WTA56

PNP Silicon Transistor

Features

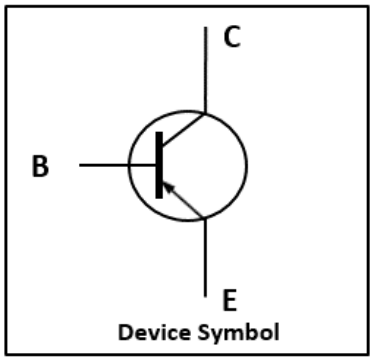
- Epitaxial Planar Die Construction
- Ideal for Low Power Amplification and Switching

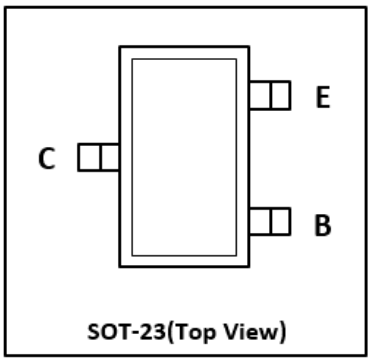


Mechanical Characteristics

- SOT-23 Package
- Marking : Making Code
- RoHS Compliant & HF
- Device meets MSL3 requirement

Schematic & PIN Configuration





Absolute Maximum Rating

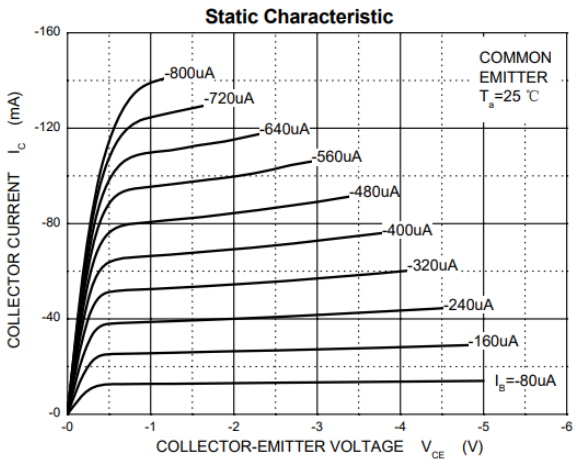
Parameter	Symbol	Value	Unit
Collector Base Voltage	V_{CBO}	-80	V
Collector Emitter Voltage	V_{CEO}	-80	V
Emitter Base Voltage	V_{EBO}	-4	V
Collector Current	I_C	-500	mA
Power Dissipation	P_D	310	mW
Junction Temperature Range	T_j	-55 ~ 150	°C
Storage Temperature Range	T_{stg}	-55 ~ 150	°C
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	403	°C/W

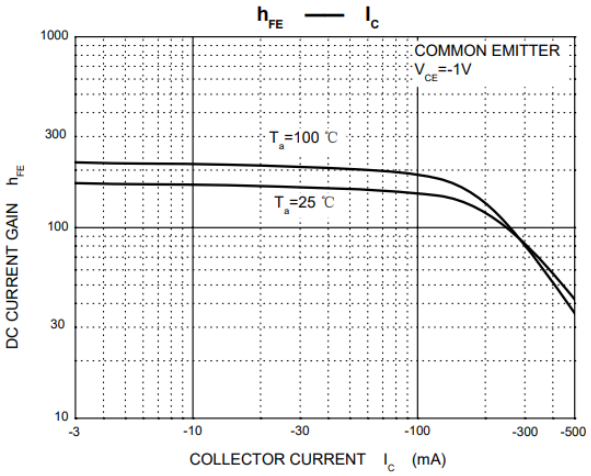
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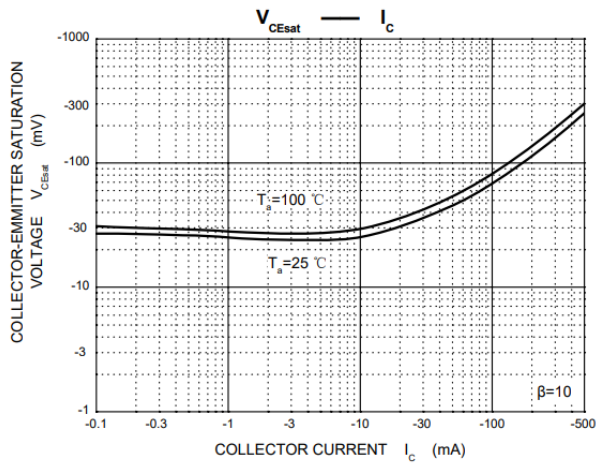
Electrical Characteristics (T_{amb}=25°C unless otherwise specified)

