

300mA、微功率、超低压差(VLDO)线性稳压器

UM365xxS SOT23-3

UM365xxP SOT323

描述

UM365xx系列是专为低功耗便携式应用而设计的 VLDO（超低压差）线性稳压器。在负载电流为100mA时的最大压差仅为200mV。内部P沟道MOSFET传输晶体管无需基极电流驱动，因此在最大负载电流为300mA时，该器件只消耗90μA电流。

该器件的其他特性包括高输出电压精度、欠压锁定、使用低至1μF的超低ESR陶瓷电容器的稳定性、过温保护和输出电流限制。UM365xx 系列采用扁平SOT23-3或SOT323封装。

应用

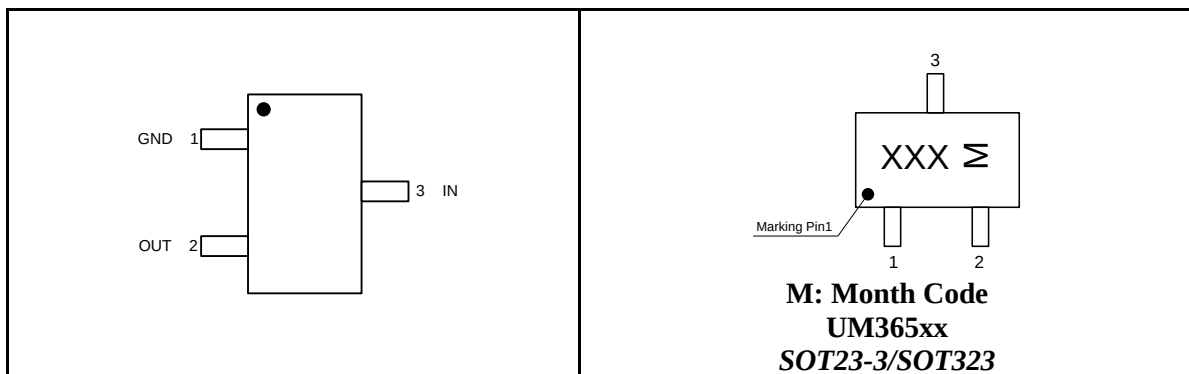
- 蓝牙/802.11 板卡
- PDA 和笔记本电脑
- 便携式仪器和电池供电系统
- 蜂窝电话

特性

- 超低压差：100mA 负载电流下最大 200mV
- 最大输入电压：6.0V
- 低噪声：200μV_{RMS}（10Hz 至 100kHz）
- 150mA 输出电流时具有±2%电压精度
- 固定输出电压：
1.2V 至 5.0V，步径为 100mV
- 输出电流限制
- 使用 1μF 输出电容，具有良好的稳定性
- 过温保护
- 采用扁平 SOT23-3 或 SOT323 封装

引脚配置

顶部视图



引脚说明

引脚编号	符号	功能
1	GND	接地
2	OUT	稳压输出
3	IN	电源

Ordering Information

Part Number	Output Voltage	Packaging Type	Marking Code	Shipping Qty
UM36512S	1.2V	SOT23-3	52D	3000pcs/7Inch Tape & Reel
UM36513S	1.3V		52E	
UM36514S	1.4V		52H	
UM36515S	1.5V		52J	
UM36516S	1.6V		52L	
UM36517S	1.7V		52M	
UM36518S	1.8V		52K	
UM36519S	1.9V		52F	
UM36520S	2.0V		52B	
UM36521S	2.1V		52A	
UM36522S	2.2V		U2C	
UM36523S	2.3V		U23	
UM36524S	2.4V		U24	
UM36525S	2.5V		52N	
UM36526S	2.6V		U26	
UM36527S	2.7V		52P	
UM36528S	2.8V		52Q	
UM36529S	2.9V		U29	
UM36530S	3.0V		52R	
UM36531S	3.1V		52S	
UM36532S	3.2V		52T	
UM36533S	3.3V		53U	
UM36534S	3.4V		52Y	
UM36535S	3.5V		53Z	
UM36536S	3.6V		54L	
UM36537S	3.7V		U47	
UM36538S	3.8V		54K	
UM36539S	3.9V		U49	
UM36540S	4.0V		54R	
UM36541S	4.1V		54A	
UM36542S	4.2V		U4D	
UM36543S	4.3V		U4E	
UM36544S	4.4V		U44	
UM36545S	4.5V		54J	
UM36546S	4.6V		54N	
UM36547S	4.7V		54P	
UM36548S	4.8V		54Q	
UM36549S	4.9V		54H	
UM36550S	5.0V		U4F	

