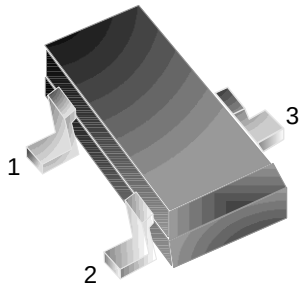
WT2907A

PNP Silicon Transistor

Features

- Complementary to WT2222A
- Epitaxial Planar Die Construction
- Ideal for Medium Power Amplification and Switching

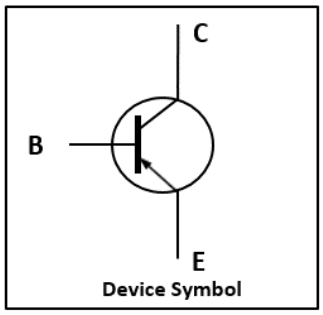


SOT-23

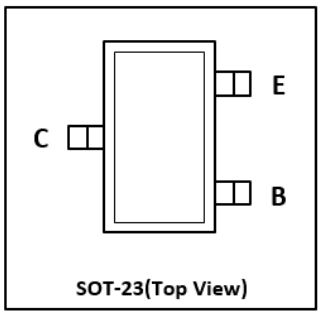
Mechanical Characteristics

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

Schematic & PIN Configuration



Device Symbol



SOT-23(Top View)

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}	-5	V
Collector Current	I_C	-600	mA
Power Dissipation	P_D	350	mW
Junction Temperature	T_j	-55 ~ 150	°C
Storage Temperature	T_{stg}	-55 ~ 150	°C
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	357	°C/W
Thermal Resistance, Junction to Case	$R_{\theta JC}$	185	°C/W

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	-60	-	-	V
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	I_C = -10mA, I_B = 0	-60	-	-	V
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	I_E = -10μA, I_C = 0	-5	-	-	V
Collector Cut-Off Current	I_{CBO}	V_{CB} = -50V,I_E = 0	-	-	-100	nA
Collector Cut-Off Current	I_{CEX}	V_{CE} = -30V,$V_{EB(off)}$ = -0.5V	-	-	-50	nA
Emitter Cut-Off Current	I_{EBO}	V_{EB} = -3V,I_C = 0	-	-	-50	nA
DC Current Gain	$h_{FE(1)}$	V_{CE} = -10V, I_C = -0.1mA	75	-	-	
	$h_{FE(2)}$	V_{CE} = -10V, I_C = -1mA	100	-	-	
	$h_{FE(3)}$	V_{CE} = -10V, I_C = -10mA	100	-	-	
	$h_{FE(4)}$	V_{CE} = -10V, I_C = -150mA	100	-	300	
	$h_{FE(5)}$	V_{CE} = -10V, I_C = -500mA	50	-	-	
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	I_C = -150mA,I_B = -15mA	-	-	-0.4	V
		I_C = -500mA,I_B = -50mA	-	-	-1.6	V
Base-Emitter Saturation Voltage	$V_{BE(sat)}$	I_C = -150mA,I_B = -15mA	-	-	-1.3	V
		I_C = -500mA,I_B = -50mA	-	-	-2.6	V
Transition Frequency	f_T	V_{CE}=-20V,I_C=-50mA,f=100MHz	200	-	-	MHz
Delay Time	t_d	V_{CC} = -30V, I_C = -150mA, I_{B1} = -15mA	-	-	10	ns
Rise Time	t_r		-	-	25	ns
Storage Time	t_s	V_{CC} = -6V, I_C = -150mA, I_{B1} = -I_{B2} = -15mA	-	-	225	ns
Fall Time	t_f		-	-	60	ns