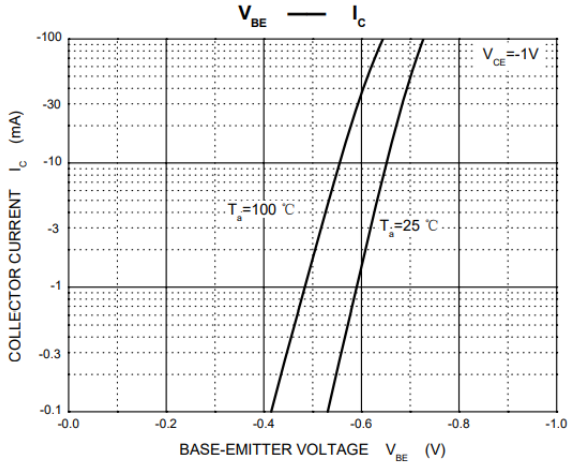
Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	I_C = -10μA, I_E = 0	-80	-	-	V
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	I_C = -1mA, I_B = 0	-80	-	-	V
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	I_E = -100μA, I_C = 0	-4	-	-	V
Collector Cut-off Current	I_{CBO}	V_{CB} = -80V, I_E = 0	-	-	-100	nA
Collector Cut-off Current	I_{CEO}	V_{CE} = -60V, I_B = 0	-	-	-100	nA
Emitter Cut-off Current	I_{EBO}	V_{EB} = -3V, I_C = 0	-	-	-100	nA
DC Current Gain	$h_{FE(1)}$	V_{CE} = -1V, I_C = -10mA	100	-	400	
	$h_{FE(2)}$	V_{CE} = -1V, I_C = -100mA	100	-	-	
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	I_C = -100mA, I_B = -10mA	-	-	-0.25	V
Base-Emitter Voltage	V_{BE}	V_{CE} = -1V, I_C = -100mA	-	-	-1.20	V
Transition Frequency	f_T	V_{CE}= -1V, I_C= -100mA, f= 100MHz	50	-	-	MHz

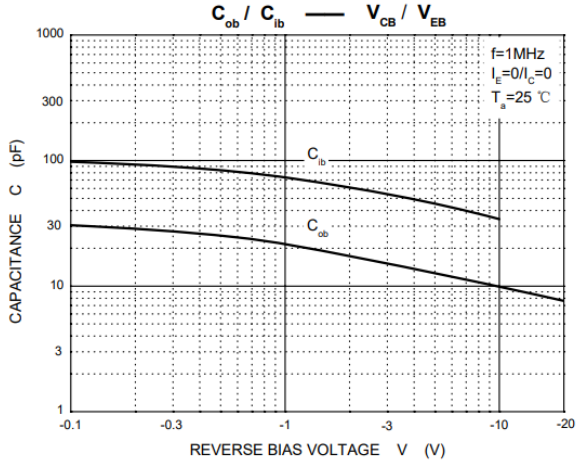
Typical Characteristics

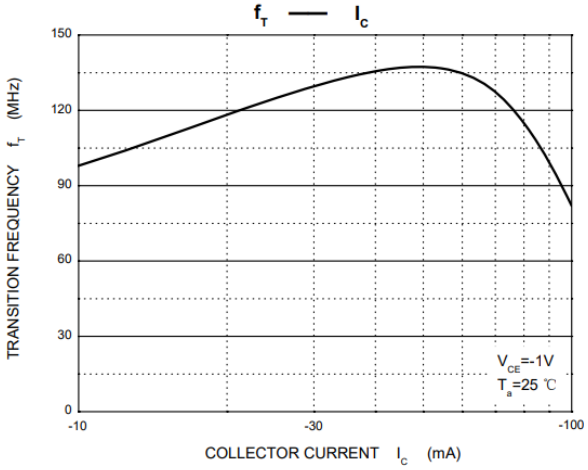





V_{CEsat} — I_C
COLLECTOR-EMMITTER SATURATION VOLTAGE V_{CEsat} (mV)
-1000
-300
-100
-30
-10
-3
-1
T_a=100 ℃
T_a=25 ℃
β=10
-0.1
-0.3
-1
-3
-10
-30
-100
-500
COLLECTOR CURRENT I_C (mA)

