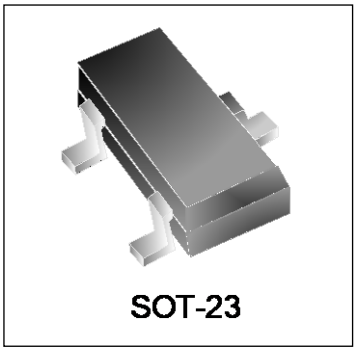
WT2222A-AT

Features

NPN Small Signal Transistor

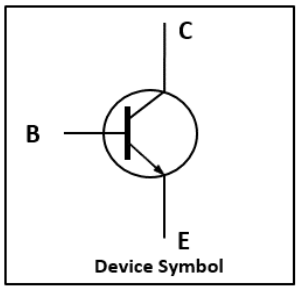
- Epitaxial Planar Die Construction
- Low Saturation Voltage
- AEC-Q101 Qualified

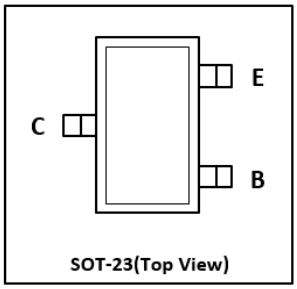


Mechanical Characteristics

- SOT-23 Package
- Marking : Making Code
- Packaging: Tape and Reel per EIA 481
- RoHS Compliant & HF
- Device meets MSL1 requirement

Schematic & PIN Configuration





Absolute Maximum Rating (@TA = +25°C, unless otherwise specified.)

Parameter	Symbol	Value	Unit
Collector Base Voltage	V_{CBO}	75	V
Collector Emitter Voltage	V_{CEO}	40	V
Emitter Base Voltage	V_{EBO}	6	V
Continuous Collector Current	I_C	0.6	A

Thermal Characteristics (@TA = +25°C, unless otherwise specified.)

Power Dissipation	P_D	310	mW
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	403	°C/W
Operating and Storage Temperature Range	T_J ,T_{STG}	-55 to +150	°C

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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	75	-	-	V
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	I_C = 10mA, 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	-	-	10	nA
Collector Cut-Off Current	I_{CEX}	V_{CE} = 60V, $V_{EB(off)}$ = 3V	-	-	10	nA
Emitter Cut-Off Current	I_{EBO}	V_{EB} = 5V, I_C = 0	-	-	10	nA
DC Current Gain	$h_{FE(1)}$	V_{CE} = 10V, I_C = 0.1mA	35	-	-	
	$h_{FE(2)}$	V_{CE} = 10V, I_C = 1.0mA	50	-	-	
	$h_{FE(3)}$	V_{CE} = 10V, I_C = 10mA	75	-	-	
	$h_{FE(4)}$	V_{CE} = 10V, I_C = 150mA	100	-	300	
	$h_{FE(5)}$	V_{CE} = 10V, I_C = 500mA	40	-	-	
	$h_{FE(6)}$	V_{CE} = 1.0V, I_C = 150mA	35	-	-	
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	I_C = 500mA, I_B = 50mA	-	-	1	V
		I_C = 150mA, I_B = 15mA	-	-	0.3	V
Base-Emitter Saturation Voltage	$V_{BE(sat)}$	I_C = 500mA, I_B = 50mA	-	-	2.0	V
		I_C = 150mA, I_B = 15mA	-	-	1.2	V
Transition Frequency	f_T	V_{CE}=20V, I_C=20mA, f=100MHz	300	-	-	MHz
Delay Time	t_d	V_{CC} = 30V, $V_{BE(off)}$ = -0.5V, I_C = 150mA, I_{B1} = 15mA	-	-	10	ns
Rise Time	t_r		-	-	25	ns
Storage Time	t_s	V_{CC} = 30V, I_C = 150mA I_{B1} = -I_{B2} = 15mA	-	-	225	ns
Fall Time	t_f		-	-	60	ns

