-252	7N60 600V 7A TO-252	8N65 650V 8A TO-251	10N50 500V 10A TO-220F	15N50 500V 15A TO-220F
4N65 650V 4A TO-220F	7N65 650V 7A TO-220F	8N65 650V 8A TO-252	12N65 650V 12A TO-220F	15N65 650V 15A TO-220F
5N60 600V 5A TO-220F	7N65 650V 7A TO-252	8N65 650V 8A TO-252	12N70 700V 12A TO-220F	15N70 700V 10A TO-220F
5N65 650V 5A TO-252	7N70 700V 7A TO-220F	9N70 700V 9A TO-252	13N50 500V 13A TO-220F	20N50 500V 20A TO-220F

### 低压MOS (电流: -160A~300A区间选型)

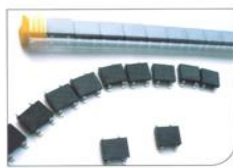
N+P 20V	P -100V	Dual N 30V	N 30V	N 75V
N+P 30V	P -12V	Dual N 100V	N 40V	N 85V
N+P 40V	P -16V	Dual N 20V	N 55V	N 100V
Dual P -30V	P -20V	Dual N 40V	N 60V	N 150V
Dual P -60V	P -40V	N 20V	N 68V	N 200V

### 二极管专业制造商 (定制产品, 需要一周~二周时间) 参数查看选型表

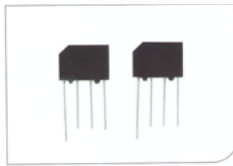
超低正向肖特基整流二极管	肖特基整流二极管	普通整流二极管	快恢复整流二极管	高效整流二极管
超快恢复整流二极管	双向触发二极管	瞬变电压抑制二极管	稳压二极管	桥式整流器
小信号肖特基二极管	小信号开关二极管	光伏二极管	汽车整流器	高压触发管

### 桥式整流器专业制造 (定制产品, 需要一周~二周时间)

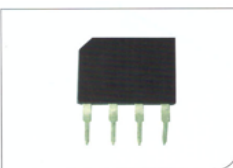
型号	芯片尺寸/类别	型号	芯片尺寸/类别
DB107S	50MIL DBS	GBU606-GBU610	88MIL GBU
DB157S	60MIL DBS	GBU806-GBU810	95MIL GBU
DB207S	60MIL DBS	GBU1006-GBU1010	100MIL GBU
DB307S	70MIL DBS	GBU1506-GBU1510	110MIL GBU
DB107	50MIL DB	GBU2506-GBU2510	130MIL GBU
DB157	60MIL DB	GBJ406-410	84MIL 4GBJ
DB207	60MIL DB	GBJ606-610	88MIL 4GBJ
DB307	70MIL DB	GBJ806-810	95MIL 4GBJ
KBP201-KBP210	50MIL KBP	GBJ1006-1010	100MIL 4GBJ
KBP301-KBP310	60MIL KBP	GBJ1506-1510	110MIL 4GBJ
KBP401-KBP410	70MIL KBP	GBJ2506-2510	130MIL 4GBJ
GBP2	50MIL GBP短脚	GBJ1506-1510	110MIL 6GBJ
GBP3	60MIL GBP短脚	GBJ1506-1510	120MIL 6GBJ
GBP3	70MIL GBP短脚	GBJ2506-2510	130MIL 6GBJ
GBP4	84MIL GBP短脚	GBJ3506-3510	140MIL 6GBJ
GBP6	88MIL GBP短脚	GBJ3506-3510	160MIL 6GBJ
GBP2	50MIL GBP长脚	KBJ406-410	84MIL KBJ (4GBJ)
GBP3	60MIL GBP长脚	KBJ606-610	88MIL KBJ (4GBJ)
GBP3	70MIL GBP长脚	KBJ806-810	95MIL KBJ (4GBJ)
GBP4	84MIL GBP长脚	KBJ1006-1010	100MIL KBJ (4GBJ)
GBP6	88MIL GBP长脚	KBJ1506-1510	110MIL KBJ (4GBJ)
D3K 2A	60MIL D3K	KBJ2506-2510	130MIL KBJ (4GBJ)
D3K 3A	70MIL D3K	MB6S-10S	46MIL MBS
D3K 4A	84MIL D3K	MB6S-10S	50MIL MBS
KBL406-410	70MIL KBL	MB6F-10F	46MIL MBF
KBL406-410	84MIL KBL	MB6F-10F	50MIL MBF
KBL606-610	88MIL KBL	ABS6-ABS10	46MIL ABS
GBU406-GBU410	70MIL GBU	ABS6-ABS10	50MIL ABS
GBU406-GBU410	84MIL GBU	ABS6-ABS10	60MIL ABS