Ordering Information (Continued)

Part Number	Output Voltage	Packaging Type	Marking Code	Shipping Qty
UM36512P	1.2V	SOT323	VS2	3000pcs/7Inch Tape & Reel
UM36513P	1.3V		VS3	
UM36514P	1.4V		VS4	
UM36515P	1.5V		VS5	
UM36516P	1.6V		VS6	
UM36517P	1.7V		VS7	
UM36518P	1.8V		VS8	
UM36519P	1.9V		VS9	
UM36520P	2.0V		VSA	
UM36521P	2.1V		VS8	
UM36522P	2.2V		VR2	
UM36523P	2.3V		VR3	
UM36524P	2.4V		VR4	
UM36525P	2.5V		VR5	
UM36526P	2.6V		VR6	
UM36527P	2.7V		VR7	
UM36528P	2.8V		VR8	
UM36529P	2.9V		VR9	
UM36530P	3.0V		VRA	
UM36531P	3.1V		VRB	
UM36532P	3.2V		VZ2	
UM36533P	3.3V		VZ3	
UM36534P	3.4V		VZ4	
UM36535P	3.5V		VZ5	
UM36536P	3.6V		VZ6	
UM36537P	3.7V		VZ7	
UM36538P	3.8V		VZ8	
UM36539P	3.9V		VZ9	
UM36540P	4.0V		VZA	
UM36541P	4.1V		VZB	
UM36542P	4.2V		ZL2	
UM36543P	4.3V		ZL3	
UM36544P	4.4V		ZL4	
UM36545P	4.5V		ZL5	
UM36546P	4.6V		ZL6	
UM36547P	4.7V		ZL7	
UM36548P	4.8V		ZL8	
UM36549P	4.9V		ZL9	
UM36550P	5.0V		ZLA	

Absolute Maximum Ratings (Note 1)

Symbol	Parameter	Value	Unit
V _{IN}	Supply Voltage on IN Pin	-0.3 to +7.5	V
V _{OUT}	Voltage on OUT Pin	-0.3 to +7.5	V
T _J	Operating Junction Temperature (Note 2, 3)	-40 to +125	°C
T _{STG}	Storage Temperature Range	-65 to +150	°C
T _L	Lead Temperature for Soldering 10 Seconds	+300	°C

Note 1: Absolute Maximum Ratings are those values beyond which the life of a device may be impaired.

