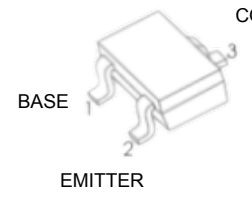
FEATURES

for general purpose and switching applications



Simplified outline(SOT-323)

1B

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Maximum ratings (T =25℃ unless otherwise noted)

Parameter	Symbol	Value	Unit
Collector Base Voltage	V_{CBO}	80	V
Collector Emitter Voltage	V_{CEO}	65	V
Emitter Base Voltage	V_{EBO}	6	V
Collector Current	I_C	100	mA
Peak Collector Current	I_{CM}	200	mA
Total Power Dissipation	P_{tot}	200	mW
Junction Temperature	T_j	150	℃
Storage Temperature Range	T_{stg}	- 55 to + 150	℃

Electrical Characteristics

Parameter	Symbol	Min.	Max.	Unit
DC Current Gain at V_{CE} = 5 V, I_C = 2 mA	h_{FE}	200	450	-
Collector Base Voltage at I_C = 10 µA	V_{CBO}	80	-	V
Collector Emitter Voltage at I_C = 10 mA	V_{CEO}	65	-	V
Emitter Base Voltage at I_E = 1 µA	V_{EBO}	6	-	V
Collector Base Cutoff Current at V_{CB} = 30 V	I_{CBO}	-	15	nA
Emitter Base Cutoff Current at V_{EB} = 5 V	I_{EBO}	-	100	nA
Collector Emitter Saturation Voltage at I_C = 10 mA, I_B = 0.5 mA I_C = 100 mA, I_B = 5 mA	$V_{CE(sat)}$	- -	0.25 0.6	V
Base Emitter Voltage at V_{CE} = 5 V, I_C = 2 mA V_{CE} = 5 V, I_C = 10 mA	V_{BE}	0.58 -	0.7 0.77	V
Transition Frequency at V_{CE} = 5 V, I_C = 10 mA, f = 100 MHz	f_T	100	-	MHz
Collector Output Capacitance at V_{CB} = 10 V, I_E = 0, f = 1 MHz	C_{ob}	-	4.5	pF

