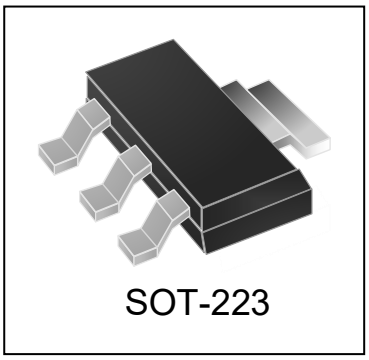
WT5100N

NPN Silicon Transistor

Features

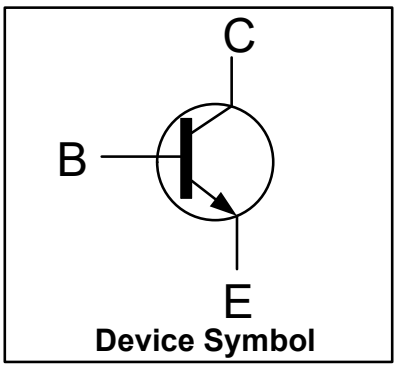
- Low Collector-Emitter Saturation Voltage
- High Current Capability
- Higher Efficiency Leading to Less Heat Generation


SOT-223

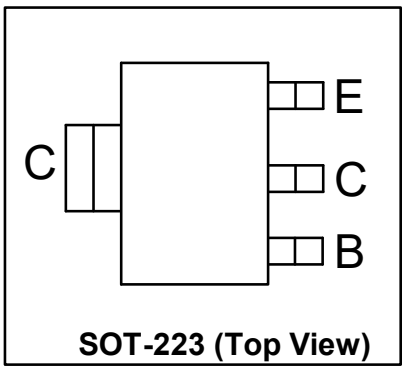
Mechanical Characteristics

- SOT-223 Package
- Marking : Marking Code
- RoHS Compliant & HF
- Device meets MSL3 requirement

Schematic & PIN Configuration



Device Symbol



SOT-223 (Top View)

Absolute Maximum Rating (T_{amb}=25°C unless otherwise noted)

Parameter	Symbol	Value	Unit
Collector-Base Voltage	V_{CBO}	100	V
Collector-Emitter Voltage	V_{CEO}	100	V
Emitter-Base Voltage	V_{EBO}	5	V
Continuous Collector Current	I_C	5.1	A
Peak Pulse Current	I_{CM}	10.2	A

Thermal Resistance

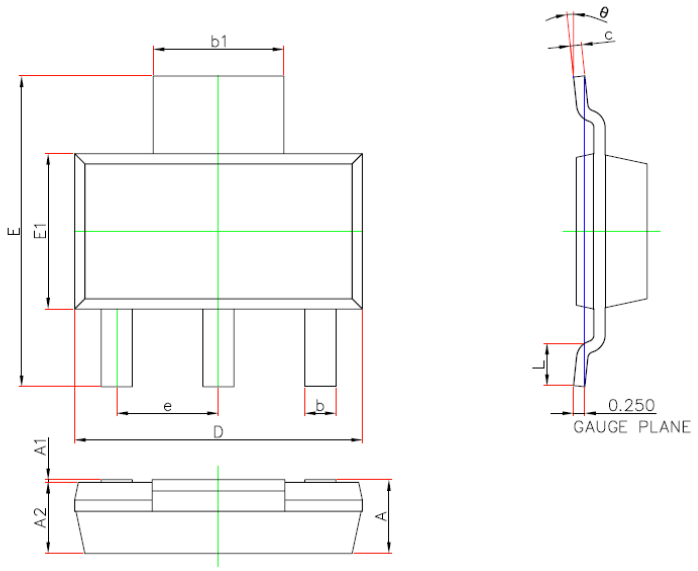
Parameter	Symbol	Value	Unit
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	125	°C/ W
Power Dissipation	P_D	1	W
Operating and Storage Temperature Range	T_J ,T_{STG}	-55 to +150	°C

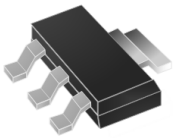
Electrical Characteristics (T_{amb}=25°C unless otherwise noted)

Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Collector-Base Breakdown Voltage	BV_{CBO}	I_C = 100μA, I_E=0	100	-	-	V
Collector-Emitter Breakdown Voltage	BV_{CEO}	I_C = 1mA, I_B=0	100	-	-	V
Emitter-Base Breakdown Voltage	BV_{EBO}	I_E = 100μA, I_C=0	5	-	-	V
Collector Cut-off Current	I_{CBO}	V_{CB} = 80V	-	-	100	nA
Emitter Cu-toff Current	I_{EBO}	V_{EB} = 5V	-	-	100	nA
Static Forward Current Transfer ratio	$h_{FE(1)}$	I_C = 500mA, V_{CE} = 2V	200	-	-	
	$h_{FE(2)}$	I_C = 1A, V_{CE} = 2V	150	-	-	
	$h_{FE(3)}$	I_C = 2A, V_{CE} = 2V	100	-	-	
	$h_{FE(4)}$	I_C = 4A, V_{CE} = 2V	50	-	-	
	$h_{FE(4)}$	I_C = 5A, V_{CE} = 2V	40	-	-	
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	I_C = 500mA, I_B = 50mA	-	-	40	mV
		I_C = 1A, I_B = 50mA	-	-	75	
		I_C = 1A, I_B = 10mA	-	-	150	
		I_C = 2A, I_B = 40mA	-	-	160	
		I_C = 4A, I_B = 200mA	-	-	225	
		I_C = 4A, I_B = 400mA	-	-	220	
		I_C = 4.5A, I_B = 225mA	-	-	245	
Base-Emitter Saturation Voltage	$V_{BE(sat)}$	I_C = 1A, I_B = 100mA	-	-	0.9	V
		I_C = 4A, I_B = 400mA	-	-	1.05	
Base-Emitter Turn-on Voltage	$V_{BE(on)}$	I_C = 2A, V_{CE}= 2V	-	-	0.85	V
Transitional Frequency	f_T	I_C = 100mA, V_{CE} = 10V, f = 100MHz	-	130	-	MHz
Collector Capacitance	C_C	V_{CB} = 10V, f = 1MHz	-	-	70	pF