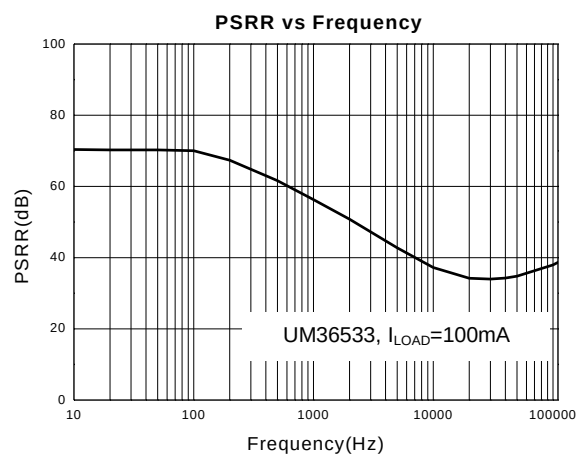
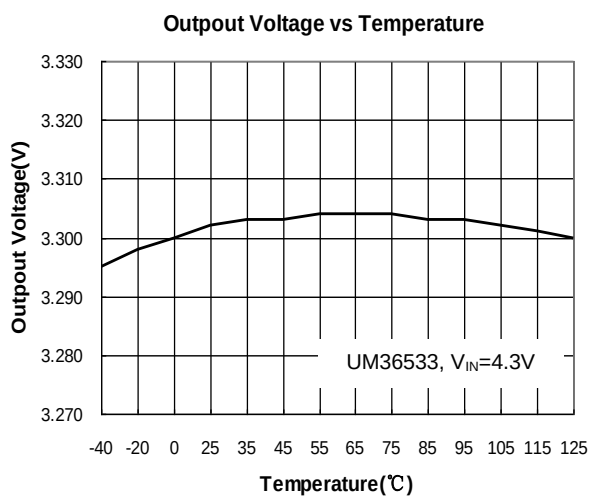
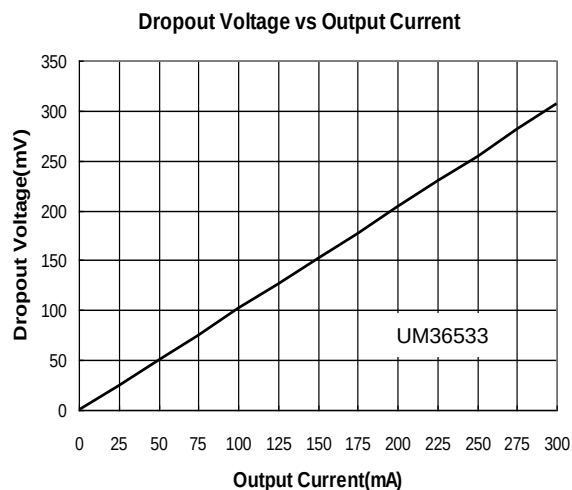
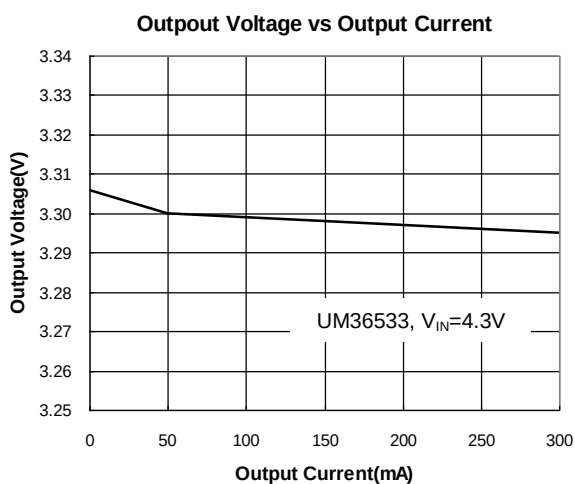
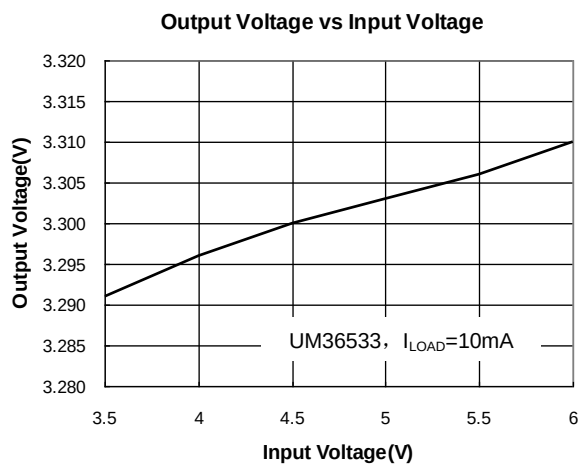
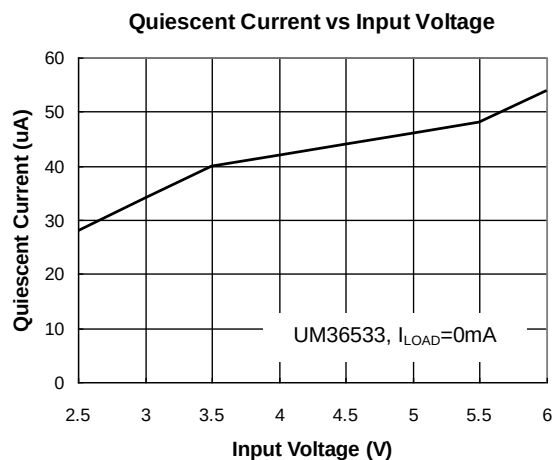
Note 2: The UM365xx is tested and specified under pulse load conditions such that $T_J \sim T_A$. The device is guaranteed to meet performance specifications from 0 °C to 70 °C. Specifications over the -40 °C to 125 °C operating junction temperature range are assured by design, characterization and correlation with statistical process controls.