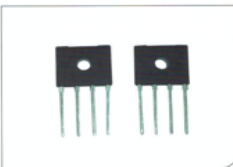
DB-S



KBP



GBP



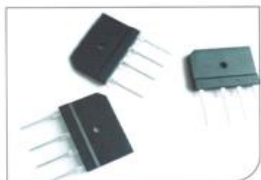
D3K



KBL



GBU



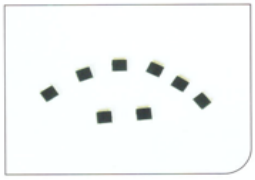
GBJ



KBJ



MDB-S



ABS

# 深圳市致新科科技有限公司

## Shenzhen Zhixinke Technology Co., Ltd.



### 光耦 红外对射

EL0631	EL814	LTV-217	KAQY212	MOC3022
EL1018	EL817	LTV-247	KMOC3021	MOC3023
EL1019	ELM440A	LTV-3063	KMOC3022	MOC3042
EL2501	ELM453	LTV-3223	KMOC3023	MOC3052
EL3041	ELM611	LTV-356	KMOC3041	MOC3063
EL3063	ELQ3H4	LTV-357	KMOC3042	MOC3043
EL354	ELQ3H7	LTV-814	KMOC3043	HS0038BD
EL357	ELR3223	LTV-816	KMOC3063	IR204C-A-L
EL3H4	ELS3120	LTV-817	KMOC3083	IR333C-A
EL3H7	ELS3150	CT3043	FOD814	ITR1100
EL406A	ELS680	CT3063	6N137	ITR8102
EL6N137	CT3023	CTT3223	MOC3021	ITR8402

### 长晶 JSCJ (原名长电)

1N4148WS	SOD323	BC547	T092	BZT52C3V6	SOD123	CJ431	SOT-23	MMBT3904	SOT23
2N5551	TO-92	BC548	T092	BZT52C3V9	SOD123	CJ7812	TO220-3L	MMBT540	SOT23
2SA1013	SOT89-3L	BCX56-16	SOT89-3L	BZT52C5V1	SOD123	CJ7815	TO252-2L	MMBTA44	SOT-23
2SB1386	SOT89	BD237	TO126	BZT52C6V2	SOD123	CJ78L05	SOT89	MMBTA94	SOT23
2SC1623	SOT23	BSS123	SOT23	BZT52C6V8S	SOD323	CJ78L08	SOT89	MMSZ4689	SOD123
2SC1815	TO92	BU406	TO220-3L	BZT52C8V2	SOD123	CJ78L12	SOT89	RS3M	SMBG
2SC2712	SOT-23	BZT52C10	SOD123	BZX84C15	SOT23	CJ78M05	TO252	S8050	SOT23
2SD1724	TO-126	BZT52C12	SOD123	C1815	TO92F	CJ78M06	TO252	S8550	SOT23
2SD965A	SOT89	BZT52C15	SOD123	CJ2301	SOT23	CJ78M12	TO252	S9012	SOT23
B0530WS	SOD323	BZT52C18	SOD123	CJ2302	SOT23-3	CJ79L05	TO92	S9013	SOT23
B5819W	SOD123	BZT52C22S	SOD323	CJ2304	SOT-23	D882	TO126	S9014	SOT23
BAT54	SOT23-3	BZT52C24V	SOD123	CJ2306	SOT23	ES2J	SMAG	S9015	SOT23
BAV99	SOT23	BZT52C30	SOD123	CJ2310	SOT23	LM317	SOT223	SD103AW	SOD123
BC546B	TO92	BZT52C3V3	SOD123	CJ3415	SOT23-3	MCR100-8	TO92	TIP122	TO126