Typical Characteristics

Figure 1.Static Characteristics

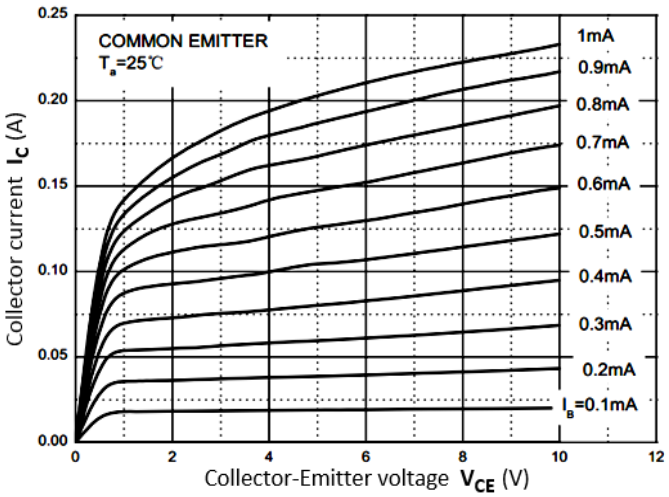


Figure 2. h_{FE} vs. I_C

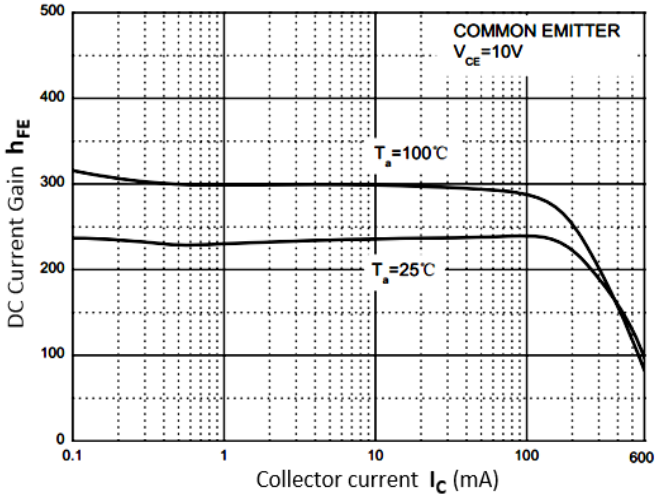


Figure 3. $V_{CE(sat)}$ vs. I_C

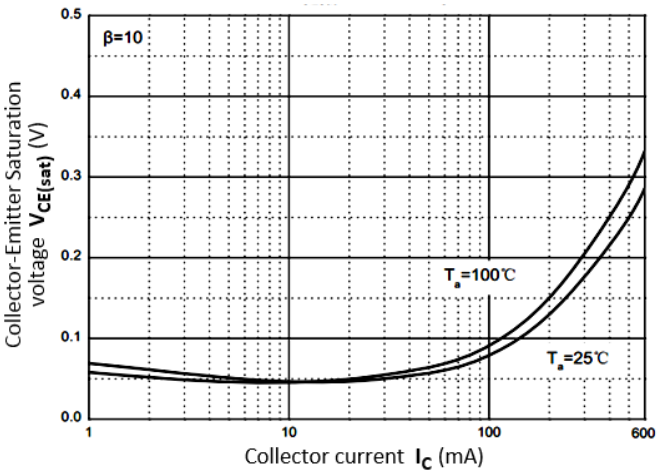


Figure 4. $V_{BE(sat)}$ vs. I_C

