WTA05

NPN Silicon Transistor

Features

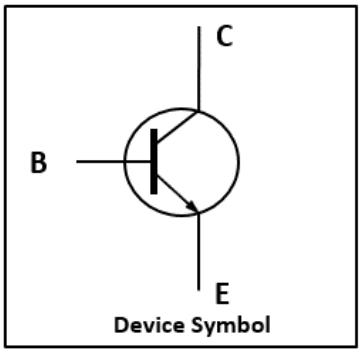
- Epitaxial Planar Die Construction
- Ideal for Low Power Amplification and Switching

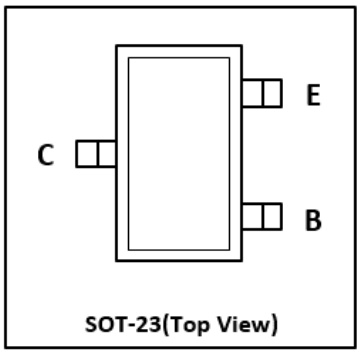


Mechanical Characteristics

- SOT-23 Package
- Marking : Making Code
- RoHS Compliant

Schematic & PIN Configuration





Absolute Maximum Rating

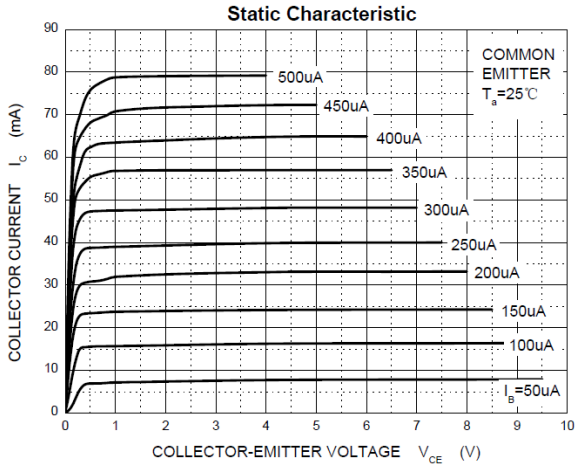
Parameter	Symbol	Value	Unit
Collector Base Voltage	V_{CBO}	60	V
Collector Emitter Voltage	V_{CEO}	60	V
Emitter Base Voltage	V_{EBO}	4	V
Collector Current	I_C	500	mA
Power Dissipation	P_D	310	mW
Junction Temperature	T_j	150	°C
Storage Temperature	T_{stg}	-55 ~ 150	°C
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	403	°C/W

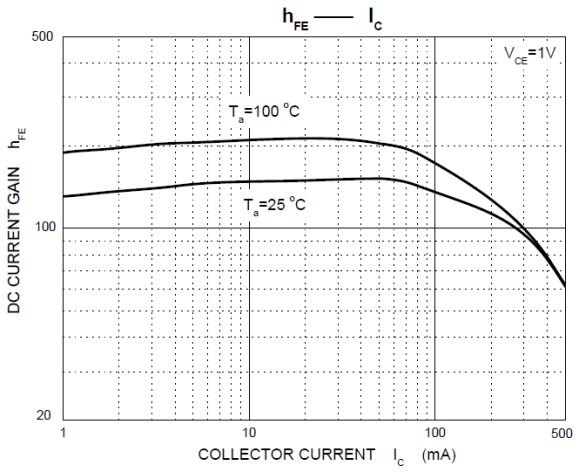
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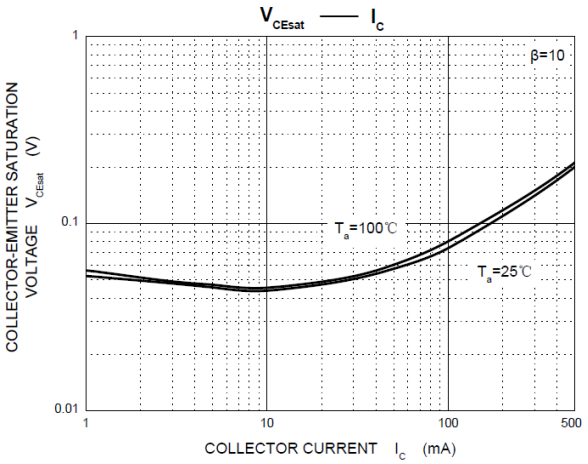
Electrical Characteristics (T_{amb}=25°C unless otherwise specified)