### 圣邦微 (SGMICRO)

SGM2019	SGM3110-5.0YN6/TR	SGM4056-6.8YPS8G/TR	SGM6232YPS8G/TR	SGM809
SGM2021	SGM3132YDE8G/TR	SGM4056-6.8YTDE8G/TR	SGM6603	SGM810
SGM2032	SGM3157YC6/TR	SGM4062YDE8G/TR	SGM6609YTD12G/TR	SGM8272YS8G/TR
SGM2033	SGM3206YN5G/TR	SGM4064YDE8G/TR	SGM706	SGM8522XS/TR
SGM2036	SGM321YN5/TR	SGM44599YTQ16/TR	SGM721XN5/TR	SGM8582XS8G/TR
SGM2200	SGM324YS14/TR	SGM4582YTS16G/TR	SGM7222YMS10/TR	SGM8632XMS/TR
SGM2203	SGM330A-YQS/TR	SGM4807YTDE8G/TR	SGM7222YWQ10/TR	SGM8632XS/TR
SGM2268YWQ10/TR	SGM331A-YQS16G/TR	SGM4871YPS8/TR	SGM7227YMS10G/TR	SGM8634XS14/TR
SGM2549YN6G/TR	SGM358YMS/TR	SGM4890YMS/TR	SGM7227YUWQ10G/TR	SGM89000YTS14G/TR
SGM2551AYN5G/TR	SGM358YS/TR	SGM4891YDE8G/TR	SGM7228YWQ10G/TR	SGM8903YTS14G/TR
SGM2554AYN5G/TR	SGM3700YTQ16G/TR	SGM4917AYTQ16G/TR	SGM722XMS/TR	SGM8904YMS10G/TR
SGM2571ADYG/TR	SGM3732YTN6G/TR	SGM4918AYD10G/TR	SGM722XS/TR	SGM9111YC5/TR
SGM2576YN5G/TR	SGM3733BYTD16G/TR	SGM4996YMS8G/TR	SGM8051XN5/TR	SGM9114YN6G/TR
SGM2578YG/TR	SGM3752YTN6G/TR	SGM6012	SGM8054XS/TR	SGM9116XS/TR

### DIODES (美台) PAM 百利通 (pericom)

AL1666S-13	AL8863SP-13	APT17NTR-G1	PAM2861ABR	PAM8403DR-H
AL1692-30BS7-13	AP1084D25G-13	AS78L05RTR-E1	PAM2861CBR	PAM8404KGR
AL1692S-13	AP1084D33G-13	AZ1117	PAM2863ECR	PAM8406DR
AL1697-40DS7-13	AP1501-50K5G-13	AZ34063UMTR-G1	PAM8003DR	PAM8610TR
AL17050WT-7	AP1501-K5G-13	AZ431AN-ATRE1	PAM8004DR	PAM8620TR
AL3353S-13	AP1603WG-7	PAM2301CAABADJ	PAM8006ATR	PAM8902HKER
AL5812MP-13	AP2127K-ADJTRG1	PAM2305AABADJ	PAM8007NHR	PAM8904JER
AL8805W5-7	AP2204K-3.3TRG1	PAM2305CGFADJ	PAM8106TVR	PAM8908JER
AL8807W5-7	AP2204K-5.0TRG1	PAM2312AABADJ	PAM8124RHR	PAM8908JER
AL8808WT-7	AP2204K-ADJTRG1	PAM2401SCADJ	PAM8301AAF	PAM8945PJR
AL8843SP-13	AP2210N-3.3TRG1	PAM2421AECADJR	PAM8302AADCR	SMAJ5.0A-13-F
AL8860MP-13	AP3012KTR-G1	PAM2423AECADJR	PAM8302AASCR	ZXMP10A13FTA
AL8860WT-7	AP4310AMTR-G1	PAM2803AAF095	PAM8303DBSC	PT7C4302WEX
AL8861WT-7	AP4313KTR-G1	PAM2804AAB010	PAM8304ASR	PT7C4337UUX
AL8861Y-13	AP7333-33SAG-7	PAM2808BLBR	PAM8320RDR	PT7C4337WEX