Note 3: This IC includes overtemperature protection that is intended to protect the device during momentary overload conditions. Junction temperature will exceed 125 °C when overtemperature protection is active. Continuous operation above the specified maximum operating junction temperature may impair device reliability.

Electrical Characteristics
 $V_{CC}=V_{OUT}+1V$ ($V_{OUT}\geq 1.5V$) or $V_{CC}=2.5V$ ($V_{OUT}\leq 1.5V$), $T_A=-40^{\circ}C$ to $+85^{\circ}C$.

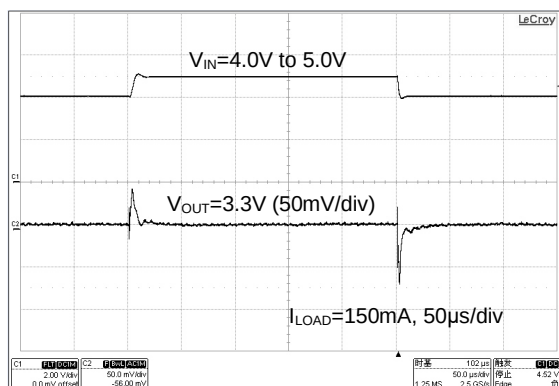
Symbol	Parameter	Test Conditions		Min	Typ	Max	Unit
V _{IN}	Input Voltage Range			2.5		6	V
V _{OUT}	Output Voltage Range			1.2		5.0	V
I _Q	Operating Quiescent Current	I _{OUT} =0mA			50	120	μA
		I _{OUT} =300mA			90	130	
I _{OUT}	Output Current			300			mA
	Output Voltage Accuracy	1mA≤I _{OUT} ≤300mA, T _A =-40 ℃ to +85 ℃		-2.5		+2.5	%
ΔV _{DO}	Dropout Voltage	I _{OUT} =100mA			150	200	mV
I _{LIMIT}	Output Current Limit			330	450	700	mA
	Output Voltage TC				100		ppm/ ℃
T _{SHDN}	Thermal-Shutdown Temperature				160		℃
ΔT _{SHDN}	Thermal-Shutdown Hysteresis				35		℃
	Line Regulation (V _{OUT} >4.0V)	V _{OUT} +0.3V≤V _{IN} ≤6.0V or V _{IN} >2.5V I _{OUT} =10mA				0.5	%V
	Line Regulation (V _{OUT} ≤4.0V)					0.3	
	Load Regulation (V _{OUT} >4.0V)	V _{IN} =V _{OUT} +1V or V _{IN} >2.5V 1mA≤I _{OUT} ≤300mA				1.2	%
	Load Regulation (V _{OUT} ≤4.0V)					0.6	
	Output Voltage Noise	10Hz to 100KHz C _{IN} =1μF, I _{OUT} =10mA			200		μV _{RMS}
PSRR	Power Supply Ripple Rejection (V _{OUT} >4.0V)	V _{IN} =V _{OUT} +1V or V _{IN} >2.5V I _{OUT} =100mA	f=100Hz	40			dB
			f=10kHz	30			
	Power Supply Ripple Rejection (V _{OUT} ≤4.0V)		f=100Hz	60			
			f=10kHz	30			
	ESD Rating	Human Body Mode		2			kV

