26V Low Current Consumption CMOS Voltage Regulators

CJ6336 Series Low-dropout Regulators

1 Introduction

The CJ6336 series is a group of low dropout linear regulators made by CMOS process. It supports the input voltage up to 26V and has ultra-low quiescent current and low dropout voltage, which can provide large output current even when the input and output voltage difference is very small. These features can help modern appliances meet increasingly stringent energy requirements and help extend the battery life of portable power solutions. The CJ6336 series provides a fixed voltage version with multiple output voltage points for selection. The fixed voltage version does not need external resistors and can minimize the size of printed circuit board (PCB). The CJ6336 series also has a built-in current limit and thermal shutdown, which helps to protect the regulator in the event of a load short circuit or fault.

2 Available Packages

PART NUMBER	PACKAGE
CJ6336 Series	SOT-23-3L
	SOT-89-3L

Note: For all available packages, please refer to the part *Orderable Information*.

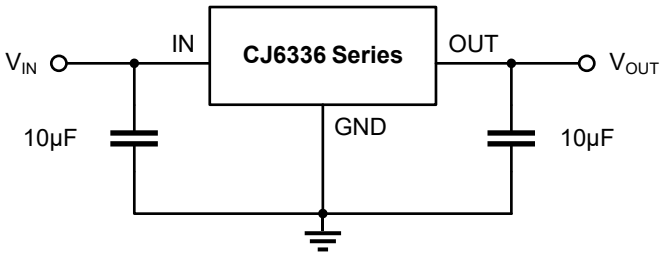


Figure 9-1. Conventional Circuit

3 Features

- Input Voltage Range: 2.5V ~ 26V
- Output Voltage Available in Fixed 3.0V, 3.3V, 3.6V and 5.0V
- Output Voltage Tolerance:
  ±2% at T_A = 25°C
- Output Current: up to 200mA
- Low Quiescent Current: 1.5μA (Typ.)
- Dropout Voltage:
  600mV@100mA (V_{OUT} = 3.3V)
- Power Supply Rejection Ratio:
  65dB@100Hz
- Integrated Fault Protection:
  Built-in Current Limit
  Thermal Shutdown
  Short-circuit Protection

4 Applications

- Always-on Power Supplies
- Gaming Controllers, Remote Controls,
- Toys, Drones
- Portable and Battery-powered
- Equipment
- Set-top Boxes
- Ultrabooks, Tablets, E-readers
- Wearable Electronics
- Wireless Handsets and Smart Phones

5 Orderable Information

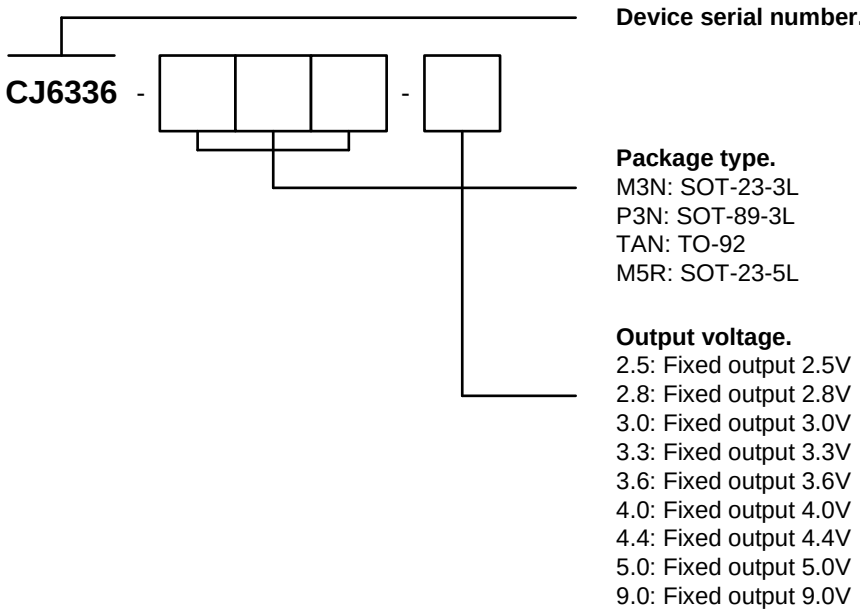


Figure 5-1. Naming Conventions

MODEL	DEVICE	PACKAGE	OP TEMP	ECO PLAN	MSL	PACKING OPTION	SORT
Conventional Products							
CJ6336-3.0	CJ6336-M3N-3.0	SOT-23-3L	-40 ~ 85°C	RoHS & Green	Level 3 168 HR	Tape and Reel 3000 Units / Reel	Active
CJ6336-3.3	CJ6336-M3N-3.3	SOT-23-3L	-40 ~ 85°C	RoHS & Green	Level 3 168 HR	Tape and Reel 3000 Units / Reel	Active
CJ6336-3.6	CJ6336-M3N-3.6	SOT-23-3L	-40 ~ 85°C	RoHS & Green	Level 3 168 HR	Tape and Reel 3000 Units / Reel	Active
CJ6336-5.0	CJ6336-M3N-5.0	SOT-23-3L	-40 ~ 85°C	RoHS & Green	Level 3 168 HR	Tape and Reel 3000 Units / Reel	Active
CJ6336-3.0	CJ6336-P3N-3.0	SOT-89-3L	-40 ~ 85°C	RoHS & Green	Level 3 168 HR	Tape and Reel 1000 Units / Reel	Active
CJ6336-3.3	CJ6336-P3N-3.3	SOT-89-3L	-40 ~ 85°C	RoHS & Green	Level 3 168 HR	Tape and Reel 1000 Units / Reel	Active
CJ6336-3.6	CJ6336-P3N-3.6	SOT-89-3L	-40 ~ 85°C	RoHS & Green	Level 3 168 HR	Tape and Reel 1000 Units / Reel	Active
CJ6336-5.0	CJ6336-P3N-5.0	SOT-89-3L	-40 ~ 85°C	RoHS & Green	Level 3 168 HR	Tape and Reel 1000 Units / Reel	Active

5 Orderable Information

MODEL	DEVICE	PACKAGE	OP TEMP	ECO PLAN	MSL	PACKING OPTION	SORT
Customized Products							
CJ6336-2.5	CJ6336-xxx-2.5	-	-40 ~ 85°C	RoHS & Green	Level 3 168 HR	-	Customized
CJ6336-2.8	CJ6336-xxx-2.8	-	-40 ~ 85°C	RoHS & Green	Level 3 168 HR	-	Customized
CJ6336-4.0	CJ6336-xxx-4.0	-	-40 ~ 85°C	RoHS & Green	Level 3 168 HR	-	Customized
CJ6336-4.4	CJ6336-xxx-4.4	-	-40 ~ 85°C	RoHS & Green	Level 3 168 HR	-	Customized
CJ6336-9.0	CJ6336-xxx-9.0	-	-40 ~ 85°C	RoHS & Green	Level 3 168 HR	-	Customized
CJ6336-x.x	CJ6336-TAN-x.x	TO-92	-40 ~ 85°C	RoHS & Green	Level 3 168 HR	-	Customized
CJ6336-x.x	CJ6336-M5R-x.x	SOT-23-5L	-40 ~ 85°C	RoHS & Green	Level 3 168 HR	-	Customized
Others	-	-	-	-	-	-	Customized

Note:

ECO PLAN: For the RoHS and Green certification standards of this product, please refer to the official report provided by JSCJ.