Typical Characteristics

Figure 1.Static Characteristics

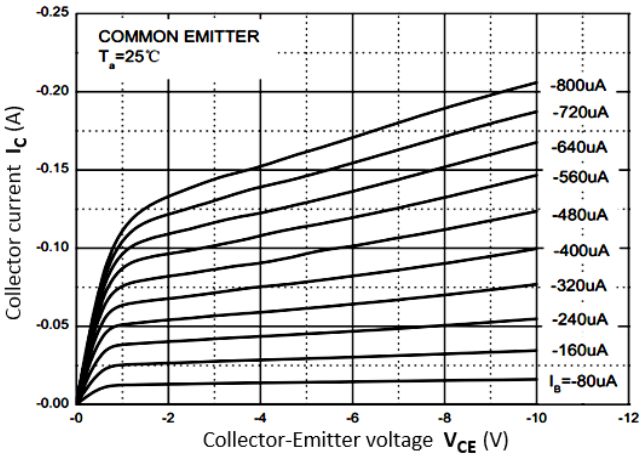


Figure 2. h_{FE} vs. I_C

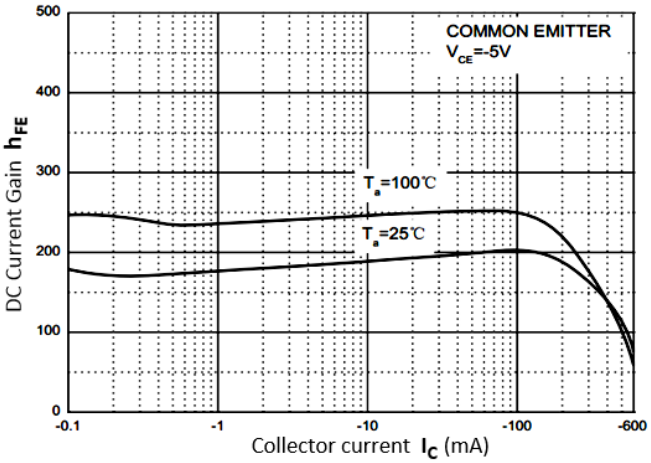


Figure 3. $V_{CE(sat)}$ vs. I_C

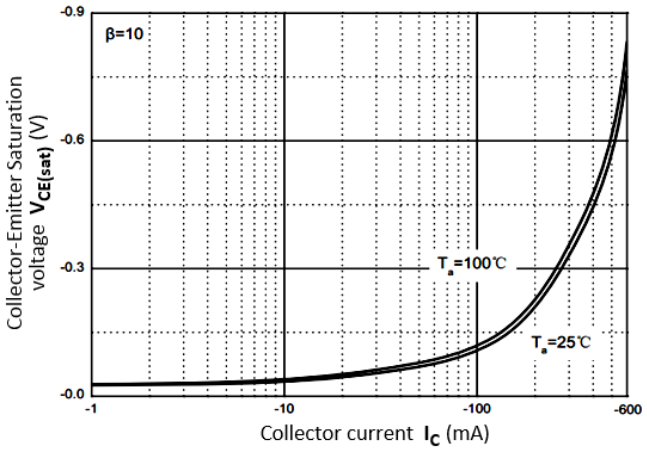