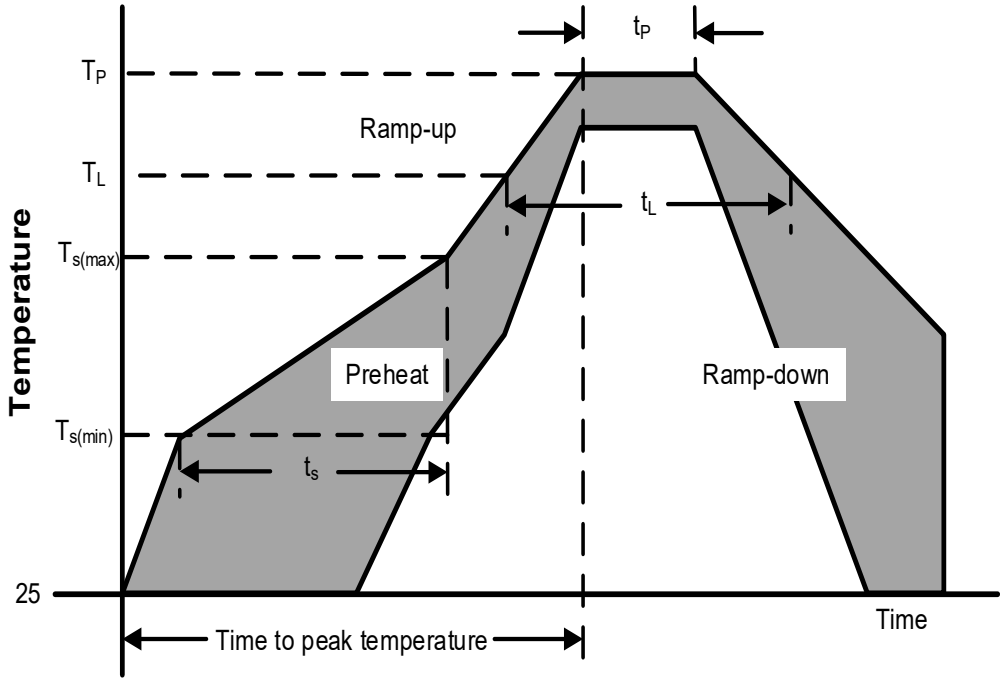

V_{BE} — I_C
COLLECTOR CURRENT I_C (mA)
-100
-30
-10
-3
-1
-0.3
-0.1
V_{CE}=-1V
T_a=100 ℃
T_a=25 ℃
-0.0
-0.2
-0.4
-0.6
-0.8
-1.0
BASE-EMITTER VOLTAGE V_{BE} (V)


C_{ob} / C_{ib} — V_{CB} / V_{EB}
CAPACITANCE C (pF)
1000
300
100
30
10
3
1
f=1MHz
I_E=0/I_C=0
T_a=25 ℃
C_{ib}
C_{ob}
-0.1
-0.3
-1
-3
-10
-20
REVERSE BIAS VOLTAGE V (V)


f_T — I_C
TRANSITION FREQUENCY f_T (MHz)
150
120
90
60
30
0
V_{CE}=-1V
T_a=25 ℃
-10
-30
-100
COLLECTOR CURRENT I_C (mA)

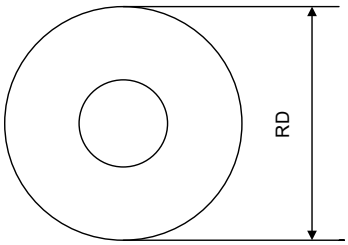
Soldering Parameters

Reflow Condition		Pb – Free assembly
Pre Heat	Temperature Min ($T_{s(min)}$)	150°C
	Temperature Max ($T_{s(max)}$)	200°C
	Time (min to max) (ts)	60 – 190 secs
Average ramp up rate (Liquidus Temp) (T_L) to peak		5°C/second max
$T_{S(max)}$ to T_L——Ramp-up Rate		5°C/second max
Reflow	Temperature (T_L) (Liquidus)	217°C
	Temperature (t_L)	60 – 150 seconds
Peak Temperature (T_P)		260+0/-5 °C
Time within actual peak Temperature (t_p)		20 – 40 seconds
Ramp-down Rate		5°C/second max
Time 25°C to peak Temperature (T_P)		8 minutes Max.
Do not exceed		280°C