MSL: Moisture Sensitivity Level. Determined according to JEDEC industry standard classification.

SORT: Specifically defined as follows:

Active: Recommended for new products;

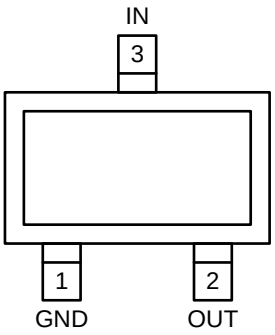
Customized: Products manufactured to meet the specific needs of customers;

Preview: The device has been released and has not been fully mass produced. The sample may or may not be available; NoRD: It is not recommended to use the device for new design. The device is only produced for the needs of existing customers;

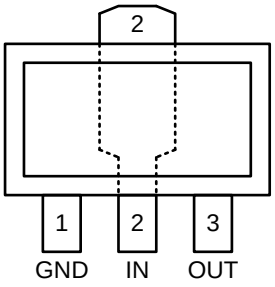
Obsolete: The device has been discontinued.

6 Pin Configuration and Marking Information

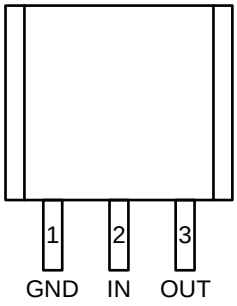
6.1 Pin Configuration



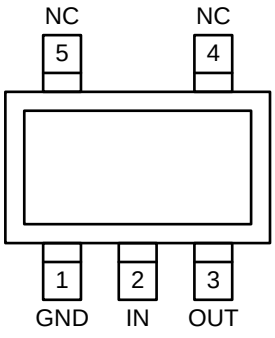
CJ6336-M3N-x.x
SOT-23-3L



CJ6336-P3N-x.x
SOT-89-3L

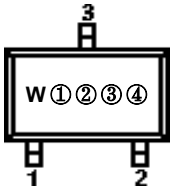


CJ6336-TAN-x.x
TO-92

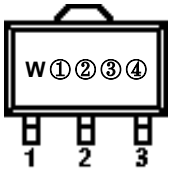


CJ6336-M5R-x.x
SOT-23-5L

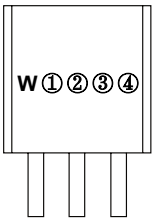
6.2 Marking Information



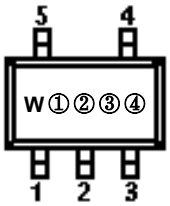
SOT-23-3L



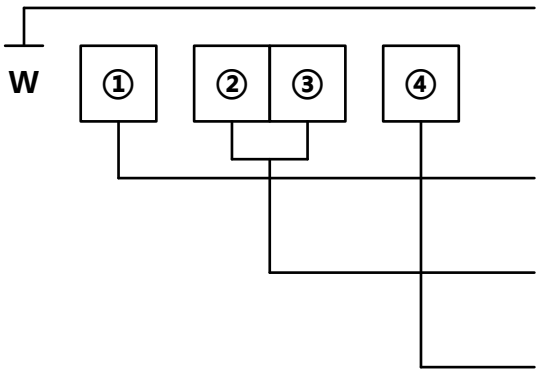
SOT-89-3L



TO-92



SOT-23-5L



Serial code for CJ6336 series.

Representative output voltage.
G: Fixed output 3.0V
H: Fixed output 3.3V
I: Fixed output 3.6V
K: Fixed output 5.0V
(Other products are customized)

Code, indicates weekly record information of production.

Code, special pin arrangement sequence.
(blank): Normal
R: M5R pin arrangement for SOT-23-5L

Output Voltage	Marking Information for CJ6336 Series		
	3 Pins Packages		Others
	SOT-23-3L	SOT-89-3L	
3.0V	CJ6336-M3N-3.0: **WG**XX	CJ6336-P3N-3.0: **WG**XX	-
3.3V	CJ6336-M3N-3.3: **WH**XX	CJ6336-P3N-3.3: **WH**XX	-
3.6V	CJ6336-M3N-3.6: **WI**XX	CJ6336-P3N-3.6: **WI**XX	-
5.0V	CJ6336-M3N-5.0: **WK**XX	CJ6336-P3N-5.0: **WK**XX	-

7 Specifications

7.1 Absolute Maximum Ratings

(T_A = 25°C, unless otherwise specified)

CHARACTERISTIC			SYMBOL	VALUE	UNIT
Input voltage range(2)			V_{IN}	-0.3 ~ 30	V
Output voltage range(2)			V_{OUT}	-0.3 ~ 26	
Maximum power dissipation	CJ6336 series	SOT-23-3L	$P_{D\ Max}$	Internally Limited(3)	W
		SOT-89-3L			
		TO-92			
		SOT-23-5L			
Maximum junction temperature			$T_{J\ Max}$	125	°C
Storage temperature			T_{stg}	-50 ~ 125	°C
Soldering temperature & time			T_{solder}	260°C, 10s	-

(1) Stresses beyond those listed under *Absolute Maximum Ratings* may cause permanent damage to the device. These are stress ratings only, which do not imply functional operation of the device at these or any other conditions beyond those indicated under *Recommended Operating Conditions*. Exposure to absolute-maximum rated conditions for extended periods may affect device reliability.
(2) All voltages are with respect to network ground terminal.
(3) Refer to *Thermal Information* for details.

7.2 Recommended Operating Conditions

PARAMETER	SYMBOL	MIN.	NOM.	MAX.	UNIT
Input voltage	V_{IN}	2.5	-	26	V
Operating junction temperature	T_J	-40	-	125	°C
Operating ambient temperature	T_A	-40	-	85	°C

7.3 ESD Ratings

ESD RATINGS		SYMBOL	VALUE	UNIT
Electrostatic discharge(4)	Human body model	$V_{ESD-HBM}$	2000	V
	Machine model	V_{ESD-MM}	200	

(4) ESD testing is conducted in accordance with the relevant specifications formulated by the Joint Electronic Equipment Engineering Commission (JEDEC). The human body model (HBM) electrostatic discharge test is based on the JESD22-114D test standard, using a 100pF capacitor and discharging to each pin of the device through a resistance of 1.5kΩ. The electrostatic discharge test in mechanical model (MM) is based on the JESD22-115-A test standard and uses a 200pF capacitor to discharge directly to each pin of the device.