Figure 4. $V_{BE(sat)}$ vs. I_C

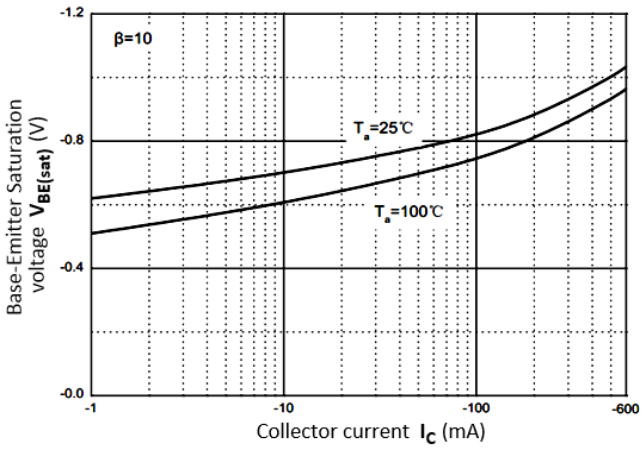


Figure 5. I_C vs. V_{BE}

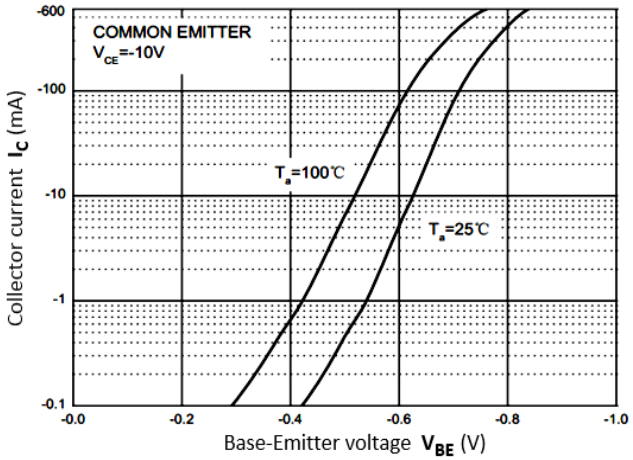
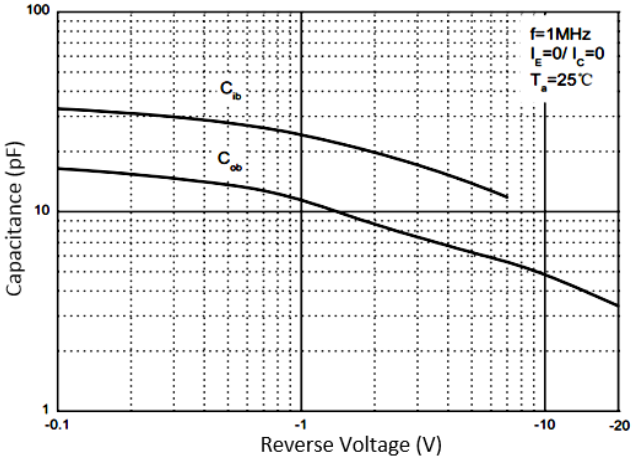
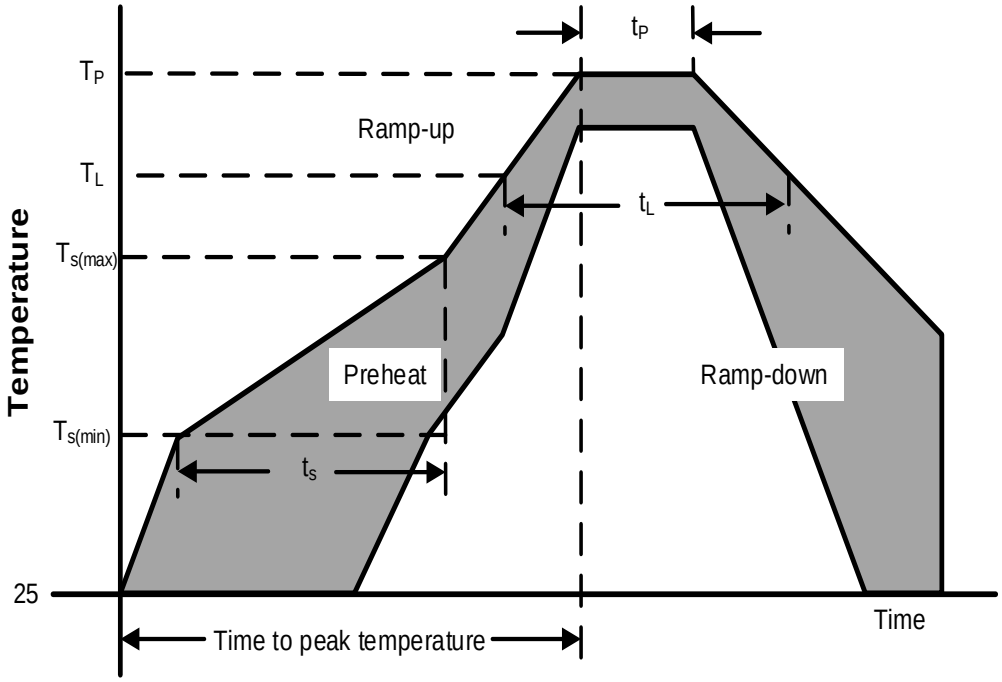