# 深圳市致新科科技有限公司

## Shenzhen Zhixinke Technology Co., Ltd.



### 微盟 (Microne)

ME1117 MET1117	ME3116AM6G	ME431BXG	ME6210	ME8115BD7G
ME1502CM5G	ME321AM5G	ME6118A33B3G	ME6211	ME8115D7G
ME2107A50M5G	ME358ASG	ME6119C33M5G	ME6212	ME8125AS6G
ME2108	ME4054BM5G	ME6203A50M3G	ME6213C33M5G	ME8165GD8G
ME2188	ME4055AM6G	ME6206	ME6214C18M5G	ME8202SG
ME2214AM6G	ME4056SPG	ME6206A33M3G	ME6215C25M5G	ME8321AS7G
ME2807A30M3G	ME4074AM5G	ME6208	ME6216A30XG	ME8327BS7G-N
ME3102BM5G	ME4211AM6G	ME6209	ME6228	MEL7135PG-N
ME3110AM6G	ME4313CM6G	ME6209A50M3G	ME6230	MEL7136AP5G

### 恩智浦 (NXP) 安世半导体 (NXPERIA)

2N7002	74HC238PW	74HC574D	BCX51-16	HEF4094BT
74HC00D	74HC245D	74HC595D	BT137-800E	HEF4511BT
74HC04D	74HC245DB	74HC595N	BT139-800E	PCF8563T
74HC08D	74HC245N	74HC74D	BT151-500R	PCF8563T/5
74HC125D	74HC245PW	74HC86D	HEF4001BP	PCF8563TS/5
74HC138D	74HC257D	74HCT164D	HEF40106BP	PMBT3904
74HC138PW	74HC373N	74HCU04D	HEF4011BP	PMBT3906
74HC14D	74HC393D	BA591	HEF4011BT	PRTR5V0U2X
74HC154D	74HC4051D	BAT54	HEF4012BP	TJA1021T
74HC157D	74HC4051PW	BAV199	HEF4013BP	TJA1027T
74HC164D	74HC4066D	BAV99	HEF4013BT	TJA1040T
74HC164PW	74HC4316D	BC817-40	HEF4051BT	TJA1042T
74HC165D	74HC4538D	BC846B	HEF4069UBT	TJA1044T
74HC238D	74HC573D	BC858B	HEF4093BP	TJA1050T

### 德州仪器 (TIS)

CD14538BE	LM2576S	NE5532	SN74HC273	TLV75718PDBVR
CD4001BE	LM258DGKR	OP07CDR	SN74HC595	TLV75728PDBVR
CD40106BE	LM2596SX	OP07CP	SN74LVC1G08DCKR	TPA3116D2
CD4011BE	LM2901	PCA9306DCUR	SN74LVC1G175DCKR	TPS23881RTQR
CD4012BE	LM2902	SN65C1168ERGYR	SN74LVC1G3157DBVR	TPS2412PWR
CD4013BE	LM2903	SN65HVD230DR	SN74LVC1G32DRLR	TPS54331DDAR
CD4017BM96	LM2904	SN65HVD231DR	SN74LVC2G07DBVR	TPS54620RGYR
CD4026BE	LM317	SN65LBC184	SN74LVC2T45DCUR	TPS62291DRVR
CD4050	LM321	SN74AHC1G08DBVR	TL081CP	TPS62410DRCCR
CD4051	LM324	SN74AHC1G86DCK	TL082BCDR	TPS63000DRCCR
CD4052	LM339	SN74AHC1GU04DRLR	TL084CN	TPS63020DSJR
CD4053	LM358	SN74AVC16T245DGGR	TL431	TPS76330DBVR
CD4069UBE	LM393	SN74HC04	TL494CDR	TSS721ADR
CD4081BE	LMV321IDBVR	SN74HC138	TLC272CDR	TXS0102DCUR
CD74HC221M96	LMV324ID	SN74HC14	TLC274CD	UCC28070PWR
DRV8837DSGR	MAX202	SN74HC148	TLV272CDR	UCC28180
L298N	MAX232	SN74HC165	TLV62569DBVR	ULN2003
LM224DR	MAX3232	SN74HC244	TLV70033DDCR	ULN2004