7 Specifications

7.4 Thermal Information

THERMAL METRIC(5)	SYMBOL	CJ6336 Series		UNIT
Junction-to-ambient thermal resistance	$R_{\Theta JA}$	**SOT-23-3L**	**SOT-89-3L**	°C/W
		266.3	165.9	
		TO-92	**SOT-23-5L**	
		178.3	254.7	
Junction-to-case thermal resistance	$R_{\Theta JC}$	**SOT-23-3L**	**SOT-89-3L**	°C/W
		66.3	54.1	
		TO-92	**SOT-23-5L**	
		41.5	65.1	
Reference maximum power dissipation for continuous operation	$P_{D\ Ref}$	**SOT-23-3L**	**SOT-89-3L**	W
		0.38	0.63	
		TO-92	**SOT-23-5L**	
		0.56	0.40	

(5) Thermal metric is measured in still air with T_A = 25°C and installed on a 1 in^2 FR-4 board covered with 2 ounces of copper.

7 Specifications

7.5 Electrical Characteristics

CJ6336 Series (V_{IN} = V_{OUT} +2V, C_{IN} = 10μF, C_{OUT} = 10μF, T_A = 25°C, unless otherwise specified)

CHARACTERISTIC	SYMBOL	TEST CONDITIONS		MIN.	TYP.(6)	MAX.	UNIT
Input voltage	V_{IN}	T_A = 25°C		2.5	-	26	V
DC output tolerance	-	T_J = 25°C, I_{OUT} = 10mA		-2	-	2	%
Output current	I_{OUT}	T_J = 25°C		200	-	-	mA
Quiescent current	I_Q	I_{OUT} = 0mA		-	1.5	3.0	μA
Dropout voltage	V_{DO}(7)	V_{OUT} = 3.0 to 3.6V, I_{OUT} = 100mA		-	600	800	mV
Line regulation	LNR(8)	V_{IN} = V_{OUT} +2V to 26V, I_{OUT} = 1mA		-	0.01	0.2	%/V
Load regulation	ΔV_{LOAD}	V_{IN} = V_{OUT} +2V, I_{OUT} = 1 to 100mA		-	25	60	mV
Temperature characteristics	TR(9)	V_{IN} = V_{OUT} +2V, I_{OUT} = 10mA, T_A = -40 to 85°C		-	100	-	ppm/°C
Output current limit	I_{Limit}	V_{IN} = V_{OUT} +2V		250	350	-	mA
Short current	I_{Short}	OUT short to GND		-	120	-	mA
Power supply rejection ratio	PSRR	V_{IN} = (V_{OUT} +2V) $_{DC}$ + 1$V_{PP\ AC}$, I_{OUT} = 50mA	f = 100Hz	-	65	-	dB
			f = 1kHz	-	50	-	
Thermal shutdown	T_{SD}	-		-	150	-	°C
Thermal shutdown hysteresis	ΔT_{SD}	-		-	20	-	°C

Note:

(6) Typical numbers are at 25°C and represent the most likely norm.

(7) Test the difference of output voltage and input voltage when input voltage is decreased gradually till output voltage equals to 98% of $V_{OUT\ Normal}$.

(8) The line regulation is calculated by the following formula:

$$LNR = \frac{\Delta V_{OUT}}{V_{OUT} \times \Delta V_{IN}}$$

where, ΔV_{OUT} is the variation of the output voltage, ΔV_{IN} is the variation of the input voltage.

(9) The output voltage temperature characteristics (TR) is calculated by the following formula:

$$TR = \frac{\Delta V_{OUT}}{V_{OUT} \times \Delta T}$$

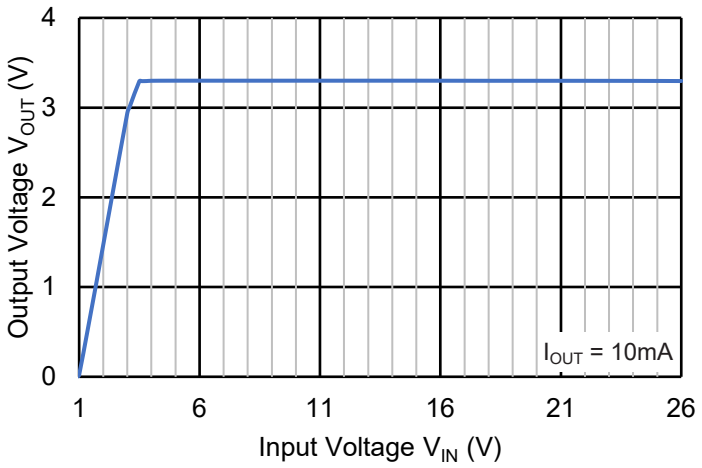
where, ΔV_{OUT} is the variation of the output voltage, ΔT is the variation of the ambient temperature.

7 Specifications

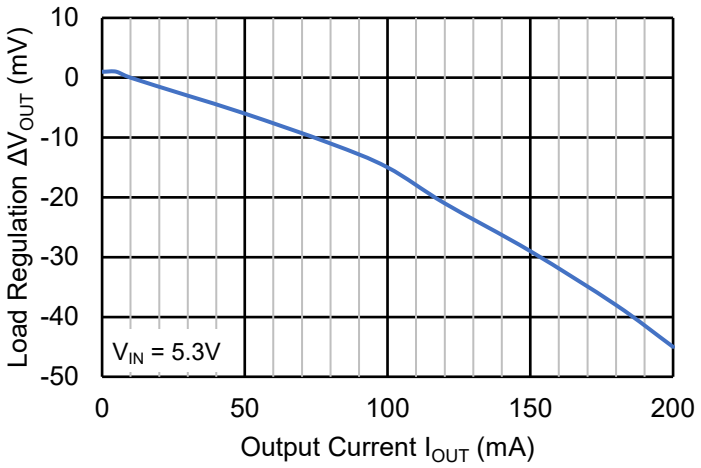
7.6 Typical Characteristics

CJ6336 Series (V_{OUT} = 3.3V, C_{IN} = 10μF, C_{OUT} = 10μF, T_A = 25°C, unless otherwise specified)