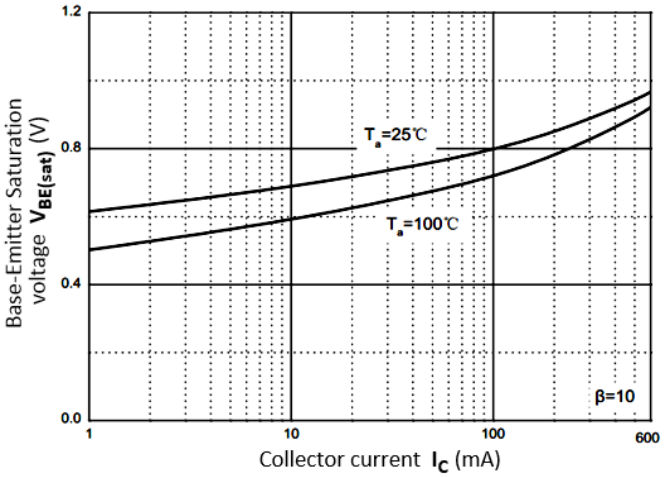


Figure 5. I_C vs. V_{BE}

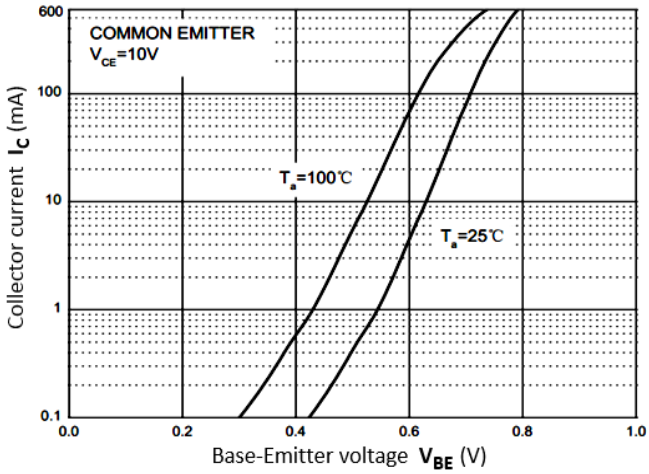


Figure 6. C_{ob} / C_{ib} vs. V_{CB} / V_{EB}

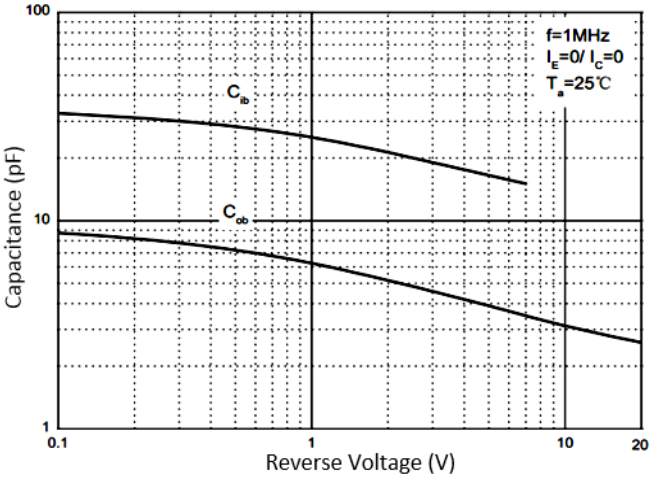
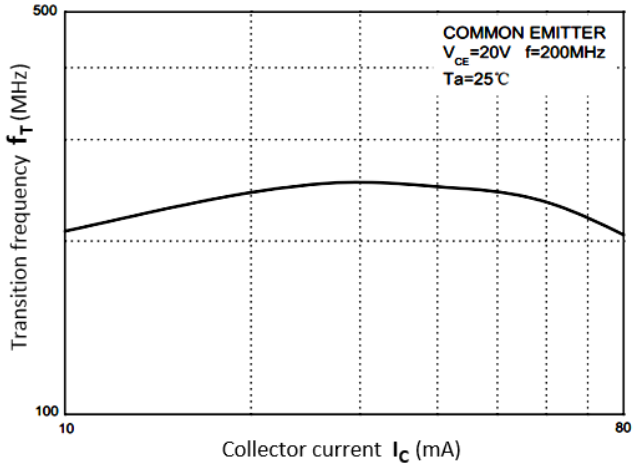
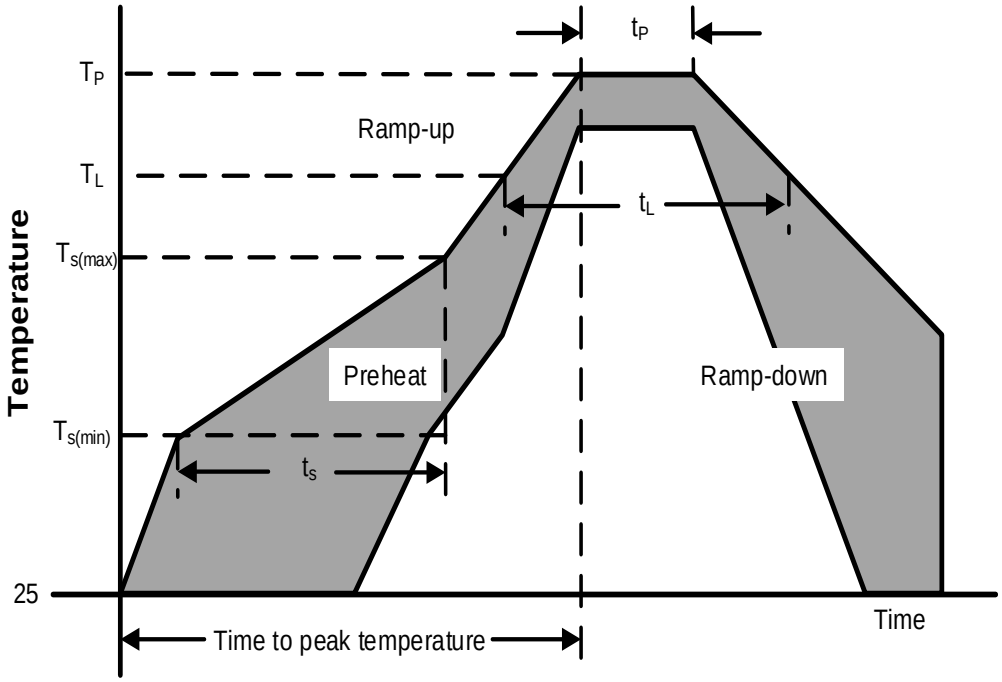