Typical Performance Characteristics

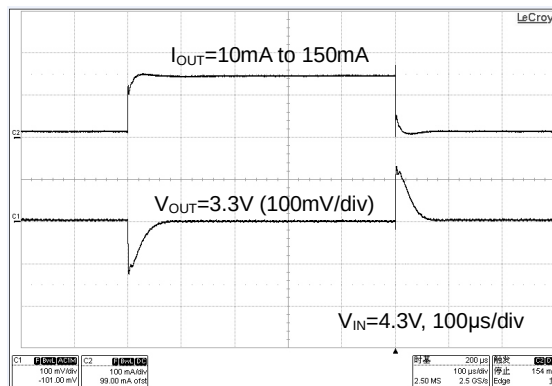


Typical Performance Characteristics (Continued)

Line Transient Response



Load Transient Response



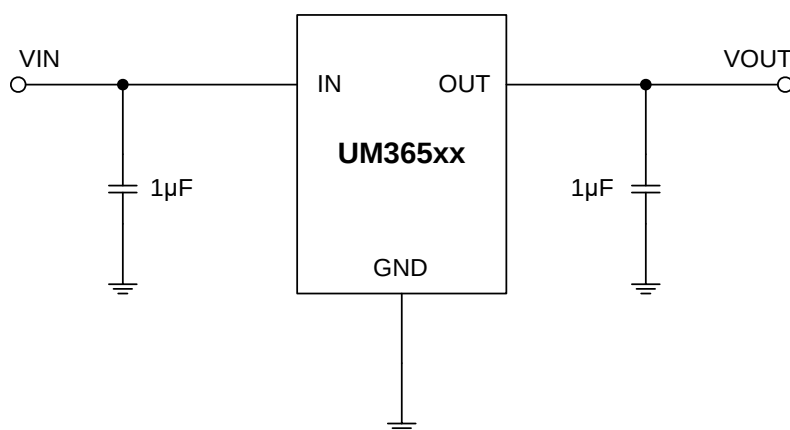
Pin Function

GND (Pin 1): Ground and Heat Sink. Solder to a ground plane or large pad to maximize heat dissipation.

OUT (Pin 2): Voltage Regulated Output. The OUT pin supplies power to the load. A minimum output capacitor of 1µF is required to ensure stability. Larger output capacitors may be required for applications with large transient loads to limit peak voltage transients.

IN (Pin 3): Power for UM365xx and Load Power is supplied to the devices through the IN pin. The IN pin should be locally bypassed to ground if the UM365xx series are more than a few inches away from another source of bulk capacitance. In general, the output impedance of a battery rises with frequency, so it is usually advisable to include an input bypass capacitor in battery-powered circuits. A capacitor in the range of 0.1µF to 1µF is usually sufficient.