RATING AND CHARACTERISTIC CURVES

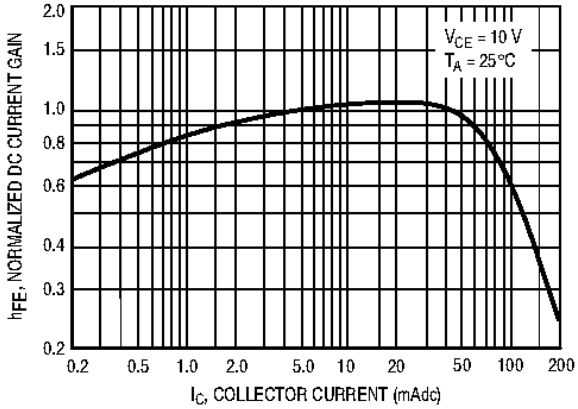


Figure 1. Normalized DC Current Gain

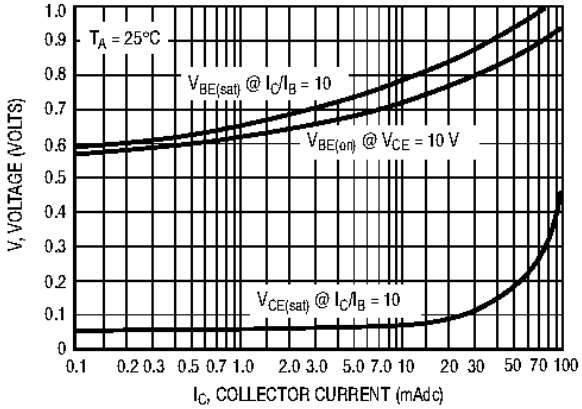


Figure 2. "Saturation" and "On" Voltages

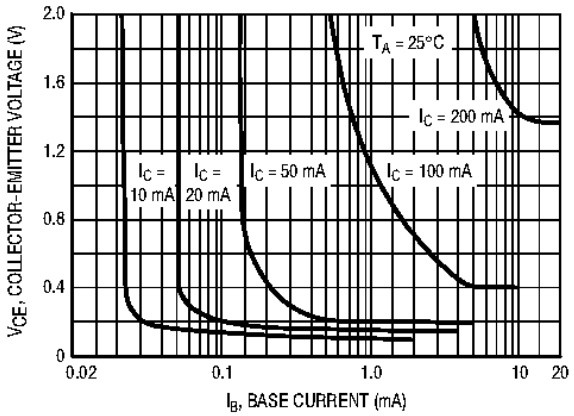


Figure 3. Collector Saturation Region

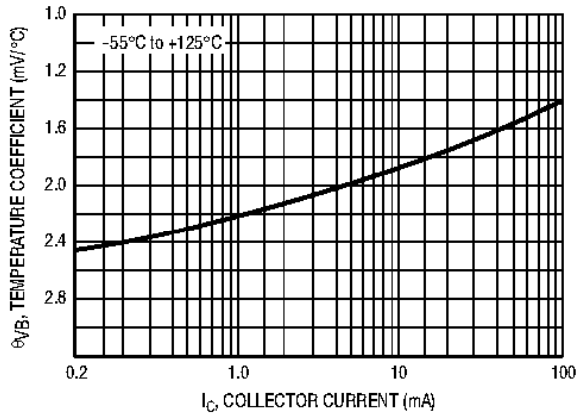


Figure 4. Base–Emitter Temperature Coefficient

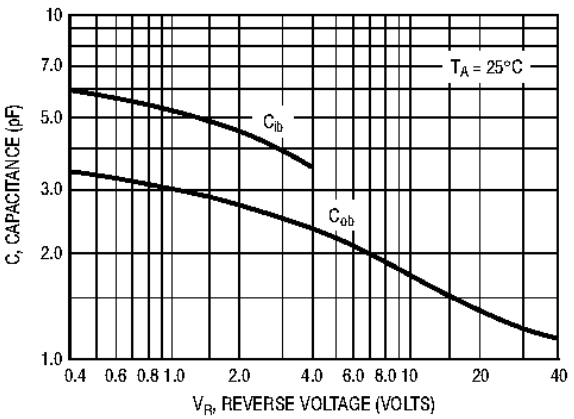


Figure 5. Capacitances

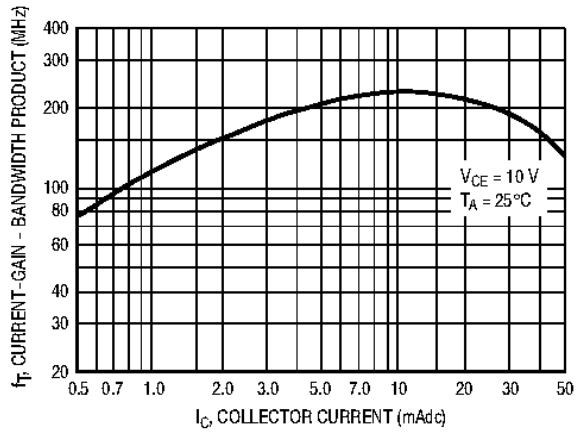


Figure 6. Current–Gain – Bandwidth Product

RATING AND CHARACTERISTIC CURVES

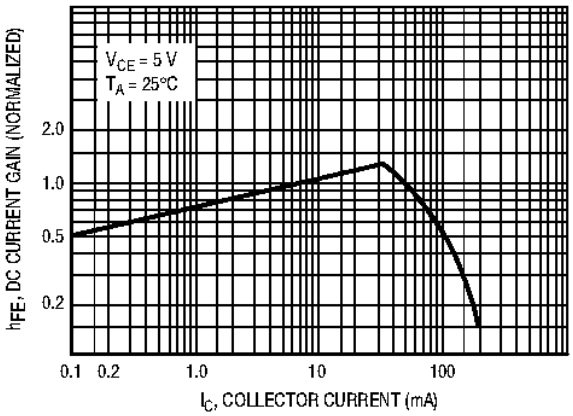


Figure 7. DC Current Gain