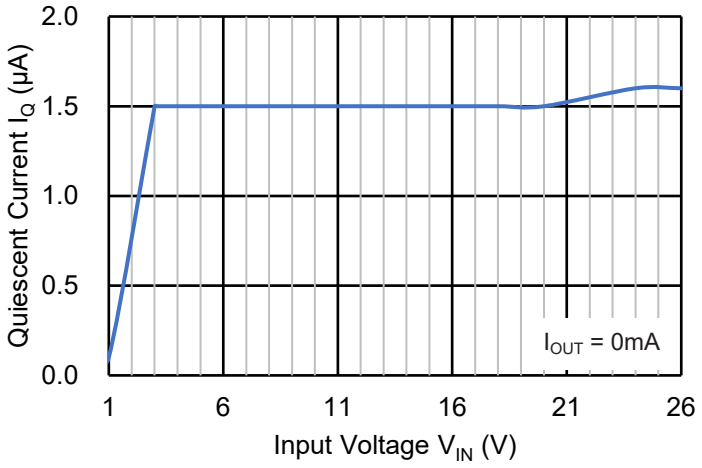
Line Regulation



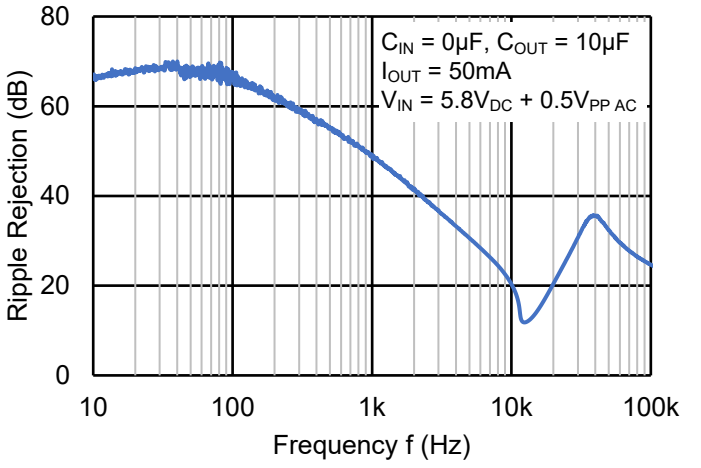
Load Regulation



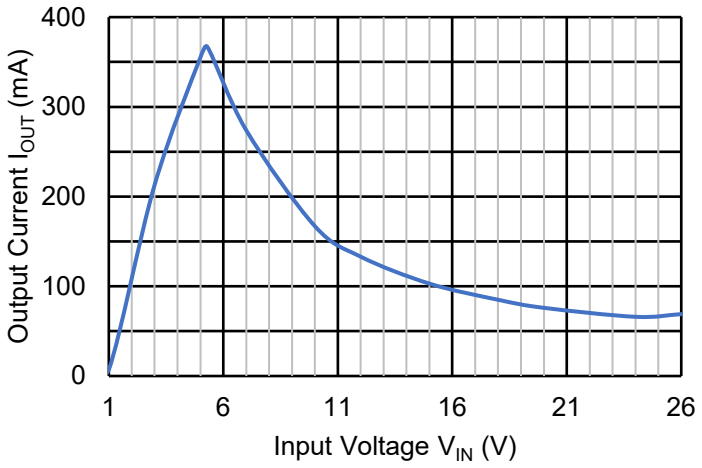
Quiescent Current



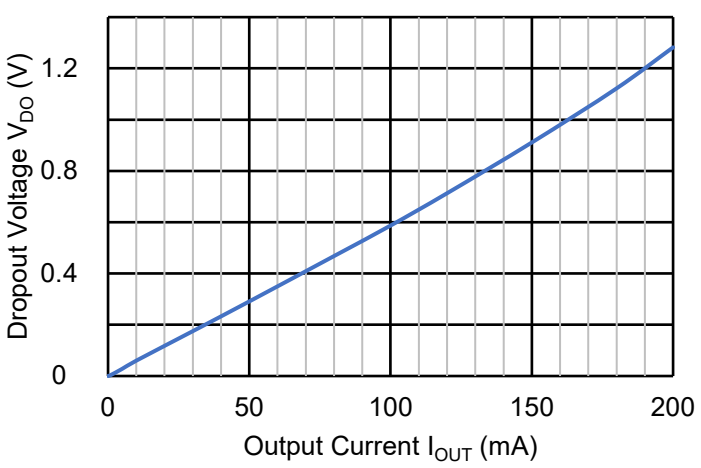
Ripple Rejection



Output Current Limit



Dropout Voltage



7 Specifications

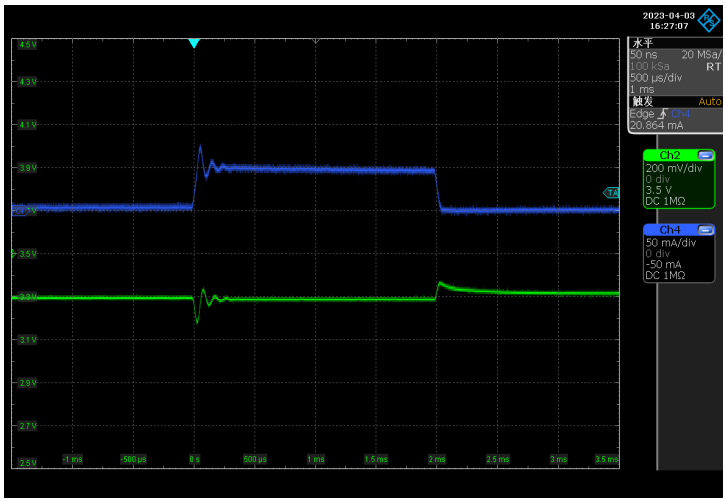
7.6 Typical Characteristics (continued)

CJ6336 Series (V_{OUT} = 3.3V, C_{IN} = 10μF, C_{OUT} = 10μF, T_A = 25°C, unless otherwise specified)