Outline Drawing – SOT-223

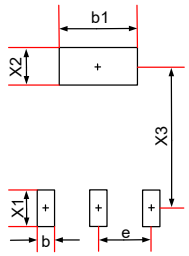
PACKAGE OUTLINE





SOT-223

DIMENSIONS				
SYMBOL	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	1.51	1.81	0.059	0.071
A1	0	0.14	0	0.006
A2	1.45	1.75	0.057	0.069
b	0.66	0.84	0.026	0.033
b1	2.90	3.10	0.114	0.122
c	0.20	0.35	0.008	0.014
D	6.20	6.60	0.244	0.260
e	2.30 BSC		0.091 BSC	
E	6.70	7.20	0.264	0.283
E1	3.30	3.70	0.130	0.146
L	0.75	-	0.030	-
θ	0	10°	0	10°

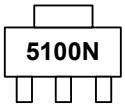


DIMENSIONS		
DIM	MILLIMETERS	INCHES
b1	3.30	0.130
b	1.20	0.047
e	2.30	0.091
X1	1.60	0.063
X2	1.60	0.063
X3	6.40	0.252

Notes

1. Dimensioning and tolerances per ANSI Y14.5M, 1985.
2. Controlling Dimension: Inches
3. The pad layout is for reference purposes only.
4. Dimensions are exclusive of mold flash and metal burrs.

Marking Codes

Part Number	WT5100N
Marking Code	

Package Information

Qty：2.5k/Reel

CONTACT INFORMATION

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For additional information, please contact your local Sales Representative.

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Product Specification Statement

1. The product specification aims to provide users with a reference regarding various product parameters, performance, and usage. It presents certain aspects of the product's performance in graphical form and is intended solely for users to select product and make product comparisons, enabling users to better understand and evaluate the characteristics and advantages of the product. It does not constitute any commitment, warranty, or guarantee.

2. The product parameters described in the product specification are numerical values, characteristics, and functions obtained through actual testing or theoretical calculations of the product in an independent or ideal state. Due to the complexity of product applications and variations in test conditions and equipment, there may be slight fluctuations in parameter test values. WAYON shall not guarantee that the actual performance of the product when installed in the customer's system or equipment will be entirely consistent with the product specification, especially concerning dynamic parameters. It is recommended that users consult with professionals for product selection and system design. Users should also thoroughly validate and assess whether the actual parameters and performance when installed in their respective systems or equipment meet their requirements or expectations. Additionally, users should exercise caution in verifying product compatibility issues, and WAYON assumes no responsibility for the application of the product.

3. WAYON strives to provide accurate and up-to-date information to the best of our ability. However, due to technical, human, or other reasons, WAYON cannot guarantee that the information provided in the product specification is entirely accurate and error-free. WAYON shall not be held responsible for any losses or damages resulting from the use or reliance on any information in these product specifications. WAYON reserves the right to revise or update the product specification and the products at any time without prior notice, and the user's continued use of the product specification is considered an acceptance of these revisions and updates. Prior to purchasing and using the product, users should verify the above information with WAYON to ensure that the product specification is the most current, effective, and complete. If users are particularly concerned about product parameters, please consult WAYON in detail or request relevant product test reports. Any data not explicitly mentioned in the product specification shall be subject to separate agreement.

4. Users are advised to pay attention to the parameter limit values specified in the product specification and maintain a certain margin in design or application to ensure that the product does not exceed the parameter limit values defined in the product specification. This precaution should be taken to avoid exceeding one or more of the limit values, which may result in permanent irreversible damage to the product, ultimately affecting the quality and reliability of the system or equipment.

5. The design of the product is intended to meet civilian needs and is not guaranteed for use in harsh environments or precision equipment. It is not recommended for use in systems or equipment such as medical devices, aircraft, nuclear power, and similar systems, where failures in these systems or equipment could reasonably be expected to result in personal injury. WAYON shall assume no responsibility for any consequences resulting from such usage.

6. Users should also comply with relevant laws, regulations, policies, and standards when using the product specification. Users are responsible for the risks and liabilities arising from the use of the product specification and must ensure that it is not used for illegal purposes. Additionally, users should respect the intellectual property rights related to the product specification and refrain from infringing upon any third-party legal rights. WAYON shall assume no responsibility for any disputes or controversies arising from the above-mentioned issues in any form.