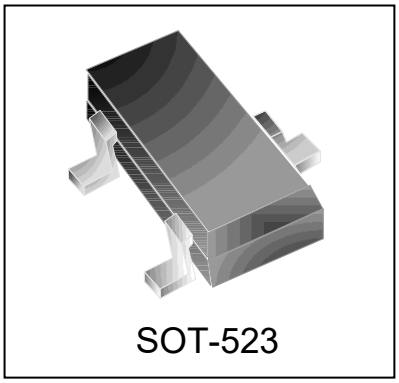
WT3904T

NPN Silicon Transistor

Features

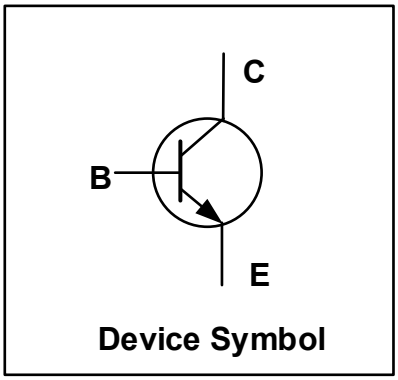
- Complementary to WT3906T
- Small Package

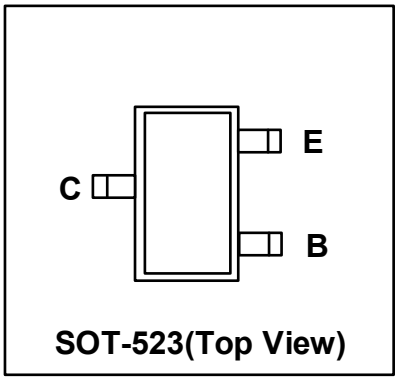


Mechanical Characteristics

- SOT-523 Package
- Marking : Making Code
- RoHS Compliant & HF

Schematic & PIN Configuration





Absolute Maximum Rating

Parameter	Symbol	Value	Unit
Collector Base Voltage	V_{CBO}	60	V
Collector Emitter Voltage	V_{CEO}	40	V
Emitter Base Voltage	V_{EBO}	6	V
Collector Current	I_C	200	mA
Collector Power Dissipation	P_C	200	mW
Operating Temperature Range	T_j	-55 ~ 150	°C
Storage Temperature	T_{stg}	-55 ~ 150	°C
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	625	°C/W

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Electrical Characteristics (Ta=25°C unless otherwise noted)

Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	I_C = 10μA, I_E = 0	60	-	-	V
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	I_C = 1mA, I_B = 0	40	-	-	V
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	I_E = 10μA, I_C = 0	6	-	-	V
Collector Cut-off Current	I_{CBO}	V_{CB} = 60V, I_E = 0	-	-	50	nA
Collector Cut-off Current	I_{CEX}	V_{CE} = 30V, $V_{EB(off)}$ = 3V	-	-	50	nA
Emitter Cut-off Current	I_{EBO}	V_{EB} = 5V, I_C = 0	-	-	100	nA
DC Current Gain	$h_{FE(1)}$	V_{CE} =1V, I_C = 0.1mA	40	-	-	-
	$h_{FE(2)}$	V_{CE} = 1V, I_C = 1mA	70	-	-	-
	$h_{FE(3)}$	V_{CE} = 1V, I_C = 10mA	100	-	300	-
	$h_{FE(4)}$	V_{CE} = 1V, I_C = 50mA	60	-	-	-
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	I_C =10mA, I_B = 1mA	-	-	0.2	V
		I_C = 50mA, I_B = 5mA			0.3	V
Base-Emitter Saturation Voltage	$V_{BE(sat)}$	I_C =10mA, I_B = 1mA	0.65	-	0.85	V
		I_C = 50mA, I_B = 5mA	-	-	0.95	V
Transition Frequency	f_T	V_{CE}=20V, I_C=10mA, f=100MHz	300	-	-	MHz
Collector Output Capacitance	C_{ob}	V_{CB}=5V, I_E=0, f=1MHz	-	-	4	pF
Base Input Capacitance	C_{ib}	V_{EB}=0.5V, I_C=0, f=1MHz	-	-	8	pF
Delay Time	t_d	V_{CC} = 3V, $V_{BE(off)}$ = -0.5V, I_C = 10mA, I_{B1} = 1mA	-	-	35	ns
Rise Time	t_r	V_{CC} = 3V, $V_{BE(off)}$ = -0.5V, I_C = 10mA, I_{B1} = 1mA	-	-	35	ns
Storage Time	t_s	V_{CC} = 3V, I_C = 10mA, I_{B1} = I_{B2} = 1mA	-	-	200	ns
Fall Time	t_f	V_{CC} = 3V, I_C = 10mA, I_{B1} = I_{B2} = 1mA	-	-	50	ns