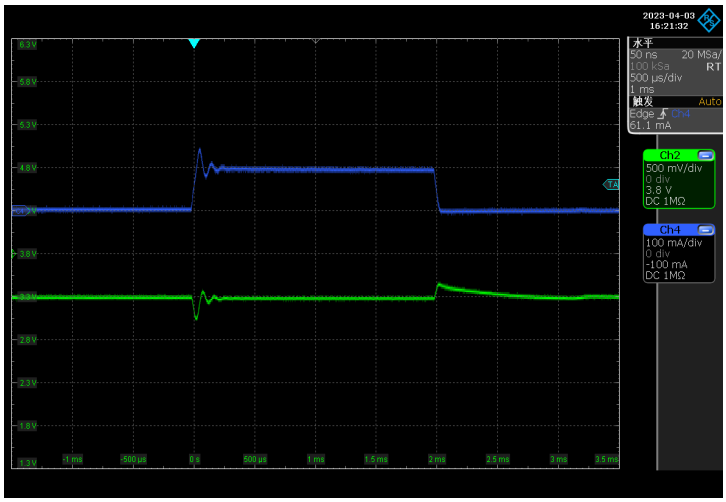
Load Transient

V_{OUT} = 3.3V, V_{IN} = 5.3V, CH_2: V_{OUT}, CH_4: I_{OUT}

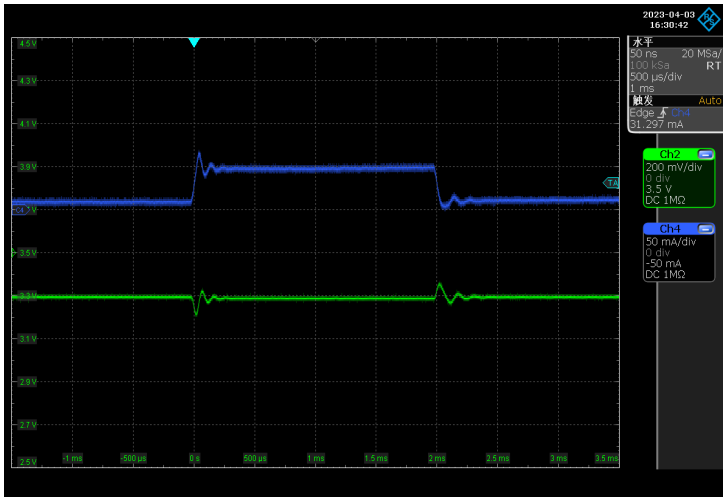
1 ~ 50mA



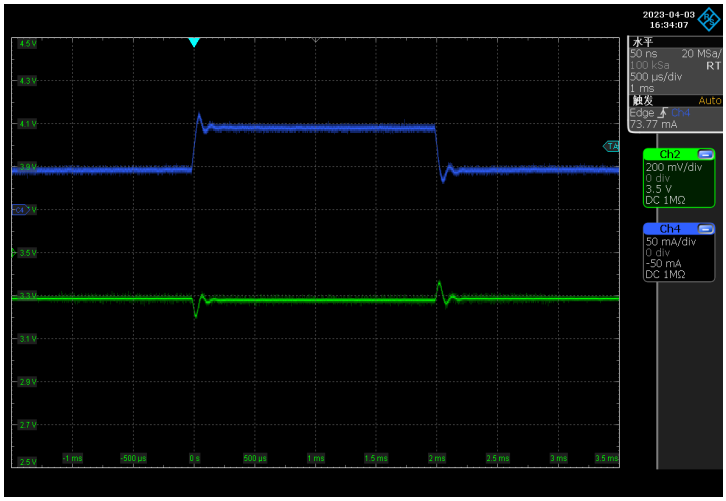
1 ~ 100mA



10 ~ 50mA

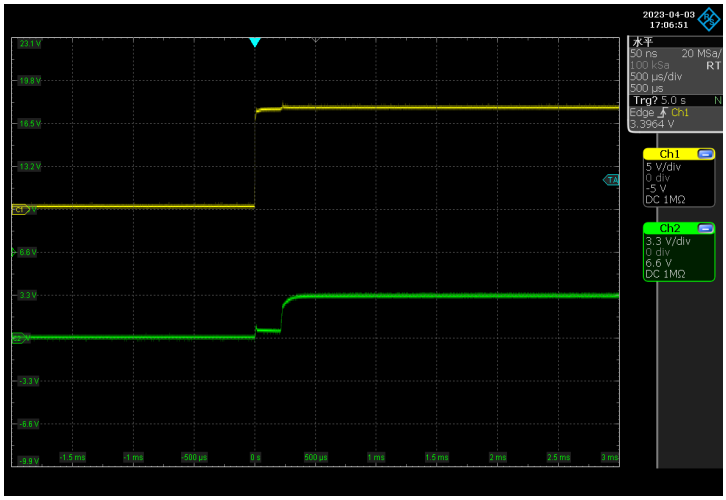


50 ~ 100mA



Power On

V_{OUT} = 3.3V, V_{IN} = 0 ~ 12V, I_{OUT} = 50mA, CH_1: V_{IN}, CH_2: V_{OUT}

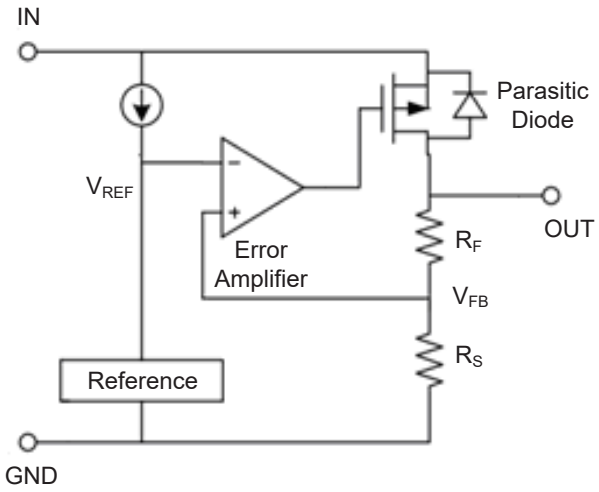


8 Detailed Description

8.1 Description

The CJ6336 series is a group of 26V, low-power consumption, low-dropout linear regulators (LDO). The CJ6336 series supports fixed voltage output of 3.0V, 3.3V, 3.6V and 5.0V, which enables it to use fewer external components to provide better accuracy. The CJ6336 series has low I_Q performance and is internally integrated with current limiting, short-circuit protection and thermal shutdown protection, which makes it an ideal choice for battery power or line power applications.

8.2 Functional Block Diagram



The internal feedback resistors R_F and R_S form a voltage divider circuit to compare the V_{FB} input error amplifier with the reference voltage. The internal regulator tube (PMOS) will control its conduction degree through the grid voltage provided by the error amplifier output, which will make the output voltage V_{OUT} not affected by temperature changes or input voltage changes to a certain extent, thus maintaining the stability of the device output voltage.

8.3 Feature Description

Input Voltage

If the input voltage is lower than the nominal output voltage plus the specified dropout voltage, but all other conditions are met for normal operation, the device operates in dropout mode. In this condition, the output voltage is the same the input voltage minus the dropout voltage. The transient performance of the device is significantly degraded because the pass device is in a triode state and no longer controls the current through the LDO. Line or load transients in dropout may result in large output voltage deviations.

If the input voltage is higher than the rated range of the data sheet, the device may cause irreversible damage or failure due to exceeding the maximum rated range of electrical stress.

Reverse Diode

The regulator PMOS inside the device contains a parasitic diode that conducts the reverse current that may be generated in the device when the input voltage drops below the output voltage (e.g. during power failure). At this time, the current is conducted from the output end to the input end without internal restriction. If extended reverse voltage operation is anticipated, external limiting is appropriate.

8 Detailed Description

8.3 Feature Description (continued)

Built-in Current Limit & Short Circuit Protection

The CJ6336 series has an internal current limiting circuit, which can protect the device by limiting the load current value in case of instantaneous high load current. When the current limiting is triggered, the output voltage is not regulated. If the out pin of the regulator is short circuited, the internal current limiting circuit will be triggered, the output current of the device will maintain at a relatively small value to protect the device. The typical value of short current I_{Short} can be found in *Electrical Characteristics.* The current limiting state will continue until the load current drops to the normal range.

When the load current of the device is large, the device will generate more heat due to the increase of power consumption, which may cause the device to turn off its output due to the internal thermal shutdown protection before the current limit is triggered.

In order to ensure the normal operation of current limit, the inductance of input and load shall be minimized. Continuous operation under current limit is not recommended.

Thermal Shutdown

The CJ6336 series has thermal shutdown protection mechanism. When the junction temperature (T_J) of the internal main channel MOSFET exceeds the thermal shutdown threshold temperature (T_{SD}), thermal shutdown will be triggered. At this time, the output will be turned off to prevent catastrophic damage to the chip due to accidental heating. When the T_J drops to a certain range of thermal shutdown threshold temperature (ΔT_{SD}), the thermal shutdown will be released and the device will return to the normal output. The temperature threshold of device triggering thermal shutdown (T_{SD}) and temperature range to be lowered to released from thermal shutdown (ΔT_{SD}) can be found in the *Electrical Characteristics*.

To ensure reliable operation, please limit the junction temperature to the specified range of *Recommended Operating Conditions* in the data sheet. Applications that exceed the recommended temperature range may cause the device to exceed its operating specifications.

Although the internal protection circuit of the device is designed to prevent overall thermal conditions, it is not intended to replace proper power dissipation. Running the device continuously until thermal shutdown or higher than the recommended operating T_J will reduce long-term reliability.