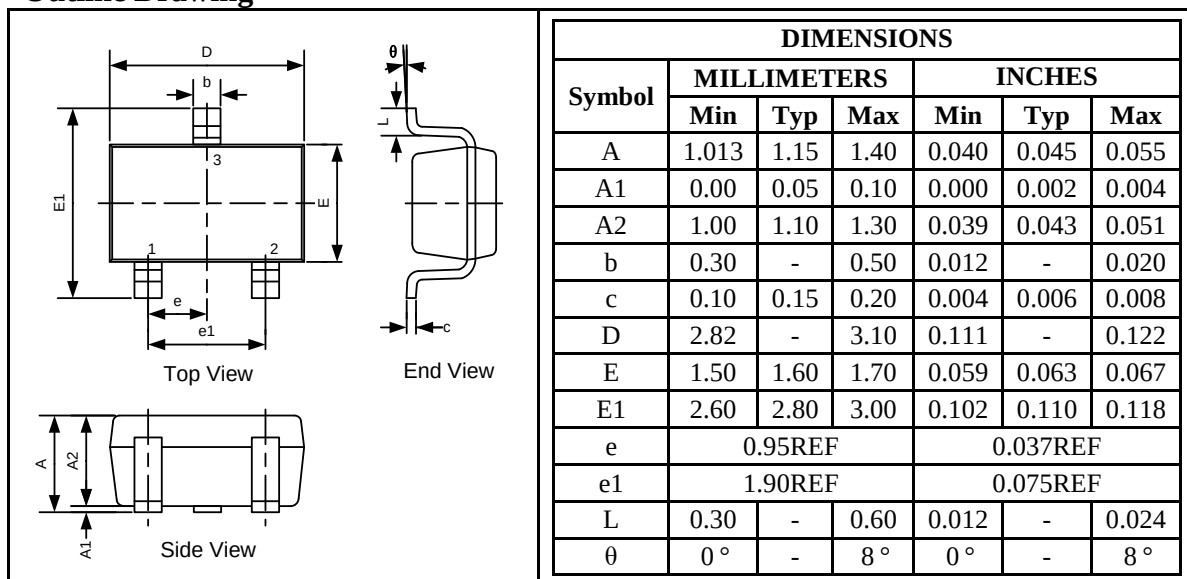
Typical Application Circuit



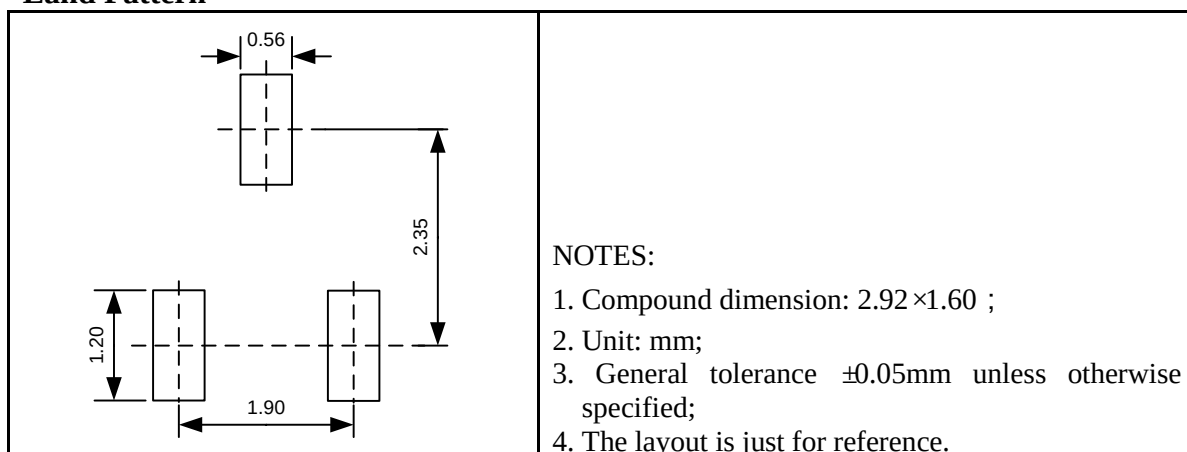
Package Information

UM365xxS: SOT23-3

Outline Drawing



Land Pattern

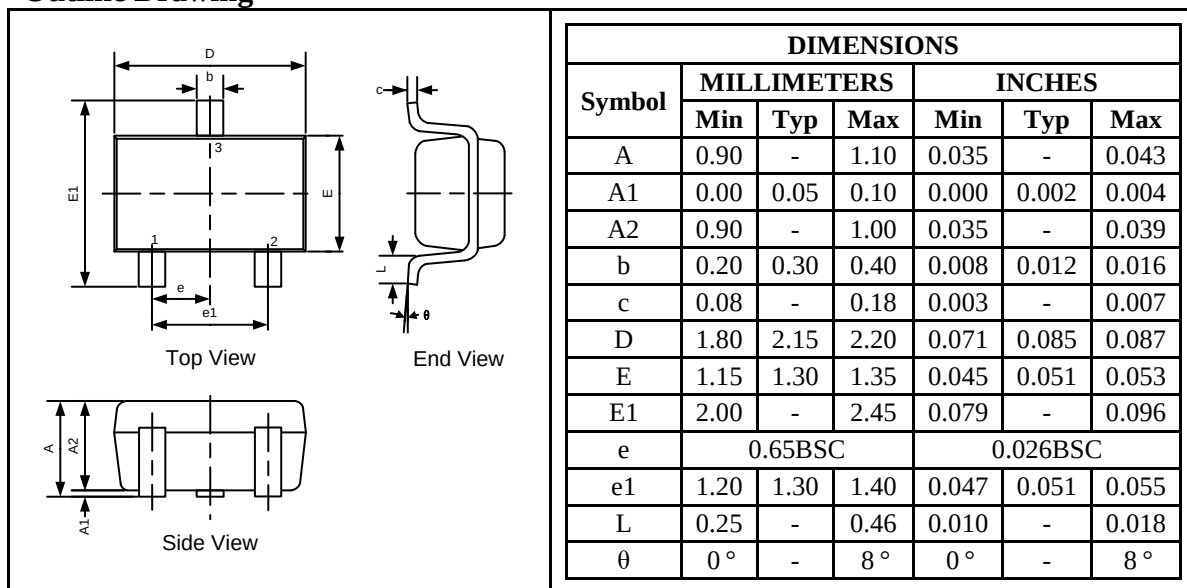


Tape and Reel Orientation

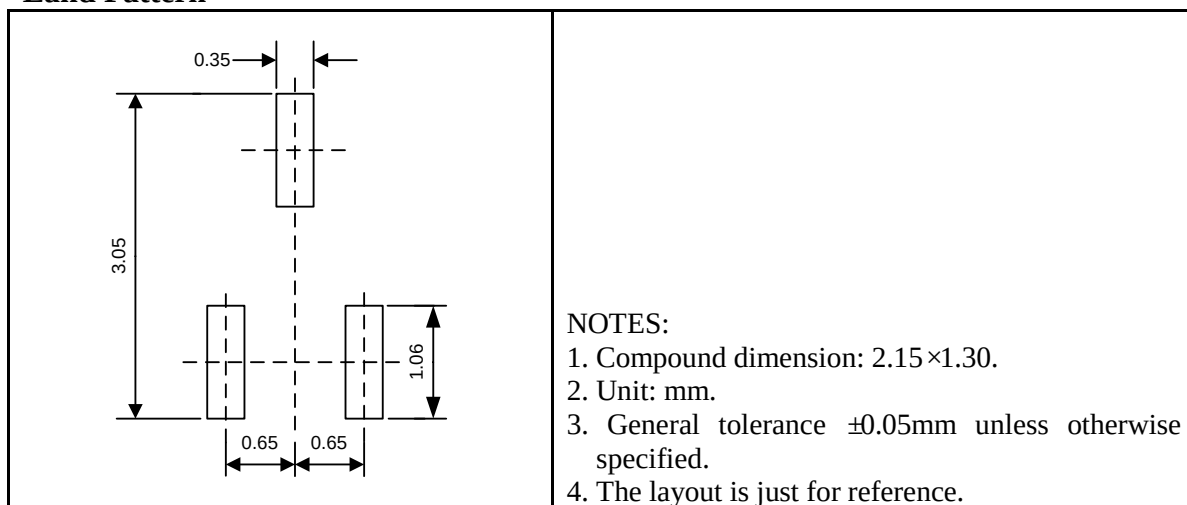


UM365xxP: SOT323

Outline Drawing



Land Pattern



Tape and Reel Orientation



GREEN COMPLIANCE

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All Union components are compliant with the RoHS directive, which helps to support customers in their compliance with environmental directives. For more green compliance information, please visit:

http://www.union-ic.com/index.aspx?cat_code=RoHSDeclaration

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