Typical Characteristics

Figure 1.Static Characteristics

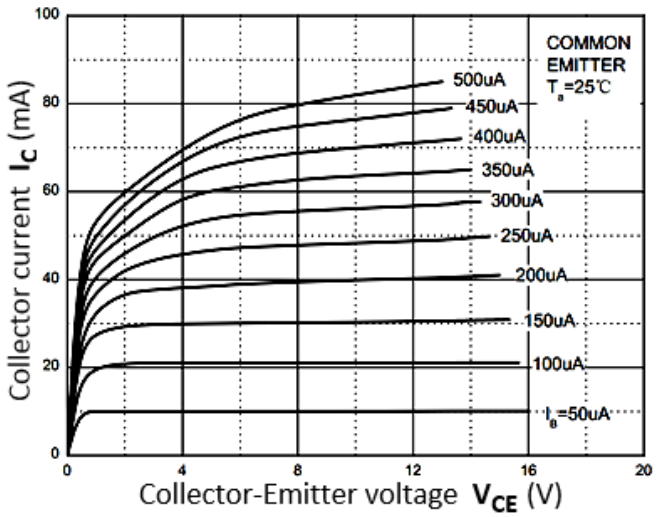


Figure 2. h_{FE} vs. I_C

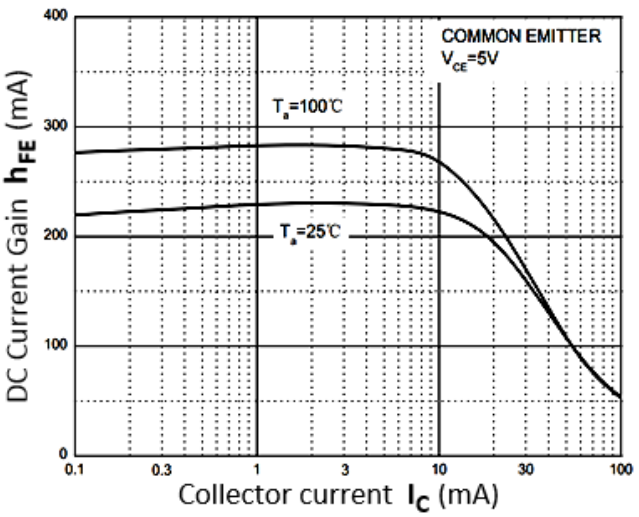


Figure 3. $V_{BE(sat)}$ vs. I_C

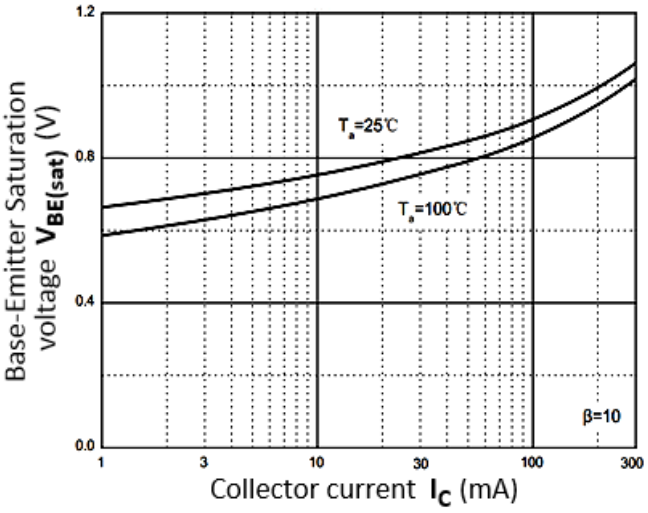


Figure 4. $V_{CE(sat)}$ vs. I_C

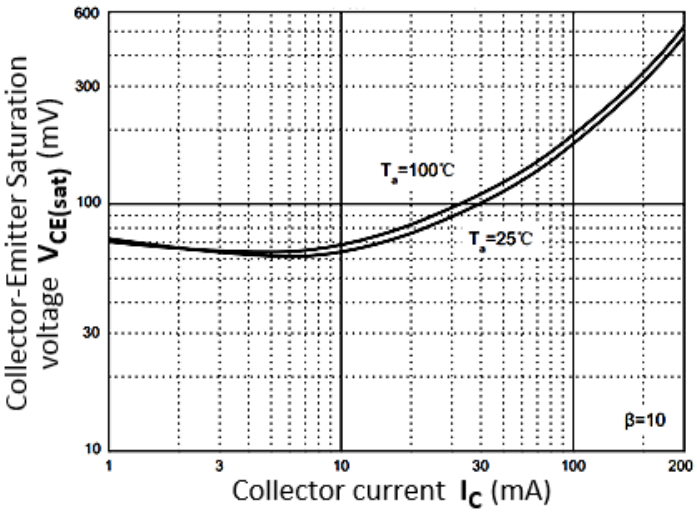


Figure 5. I_C vs.V_{BE}

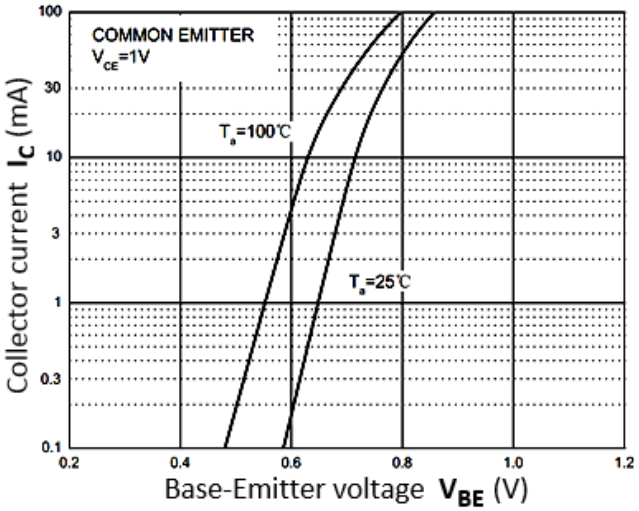


Figure 6. C_{ob} / C_{ib} vs. V_{CB} / V_{EB}

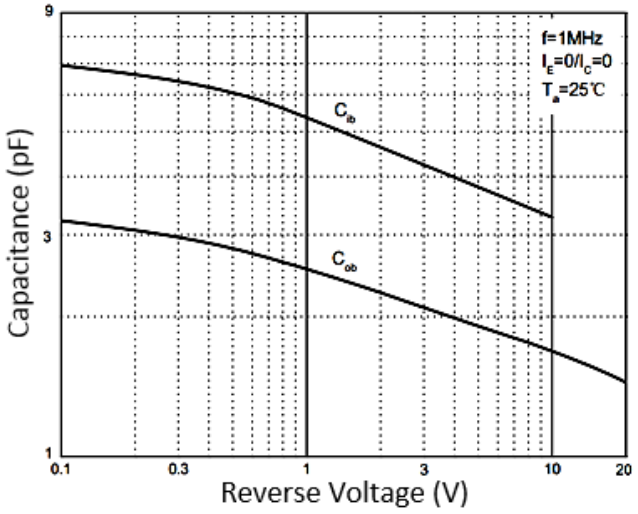