Dropout Voltage

Dropout voltage (V_{DO}) refers to the minimum voltage difference between input and output (V_{IN} - V_{OUT}) to make the device output voltage reach the rated range at rated current. When the dropout voltage condition required by the device is reached, the internal MOSFET will be fully turned on, at this time, the MOSFET is equivalent to a switch for regulation.

The V_{DO} increases with the increase of load current. Since V_{IN} - V_{OUT} must be no less than the V_{DO}, the V_{DO} indirectly specifies the minimum input voltage of devices under different load current conditions. If the V_{IN} - V_{OUT} is less than the V_{DO}, the performance of the device may deteriorate.

9 Application and Implementation

9.1 Typical Application Circuits

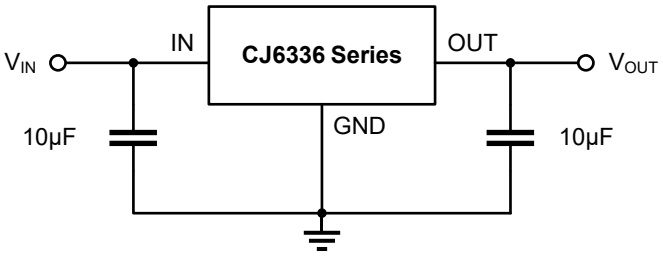


Figure 9-1. Conventional Circuit

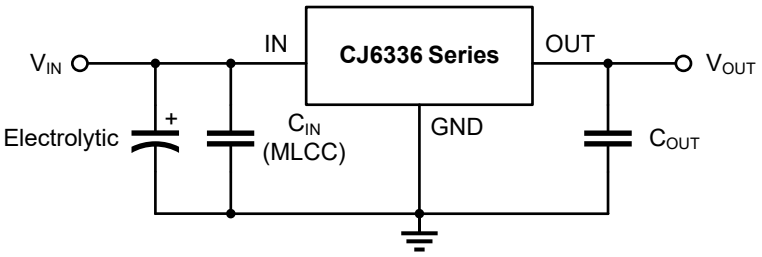


Figure 9-2. Electrolytic capacitor is used at IN

9.2 Application Information

Hot Plug Application

For the application circuit using the low ESR multilayer ceramic capacitor (MLCC) type input capacitor, the LC resonant voltage spike caused by hot plugging or power transmission line inductance can be suppressed by using RC suppression circuit for parallel connection of the input capacitor. A very simple method is to parallel a suitable electrolytic capacitor to the input capacitor. As shown in Figure 9-2. For most 100μF/25V electrolytic capacitor has an ESR of about 0.2Ω at 100kHz. This can completely suppress the overshoot phenomenon of the input and minimize the possibility of IC damage due to input voltage spikes.

Bypass Capacitance Selection

A capacitance between IN and GND (C_{IN}) is required if the regulator is located far from the power supply filter. It is recommended to use a 10μF capacitor for C_{IN}, and the C_{IN} should be placed as close to the device IN pin and GND pin as possible.

It is recommended to use a 10μF capacitor between OUT and GND (C_{OUT}), and the capacitor should be placed as close as possible between OUT and GND. The C_{OUT} can limit the high-frequency noise and help the device obtain the best stability and transient response.

The tolerance and temperature coefficient of the C_{IN} and C_{OUT} must be considered to ensure that the capacitors can work normally within the rated working ambient temperature and rated working conditions of the device.

Layout Guidelines

When designing the circuit including CJ6336 series, the following matters should be noted:

- Place the input and output capacitors as close to the pins of the device as possible;
- The device is connected by copper plane and the heat sink (or back pad) of the device is fully welded with PCB to obtain better heat dissipation performance and lower on resistance;
- Heat sink holes are placed around the device to help the circuit dissipate more heat energy. However, attention should be paid to the position of the heat sink holes to prevent the solder (or solder paste) on the IC pad from being absorbed by the heat sink holes and being damaged during welding.

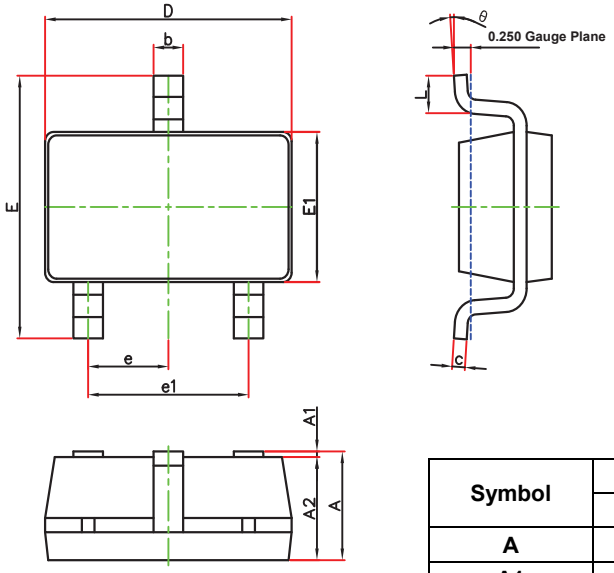
NOTE

The application information in this section is not part of the data sheet component specification, and JSCJ makes no commitment or statement to guarantee its accuracy or completeness. Customers are responsible for determining the rationality of corresponding components in their circuit design and making tests and verifications to ensure the normal realization of their circuit design.

10 Mechanical Information

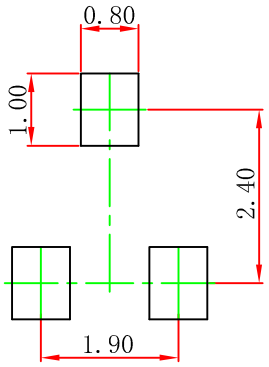
10.1 SOT-23-3L Mechanical Information

SOT-23-3L Outline Dimensions



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.900	1.450	0.035	0.057
A1	0.000	0.150	0.000	0.006
A2	0.900	1.300	0.035	0.051
b	0.350	0.500	0.014	0.020
c	0.100	0.200	0.004	0.008
D	2.820	3.020	0.111	0.119
E	2.600	3.000	0.102	0.118
E1	1.500	1.700	0.059	0.067
e	0.950(BSC)		0.037(BSC)	
e1	1.800	2.000	0.071	0.079
L	0.350	0.550	0.014	0.022
θ	0°	8°	0°	8°

SOT-23-3L Suggested Pad Layout



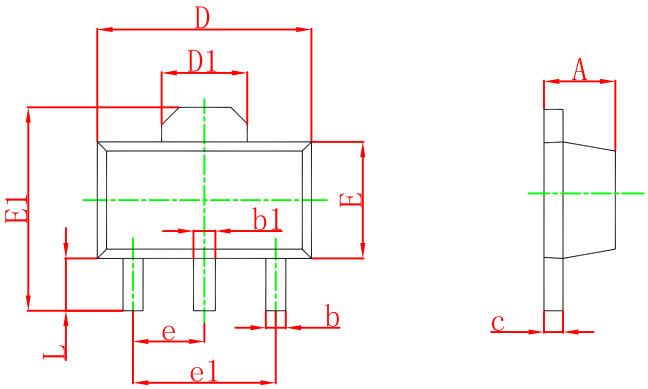
Note:

1. Controlling dimension: in millimeters.
2. General tolerance: ±0.05mm.
3. The pad layout is for reference purpose only.