### 意法半导体 (STM)

BTA08-600CRG	L78L05ACUTR	M24C64-RMN6TP	STM32F207ZET6	STM8S103F3P6
BTA08-800CRG	L78M05CDT	ST1S10PHR	STM32F401CEU6	STM8S103K3T6C
BTB04-600SL	L78M08ABDT	STM32F030C6T6	STM32F405RGT6	STM8S105C6T6
HCF4052M013TR	LM258AD	STM32F030C8T6	STM32F407VET6	STM8S105K4T6C
L298N	LM2903	STM32F030F4P6	STM32F407VGT6	STM8S105S4T6C
L6562DTR	LM2904	STM32F030K6T6	STM32F407ZET6	STM8S105S6T6
L6599ATDTR	LM293	STM32F051C8T6	STM32F407ZGT6	STM8S207RBT6
L7805CDT	LM317T	STM32F071VBT6	STM32F429IET6	TDA2030AV
L7805CV	LM324	STM32F103C8T6	STM32G070RBT6	TDA7265
L7806CV	LM335	STM32F103R8T6	STM32L475VET6	TDA7851L
L7809CV	LM339	STM32F103RCT6	STM8L051F3P6	TIP122
L7812CV	LM358	STM32F103VCT6	STM8L052C6T6	VIPER12ADIP-E
L7815CD2T-TR	LM393	STM32F105RBT6	STM8S003F3P6	VIPER17LN
L78L05ABUTR	M24C02-WMN6TP	STM32F107VCT6	STM8S005K6T6C	VIPER22ASTR

# 深圳市致新科科技有限公司

## Shenzhen Zhixinke Technology Co., Ltd.



### 安森美 (ONS) 仙童 (FAIRCHILD)

6N137	LM339DR2G	MC33063ADR2G	MC78M08CDTRKG	MMBT3906LT1G
LM2902DR2G	LM393DR2G	MC34063ADR2G	MC7915CD2TR4G	MMBT8550LT1G
LM2903DR2G	LM358DR2G	MC7805	MC7915CTG	SG3525ANG
LM2904DR2G	MBR20100CTG	MC7812CDTRKG	MC79M05BDTRKG	UC2843BNG
LM317LBDR2G	MBRS340T3G	MC7815CTG	MC79M15CDTRKG	UC2844BD1R2G
LM324DR2G	MBRS540T3G	MC78L05ACDR2G	MMBT3904LT1G	UC3845BNG

### MAXLINEAR 艾科嘉 (EXAR) 西伯斯 (SIPEX)

SP202EEN-L/TR	SP3222EEA-L/TR	SP3243EUEA-L/TR	SP485EEN-L/TR	SPX5205M5-L-3.3/TR
SP232EEN-L/TR	SP3232EBEA-L/TR	SP336EEY-L/TR	SPX29302T5-L/TR	SPX5205M5-L-5.0/TR
SP3220EEY-L/TR	SP3232EEY-L/TR	SP3485EN-L/TR	SPX3819M5-L-3-3/TR	SPX1117