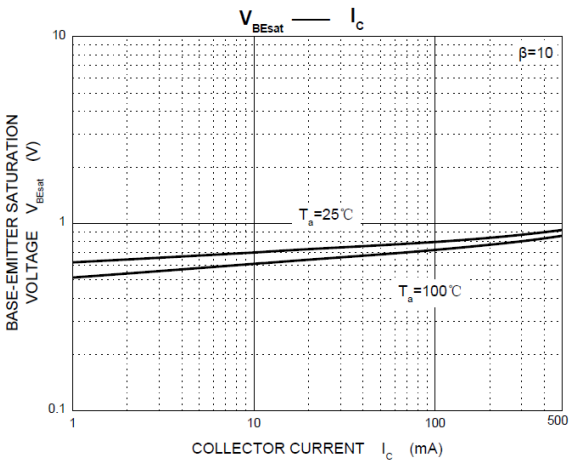
Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	I_C = 100μA, I_E = 0	60	-	-	V
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	I_C = 1mA, I_B = 0	60	-	-	V
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	I_E = 100μA, I_C = 0	4	-	-	V
Collector Cut-off Current	I_{CBO}	V_{CB} = 60V, 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}= 2V, I_C= 10mA, f= 100MHz	100	-	-	MHz

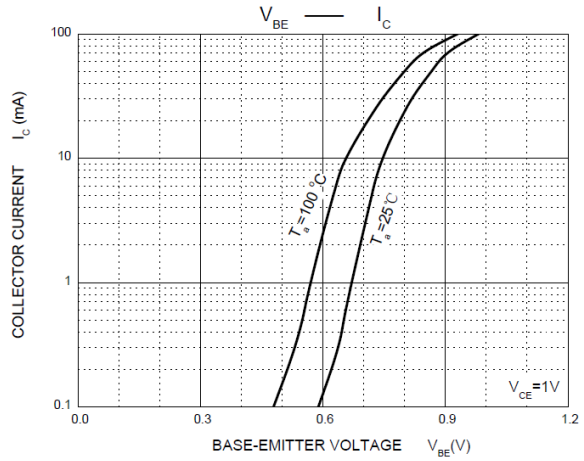
Typical Characteristics

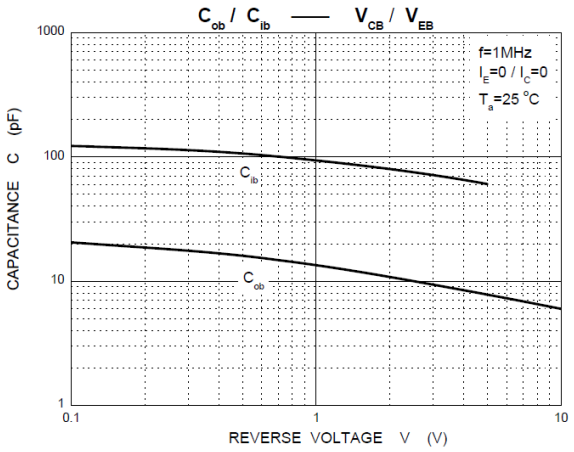


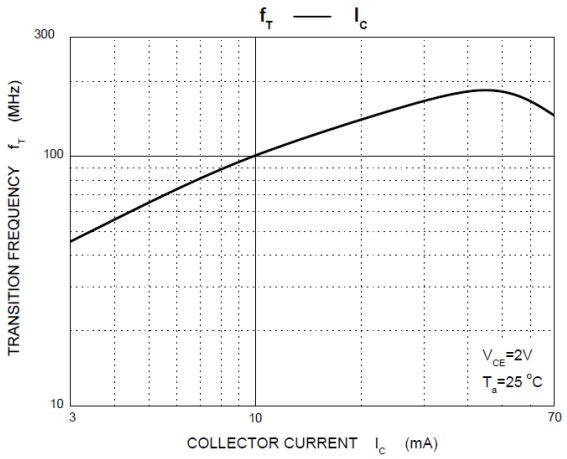



V_{CEsat} —— I_C
β=10
T_a=100℃
T_a=25℃
COLLECTOR-EMITTER SATURATION VOLTAGE V_{CEsat} (V)
COLLECTOR CURRENT I_C (mA)
1
0.1
0.01
1
10
100
500