10 Mechanical Information

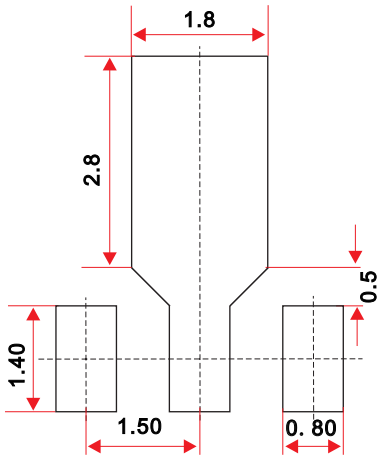
10.2 SOT-89-3L Mechanical Information

SOT-89-3L Outline Dimensions



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	1.400	1.600	0.055	0.063
b	0.350	0.500	0.014	0.020
b1	0.450	0.600	0.018	0.024
c	0.360	0.460	0.014	0.018
D	4.300	4.700	0.169	0.185
D1	1.400	1.800	0.055	0.071
E	2.300	2.700	0.091	0.106
E1	4.000	4.700	0.157	0.185
e	1.500 BSC		0.059 BSC	
e1	3.000 BSC		0.118 BSC	
L	0.800	1.200	0.031	0.047

SOT-89-3L Suggested Pad Layout



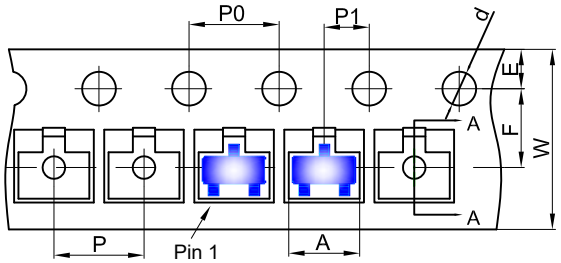
Note:

1. Controlling dimension: in millimeters.
2. General tolerance: ±0.05mm.
3. The pad layout is for reference purpose only.

11 Packaging Information

11.1 SOT-23-3L Tape and Reel Information

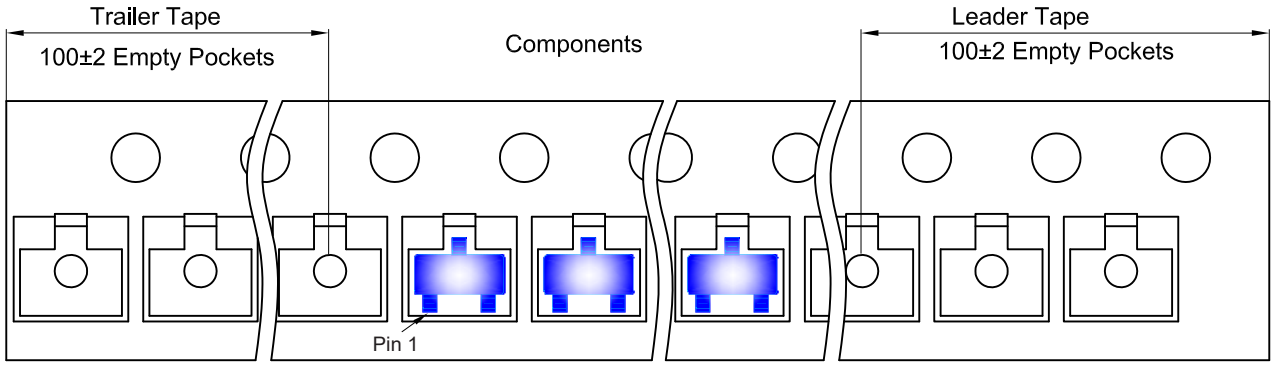
SOT-23-3L Embossed Carrier Tape



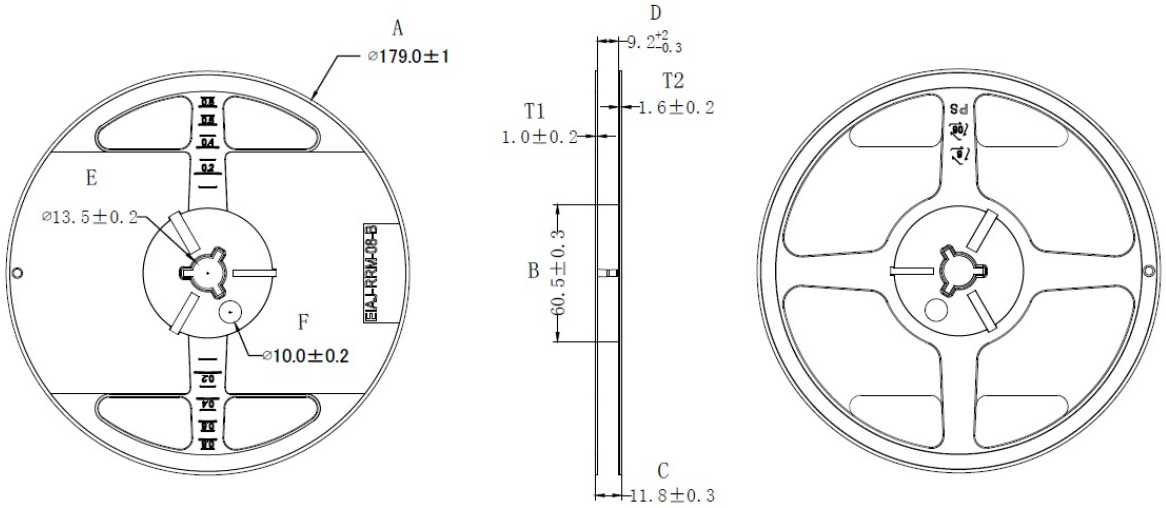
Packaging Description:
SOT-23-3L parts are shipped in tape. The carrier tape is made from a dissipative (carbon filled) polycarbonate resin. The cover tape is a multilayer film (Heat Activated Adhesive in nature) primarily composed of polyester film, adhesive layer, sealant, and anti-static sprayed agent. These reeled parts in standard option are shipped with 3,000 units per 7" or 18.0cm diameter reel. The reels are clear in color and is made of polystyrene plastic (anti-static coated).

