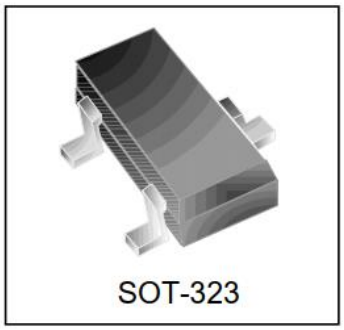
WT847BG-AT

Features

NPN Small Signal Transistor

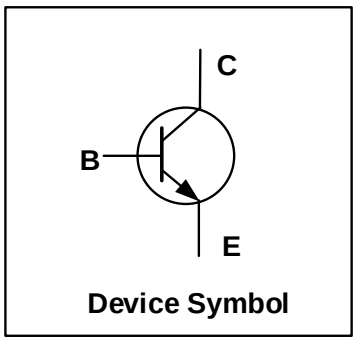
- Ideally Suited for Automatic Insertion
- For Switching and AF Amplifier Applications
- AEC-Q101 qualified



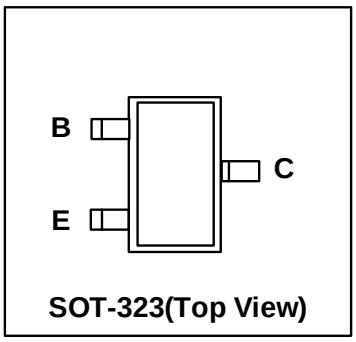
Mechanical Characteristics

- SOT-323 Package
- Marking : Making Code
- Packaging: Tape and Reel per EIA 481
- RoHS Compliant & HF
- Device meets MSL1 requirement

Schematic & PIN Configuration



Device Symbol



SOT-323(Top View)

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

Parameter	Symbol	Value	Unit
Collector Base Voltage	V_{CBO}	50	V
Collector Emitter Voltage	V_{CEO}	45	V
Emitter Base Voltage	V_{EBO}	6	V
Continuous Collector Current	I_C	0.1	A

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

Power Dissipation	P_D	200	mW
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	625	°C/W
Operating and Storage Temperature Range	T_J ,T_{STG}	-55 to +150	°C

Electrical Characteristics (T_{amb}=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	50	-	-	V
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	I_C = 10mA, I_B = 0	45	-	-	V
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	I_E = 10μA, I_C = 0	6	-	-	V
Collector Cut-off Current	I_{CBO}	V_{CB} = 30V, I_E = 0	-	-	50	nA
Emitter Cut-off Current	I_{EBO}	V_{EB} = 5V, I_C = 0	-	-	100	nA
DC Current Gain	h_{FE}	V_{CE} = 5V, I_C = 2mA	200	-	450	
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	I_C = 100mA, I_B = 5mA	-	-	0.25	V
		I_C = 10mA, I_B = 0.5mA	-	-	0.60	V
Base-Emitter Saturation Voltage	$V_{BE(sat)}$	I_C = 100mA, I_B = 5mA	-	0.7	-	V
		I_C = 10mA, I_B = 0.5mA	-	0.9	-	V
Base-Emitter Voltage	$V_{BE(on)}$	V_{CE} = 5V, I_C = 2mA	-	-	0.70	V
		V_{CE} = 5V, I_C = 10mA	-	-	0.77	V
Transition Frequency	f_T	V_{CE}=5V,I_C=10mA, f=100MHz	100	-	-	MHz
Collector Output Capacitance	C_{ob}	V_{CB} = 10V, f = 1MHz	-	-	4.5	pF