Figure 7. f_T vs. I_C

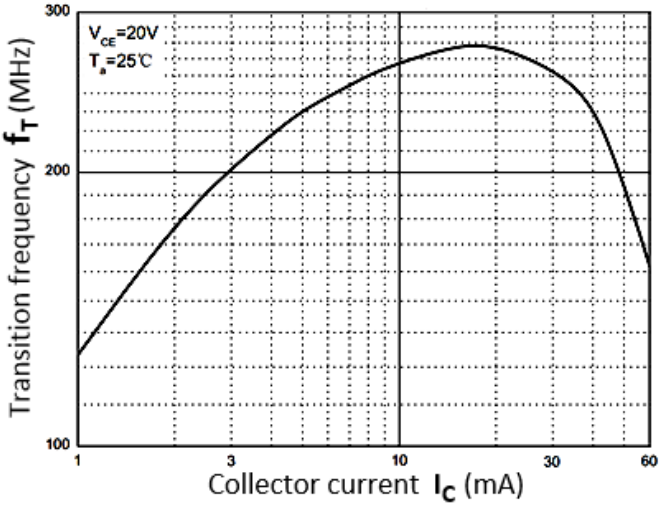
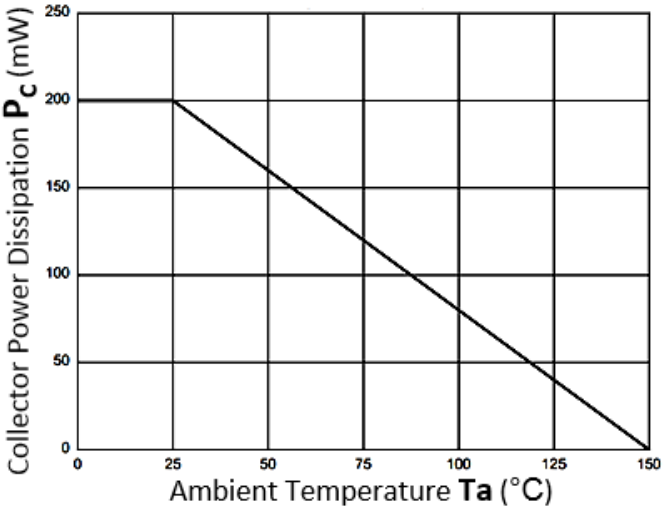
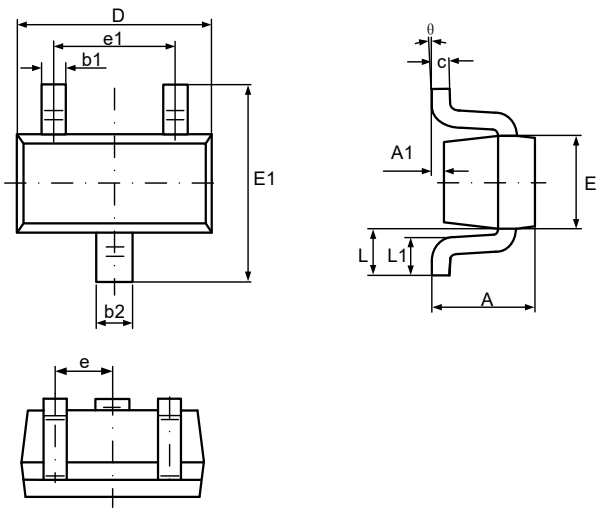


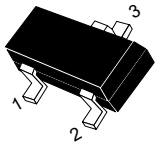
Figure 8. P_C vs. T_a



Outline Drawing – SOT-523

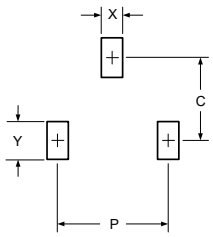
PACKAGE OUTLINE





SOT-523

SYMBOL	MILIMETER	
	MIN	MAX
A	0.65	0.90
A1	0.00	0.10
b1	0.10	0.30
b2	0.20	0.40
c	0.10	0.20
D	1.45	1.70
E	0.60	0.90
E1	1.45	1.85
e1	0.90	1.10
e	0.45	0.55
L	0.30	0.50
L1	0.20	0.46
θ	0°	8°

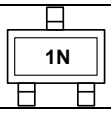


DIM	MILLIMETERS
C	1.30
P	1.00
X	0.50
Y	0.60

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	WT3904T
Marking Code	

Package Information

Qty：3k/Reel

CONTACT INFORMATION

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WAYON website: **http://www.way-on.com**
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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.