Dimensions are in millimeter										
Pkg type	A	B	C	d	E	F	P0	P	P1	W
SOT-23-3L	**3.10**	**3.20**	**1.40**	**Φ1.55**	**1.75**	**3.50**	**4.00**	**4.00**	**2.00**	**8.00**

SOT-23-3L Tape Leader and Trailer



SOT-23-3L Reel



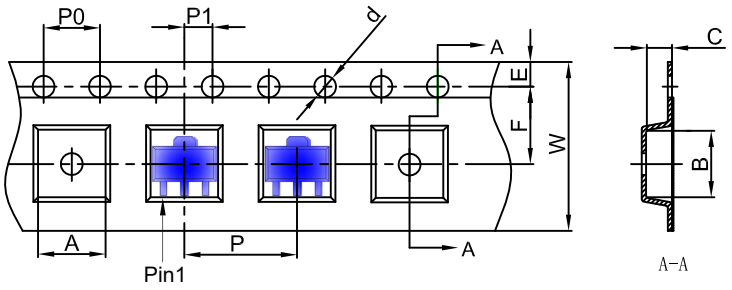
A±1	B±0.3	C±0.3	$D^{+2}_{-0.3}$	E±0.2	F±0.2	T1±0.2	T2±0.2
179	60.5	11.8	9.2	13.5	∅10	1.0	1.6

REEL	Reel Size	Box	Box Size(mm)	Carton	Carton Size(mm)	G.W.(kg)
3000 pcs	7 inch	30,000 pcs	203×203×195	120,000 pcs	438×438×220	

11 Packaging Information

11.2 SOT-89-3L Tape and Reel Information

SOT-89-3L Embossed Carrier Tape

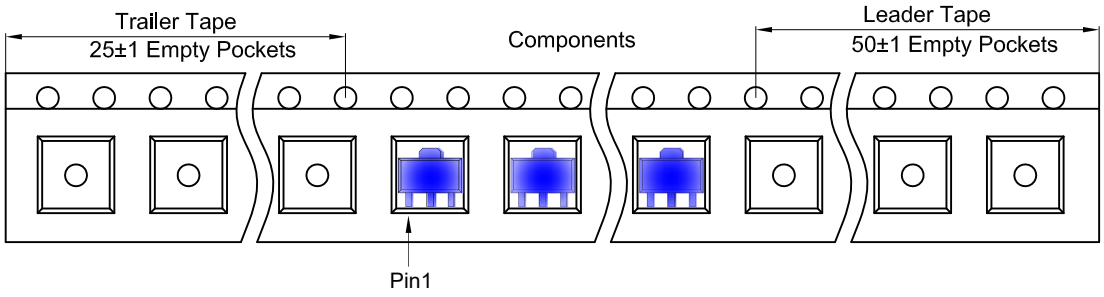


Packaging Description:

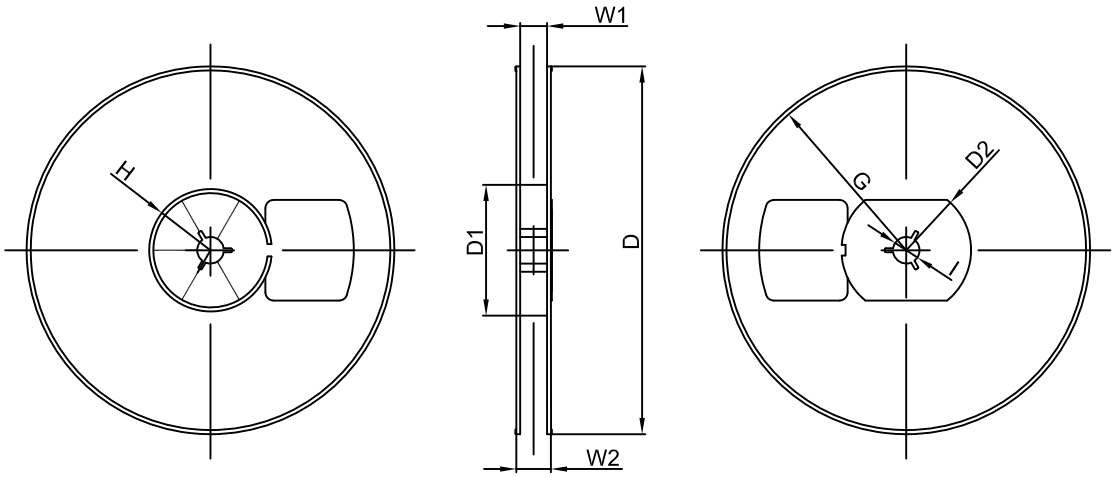
SOT-89-3L parts are shipped in tape. The carrier tape is made from a dissipative (carbon filled) polycarbonate resin. The cover tape is a multilayer film (Heat Activated Adhesive in nature) primarily composed of polyester film, adhesive layer, sealant, and anti-static sprayed agent. These reeled parts in standard option are shipped with 1,000 units per 7" or 18.0 cm diameter reel. The reels are clear in color and is made of polystyrene plastic (anti-static coated).

Dimensions are in millimeter										
Pkg type	A	B	C	d	E	F	P0	P	P1	W
SOT-89-3L	4.85	4.45	1.85	Ø1.50	1.75	5.50	4.00	8.00	2.00	12.00

SOT-89-3L Tape Leader and Trailer



SOT-89-3L Reel



Dimensions are in millimeter								
Reel Option	D	D1	D2	G	H	I	W1	W2
7"Dia	Ø180.00	60.00	R32.00	R86.50	R30.00	Ø13.00	13.20	16.50

REEL	Reel Size	Box	Box Size(mm)	Carton	Carton Size(mm)	G.W.(kg)
1000 pcs	7 inch	10,000 pcs	203×203×195	40,000 pcs	438×438×220	

12 Notes and Revision History

12.1 Associated Product Family and Others

To view other products of the same type or IC products of other types, please click the official website of JSCJ -- ***https: www.jscj-elec.com*** for more details.

12.2 Notes

Electrostatic Discharge Caution

This IC may be damaged by ESD. Relevant personnel shall comply with correct installation and use specifications to avoid ESD damage to the IC. If appropriate measures are not taken to prevent ESD damage, the hazards caused by ESD include but are not limited to degradation of integrated circuit performance or complete damage of integrated circuit. For some precision integrated circuits, a very small parameter change may cause the whole device to be inconsistent with its published specifications.

12.3 Revision History

October, 2023: changed from rev - 1.0 to rev - 1.1:

- Page 2, Orderable Information, updated the packing option;
- Page 4, Marking Information, added the Marking Information table;
- Page 15, Mechanical Information, removed the customized products;
- Page 15, added the part Packaging Information of the SOT-23-3L and SOT-89-3L.

May, 2023: released CJ6336 series rev - 1.0.

DISCLAIMER

IMPORTANT NOTICE, PLEASE READ CAREFULLY

The information in this data sheet is intended to describe the operation and characteristics of our products. JSCJ has the right to make any modification, enhancement, improvement, correction or other changes to any content in this data sheet, including but not limited to specification parameters, circuit design and application information, without prior notice.

Any person who purchases or uses JSCJ products for design shall: 1. Select products suitable for circuit application and design; 2. Design, verify and test the rationality of circuit design; 3. Procedures to ensure that the design complies with relevant laws and regulations and the requirements of such laws and regulations. JSCJ makes no warranty or representation as to the accuracy or completeness of the information contained in this data sheet and assumes no responsibility for the application or use of any of the products described in this data sheet.

Without the written consent of JSCJ, this product shall not be used in occasions requiring high quality or high reliability, including but not limited to the following occasions: medical equipment, military facilities and aerospace. JSCJ shall not be responsible for casualties or property losses caused by abnormal use or application of this product.

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