Typical Characteristics

Figure 1. Static Characteristics

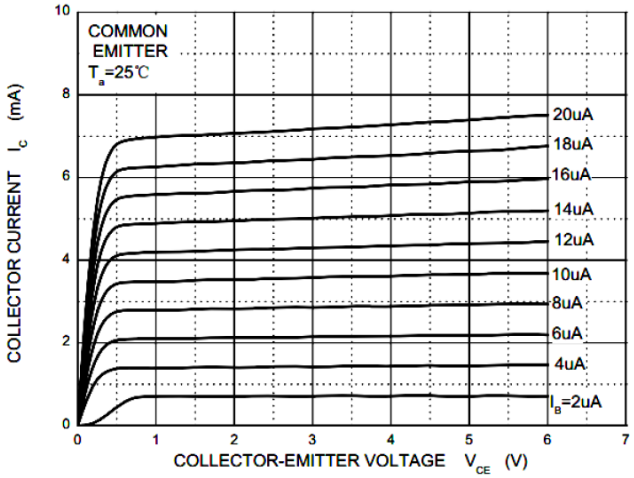


Figure 2. h_{FE} vs. I_C

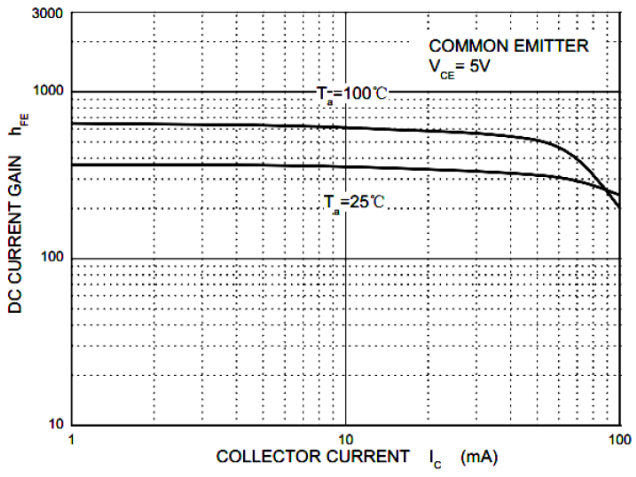


Figure 3. $V_{BE(sat)}$ vs. I_C

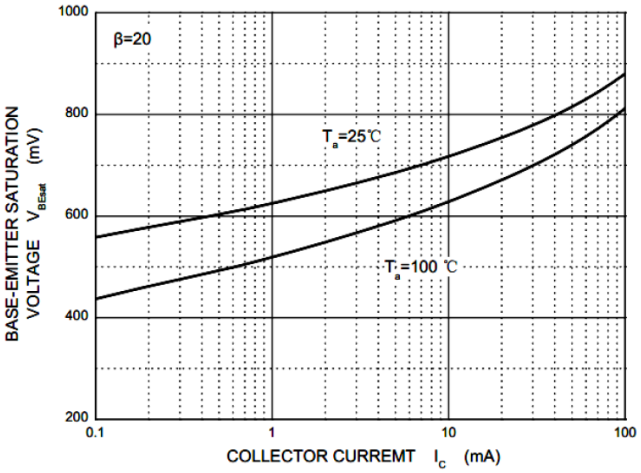


Figure 4. $V_{CE(sat)}$ vs. I_C