Figure 6. C_{ob} / C_{ib} vs. V_{CB} / V_{EB}



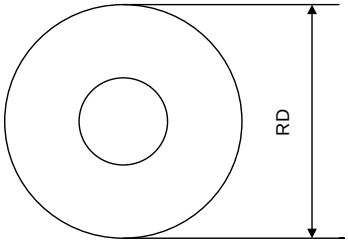
Soldering Parameters

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

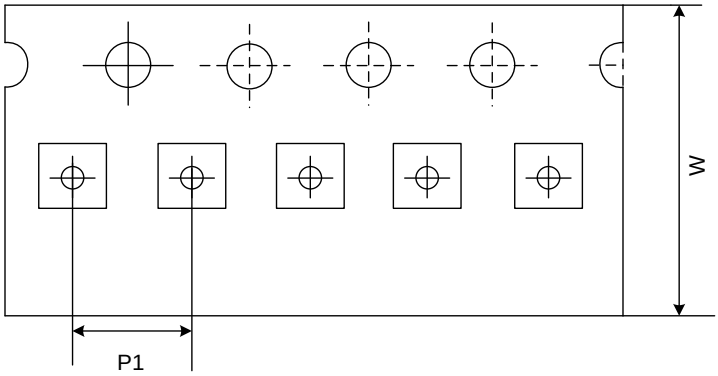


Tape And Reel Information

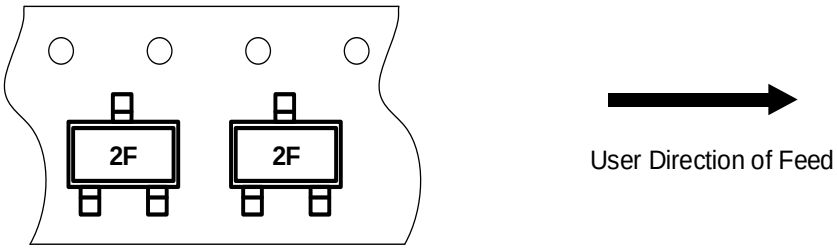
Reel Dimensions



Tape Dimensions



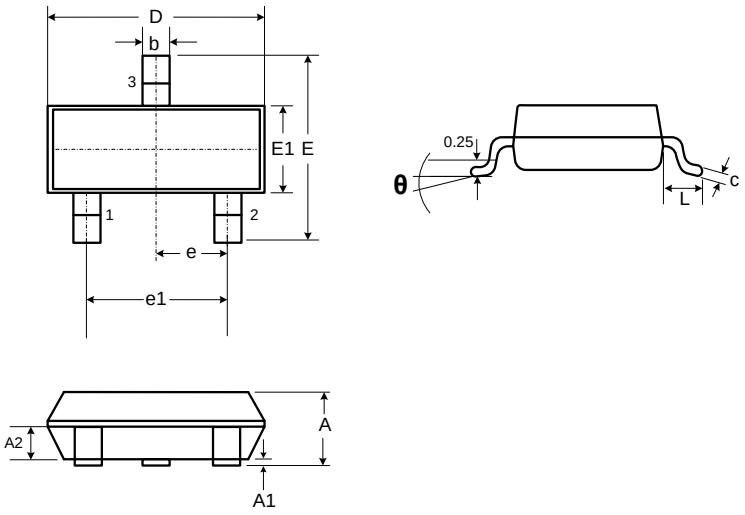
Quadrant Assignments For PIN1 Orientation In Tape

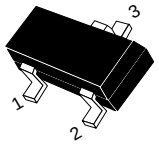


RD	Reel Dimensions	7 inch
W	Overall width of the carrier tape	8 mm
P1	Pitch between successive cavity centers	4mm

Outline Drawing – SOT-23

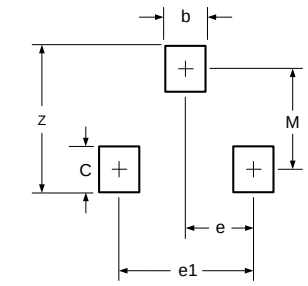
PACKAGE OUTLINE





SOT-23

DIMENSIONS				
SYMBOL	MILLIMETER		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°

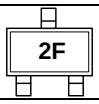


DIMENSIONS		
DIM	INCHES	MILLIMETERS
M	0.0795	2.02
C	0.0315	0.80
Z	0.111	2.82
e	0.037 BSC	0.95 BSC
e1	0.075 BSC	1.9 BSC
b	0.0315	0.80

Notes

1. 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	WT2907A
Marking Code	

Package Information

Qty：3k/Reel

CONTACT INFORMATION

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