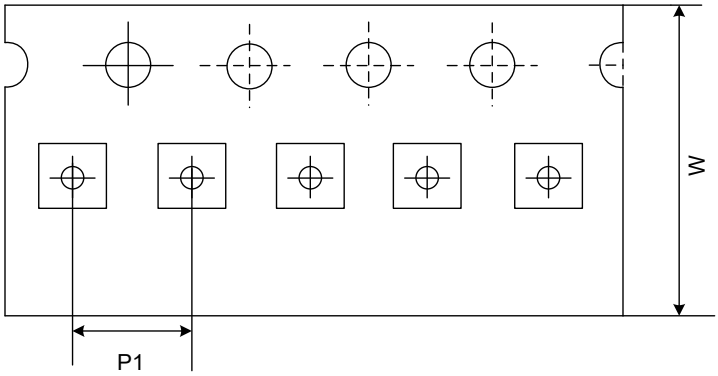


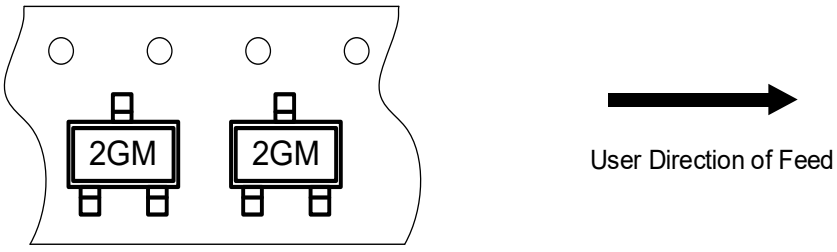
Tape And Reel Information

Reel Dimensions



Tape Dimensions

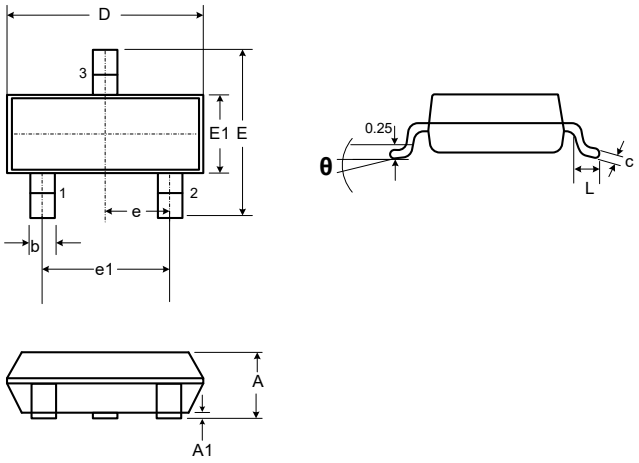


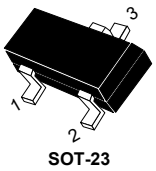


RD	Reel Dimensions	7 inch
W	Overall width of the carrier tape	8 mm
P1	Pitch between successive cavity centers	4 mm

Outline Drawing – SOT-23

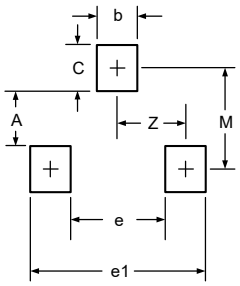
PACKAGE OUTLINE





SOT-23

SYMBOL	MILLIMETERS	
	MIN	MAX
A	0.90	1.15
A1	0.00	0.15
b	0.30	0.55
c	0.07	0.20
D	2.80	3.10
E	2.10	2.65
E1	1.20	1.40
e	0.95 BSC	
e1	1.78	2.05
L	0.30	0.50
θ	0°	8°



DIMENSIONS		
DIM	MILLIMETERS	INCHES
M	2.00	0.078
C	0.90（MIN）	0.035（MIN）
Z	0.95	0.037
e	1.10	0.043
e1	2.70	0.106
A	1.10	0.043
b	0.80（MIN）	0.031（MIN）

Notes:

Controlling Dimension: Millimeter.

Marking Codes

Part Number	WTA56
Marking Code	2GM

Package Information

Qty：3k/Reel

CONTACT INFORMATION

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For additional information, please contact your local Sales Representative.

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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.

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