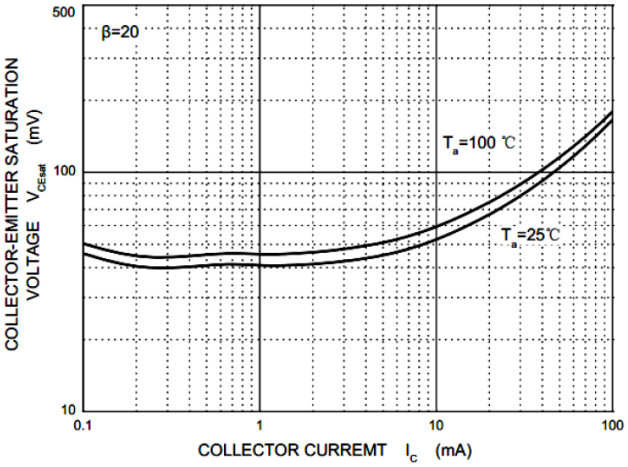


Figure 5. I_C vs. V_{BE}

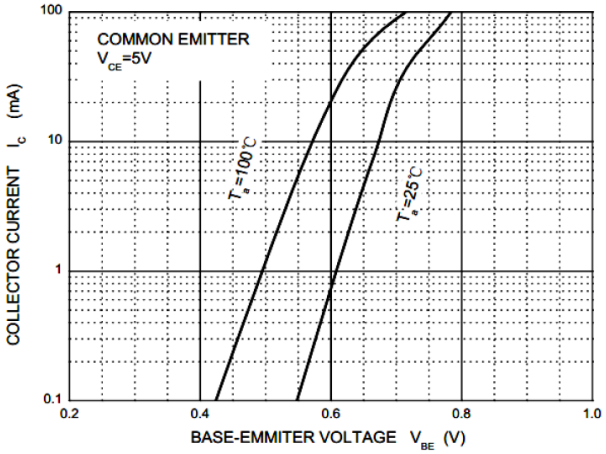


Figure 6. f_T vs. I_C

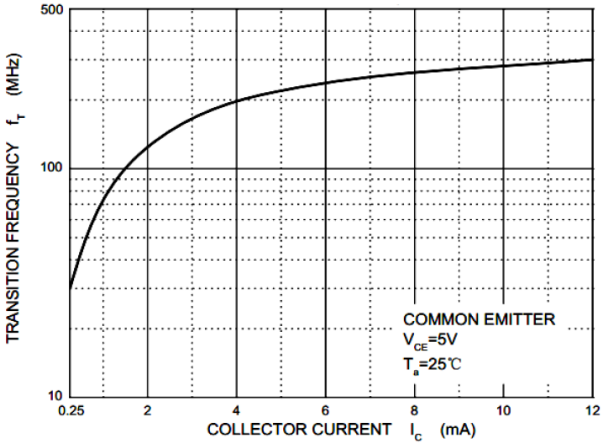
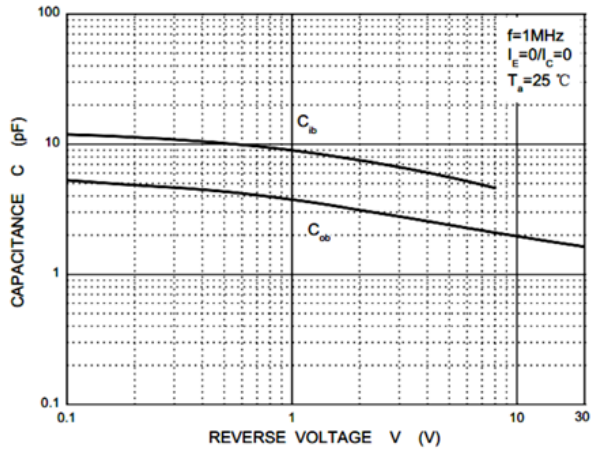
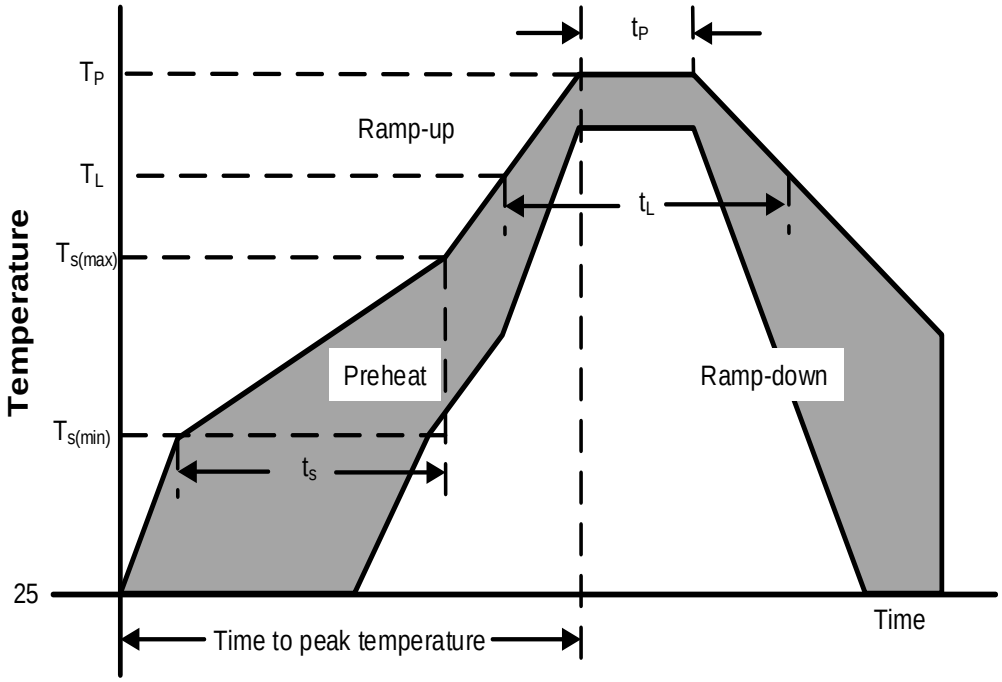