Figure 7. f_T vs. I_C



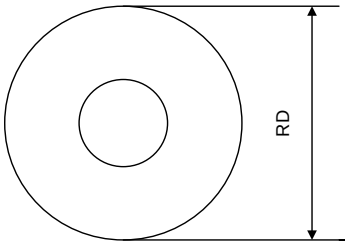
Soldering Parameters

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

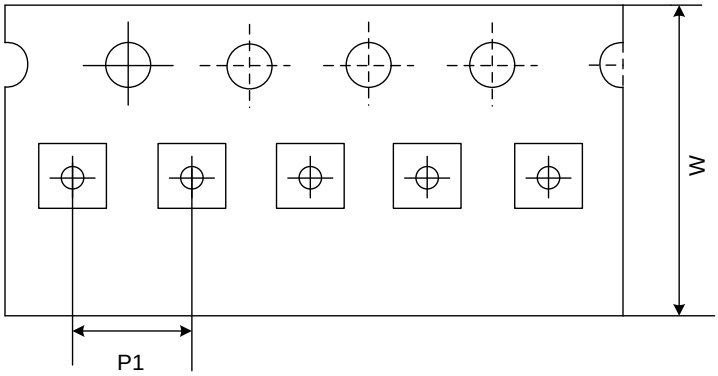


Tape And Reel Information

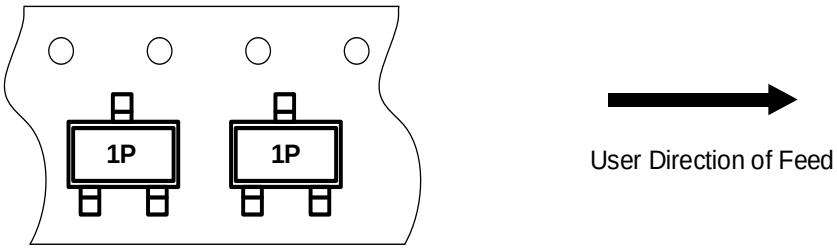
Reel Dimensions



Tape Dimensions



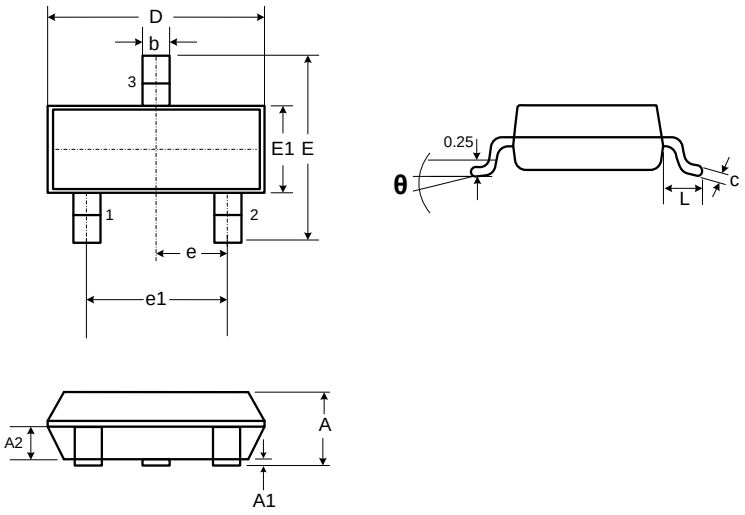
Quadrant Assignments For PIN1 Orientation In Tape

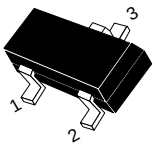


RD	Reel Dimensions	7 inch
W	Overall width of the carrier tape	8 mm
P1	Pitch between successive cavity centers	4mm

Outline Drawing – SOT-23

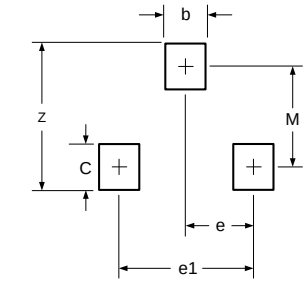
PACKAGE OUTLINE





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
A2	0.60	0.70	0.0236	0.0275
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. Dimensions are exclusive of mold flash and metal burrs..

Marking Codes

Part Number	WT2222A-AT
Marking Code	1P

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.