V_{BEsat} —— I_C
β=10
T_a=25℃
T_a=100℃
BASE-EMITTER SATURATION VOLTAGE V_{BEsat} (V)
COLLECTOR CURRENT I_C (mA)
10
1
0.1
1
10
100
500

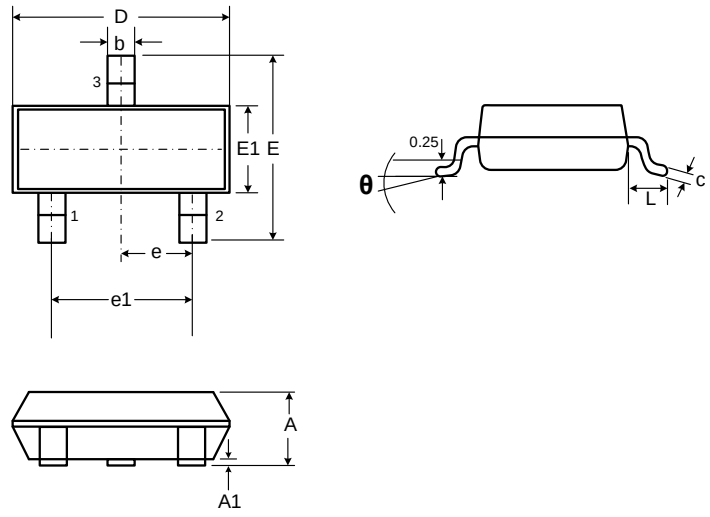

V_{BE} —— I_C
T_a=100 °C
T_a=25℃
V_{CE}=1V
COLLECTOR CURRENT I_C (mA)
BASE-EMITTER VOLTAGE V_{BE}(V)
100
10
1
0.1
0.0
0.3
0.6
0.9
1.2

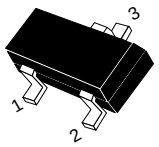

C_{ob} / C_{ib} —— V_{CB} / V_{EB}
f=1MHz
I_E=0 / I_C=0
T_a=25 °C
C_{ib}
C_{ob}
CAPACITANCE C (pF)
REVERSE VOLTAGE V (V)
1000
100
10
1
0.1
1
10


f_T —— I_C
V_{CE}=2V
T_a=25 °C
TRANSITION FREQUENCY f_T (MHz)
COLLECTOR CURRENT I_C (mA)
300
100
10
3
10
70

Outline Drawing – SOT-23

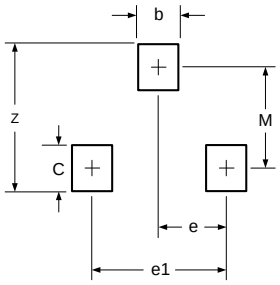
PACKAGE OUTLINE





SOT-23

DIMENSIONS				
SYMBOL	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	0.90	1.15	0.035	0.045
A1	0.00	0.10	0.000	0.004
b	0.30	0.50	0.012	0.020
c	0.08	0.15	0.003	0.006
D	2.80	3.00	0.110	0.118
E	2.25	2.55	0.089	0.100
E1	1.20	1.40	0.047	0.055
e	0.95 BSC		0.0374 BSC	
e1	1.80	2.00	0.071	0.079
L	0.30	0.50	0.012	0.020
θ	0	8°	0	8°



DIMENSIONS		
DIM	INCHES	MILLIMETERS
M	0.0795	2.02
C	0.0315	0.80
Z	0.111	2.82
e	0.037 BSC	0.95 BSC
e1	0.075 BSC	1.9 BSC
b	0.0315	0.80

Notes

1. Dimensioning and tolerances per ANSI Y14.5M, 1985.
2. Controlling Dimension: Inches
3. Pin 3 is the cathode (Unidirectional Only).
4. Dimensions are exclusive of mold flash and metal burrs.

Marking Codes

Part Number	WTA05
Marking Code	1H

Package Information

Qty：3k/Reel

CONTACT INFORMATION

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WAYON website: **http://www.way-on.com**
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Specifications are subject to change without notice.
The device characteristics and parameters in this data sheet can and do vary in different applications and actual device performance may vary over time.
Users should verify actual device performance in their specific applications.