Figure 7. C_{ob} / C_{ib} vs. V_{CB} / V_{EB}



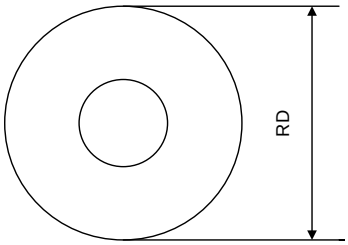
Soldering Parameters

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

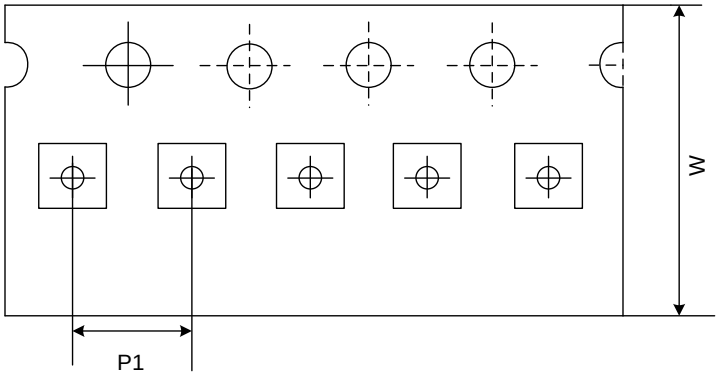


Tape And Reel Information

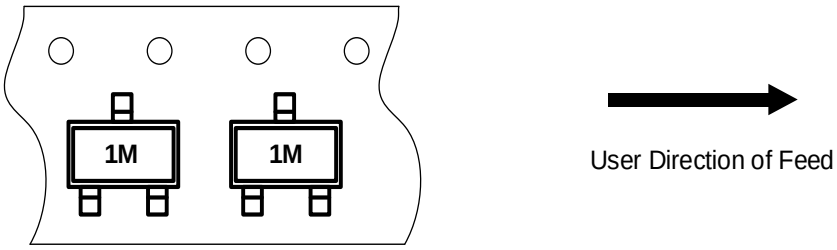
Reel Dimensions



Tape Dimensions



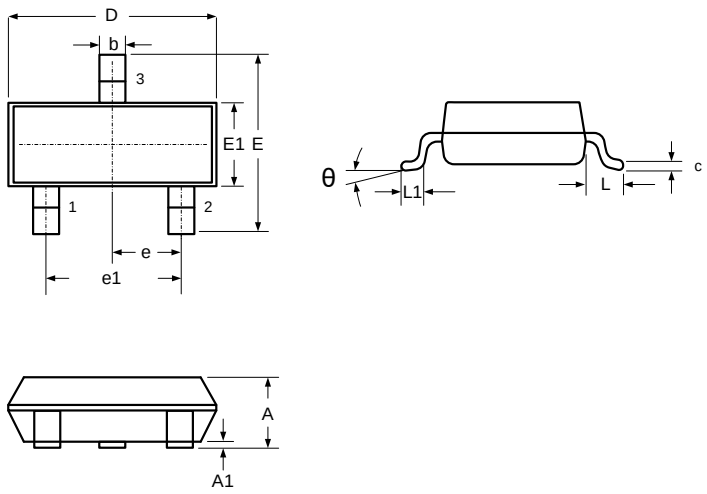
Quadrant Assignments For PIN1 Orientation In Tape

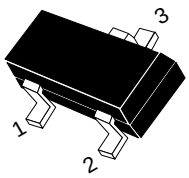


RD	Reel Dimensions	7 inch
W	Overall width of the carrier tape	8 mm
P1	Pitch between successive cavity centers	4mm

Outline Drawing – SOT-323

PACKAGE OUTLINE

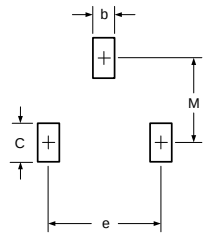




SOT-323

DIMENSIONS

SYMBOL	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	0.900	1.100	0.035	0.043
A1	0.000	0.100	0.000	0.004
D	2.000	2.200	0.079	0.087
b	0.200	0.400	0.008	0.016
c	0.008	0.150	0.003	0.006
E	2.150	2.450	0.085	0.096
E1	1.150	1.350	0.045	0.053
e	0.650 TYP		0.026 TYP	
e1	1.200	1.400	0.047	0.055
L	0.525 REF.		0.021 REF.	
L1	0.260	0.460	0.010	0.018
θ	0	8°	0	8°

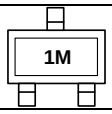


DIM	MILLIMETERS
M	2.20
C	0.80
e	1.30
b	0.50

Notes

1. Dimensions are exclusive of mold flash and metal burrs.

Marking Codes

Part Number	WT847BG-AT
Marking Code	

Package Information

Qty：3k/Reel

CONTACT INFORMATION

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For additional information, please contact your local Sales Representative.

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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.