### 新日本无线 (JRC)

NJM2035M	NJM2370U33	NJM2831F33	NJM3414AM	NJM78M05DL1A
NJM2274R	NJM2567V	NJM3404AV	NJM4558M	NJM79M05DL1A

### 美信 (MAXIM) 达拉斯 (DALLAS)

DS1302	DS1337	MAX232AEPE	MAX232CSE	MAX3232IPWR
DS1307	MAX17126ETM	MAX232AEPE	MAX232ESE	MAX485ESA
DS1338Z	MAX1771CSA	MAX232AESE	MAX232N	MAX6701BAUT30
DS2431P	MAX202CPW	MAX232CPE	MAX3088ESA	MAX9722AETE

### 微芯 (MICROCHIP) 爱特梅尔 (ATMEL)

AT24C02C-SSHM-T	AT24C64D-SSHM-T	PIC16F1936-I/SO	PIC16F505-I/SL	PIC16F723A-I/SS
AT24C04C-SSHM-T	PIC12F1822-I/SN	PIC16F1938-I/SO	PIC16F54-I/SO	PIC16F723-I/SO
AT24C16C-SSHM-T	PIC12F508-I/P	PIC16F1938-I/SS	PIC16F676-I/SL	PIC16F883-I/SS
AT24C256C-SSHL-T	PIC16F1826-I/SO	PIC16F1947-I/PT	PIC16F722A-I/SS	PIC16F914-I/PT

### STC

STC15W4K32S4	STC12C5A32S2	STC15W204S	STC8A8K48D4	STC8H1K08
STC8H3K64S4	STC12C5A32S2	STC15W404AS	STC8A8K64D4	STC8H3K32S2
STC11L32XE	STC12C5A56S2	STC15W4K32S4	STC8A8K64S4A12	STC8H3K48S
STC11L60XE	STC15F2K08S2	STC15W4K48S4	STC8F1K08S2	STC8H3K48S4
STC12C5604AD	STC15L204EA	STC89C55RD	STC8F2K16S2	STC8H8K48U
STC12C5A08AD	STC15W104	STC8A8K32S4A12	STC8G1K08A	STC8H8K64U

### 华邦 (WINBOND)

W25Q128FVSIQ	W25Q128JVSIQ	W25Q128JWPISQ	W25Q16JVSSIQ	W25Q32JWSNIQ
--------------	--------------	---------------	--------------	--------------

### 美国芯源 (MPS)

MP1471AGJ-Z	MP1653GTF-Z	MP2303ADN-LF-Z	MP2636GR-Z	MP8756GD-Z
MP1482DS-LF-Z	MP1657GTF-Z	MP2359DJ-LF-Z	MP3202DJ-LF-Z	MP9447GL-Z
MP1484EN-LF-Z	MP1658GTF-Z	MP2374DS-LF-Z	MP3426DL-LF-Z	MP9495DJ-LF-Z
MP1494DJ-LF-Z	MP2015AGG-33-Z	MP24943DN-LF-Z	MP5013AGJ-Z	MP9518GJS
MP1601GTF-Z	MP2122GJ-Z	MP26029GTF	MP6650GJS	NB679GD-Z
MP1605GTF-Z	MP2144GJ-Z	MP2603EJ-LF-Z	MP8126DF-LF-Z	NB680GD-Z

### 昂宝电子 (On-Bright)

OB3635	OB2222MCP	OB2263MP	OB2281MP	OB2535CPA
OB2212AP	OB2263AP	OB2273AMP	OB2356LCPA	OB3636MP

### 电池芯片 马达驱动器

4054 SOT23-5	CW1053	HP4011	LN8238A	TC118
4056 ESOP8	DW02R	HY2213	FM8002A	TC618CS
CW1051	DW06D	IP5305	TC117HS	TMI8118S

### 其它IC

RTL8201CP-VD-LF	IT7C4337WEX	IT8563UEX	HYM8563	TH10CA061
RTL8201F-VB-CG	IT8563WEX	BM8563	AiP8563	TH11CA031

我司本着“质量第一”的理念，通过正规渠道采购物料，专业采购师对采购物料要求严格，保证质量，在业界获得好评，货源优秀，港深两地常备原装现货。买原装正品IC，找致新科。