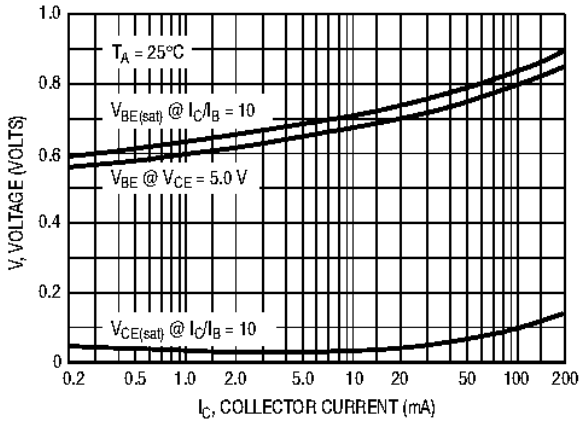


Figure 8. "On" Voltage

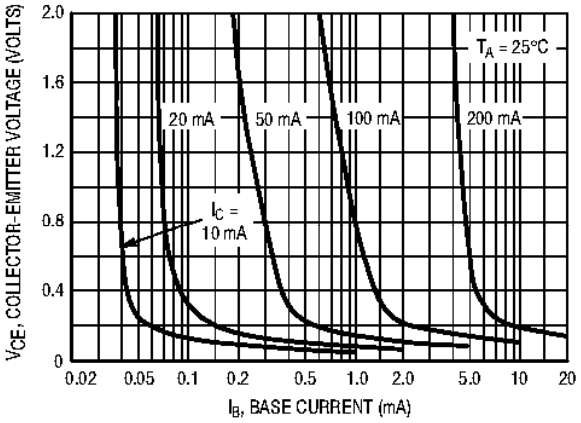


Figure 9. Collector Saturation Region

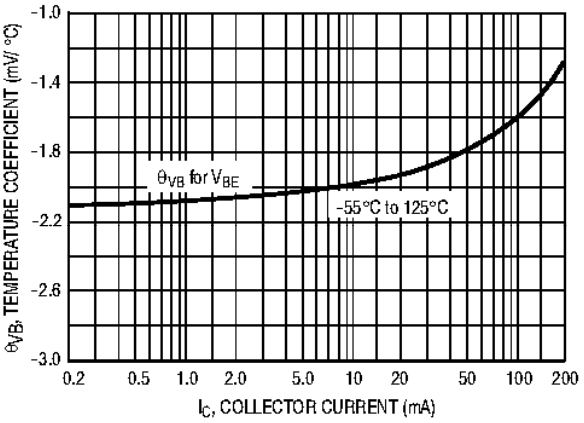


Figure 10. Base–Emitter Temperature Coefficient

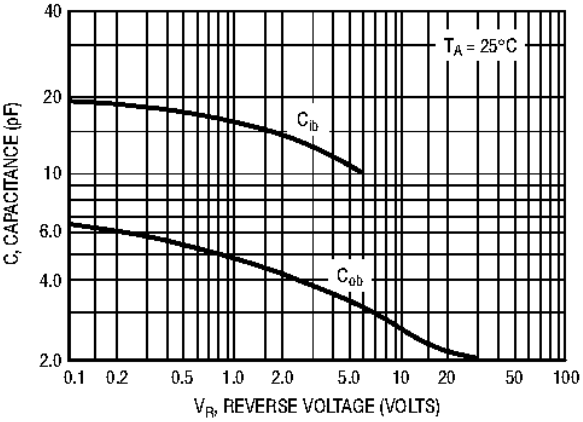


Figure 11. Capacitance

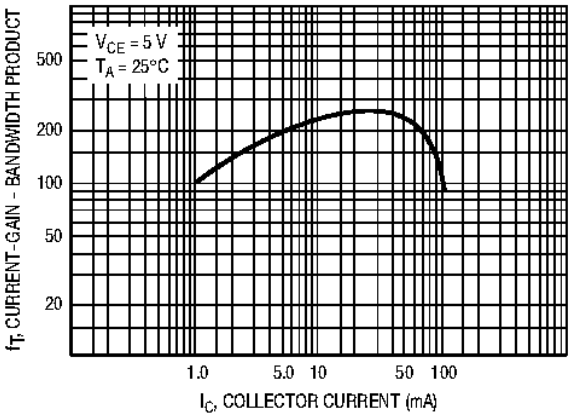
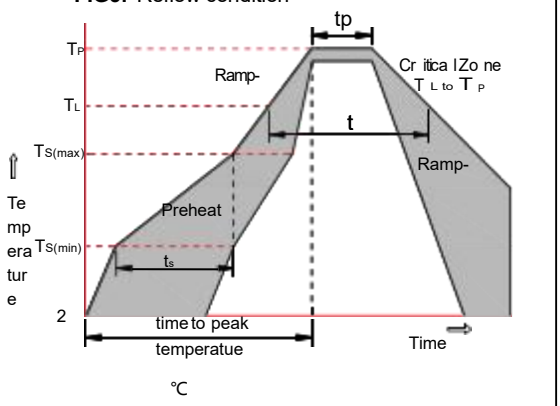


Figure 12. Current–Gain – Bandwidth Product

Soldering parameters

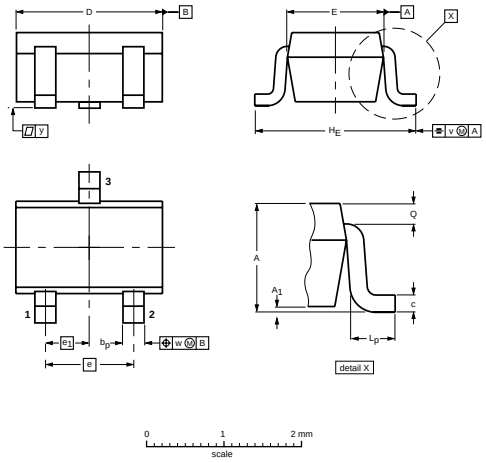
Reflow Condition		Pb-Free assembly (see as bellow)
Pre Heat	-Temperature Min ($T_{s(min)}$)	+150℃
	-Temperature Max($T_{s(max)}$)	+200℃
	-Time (Min to Max) (ts)	60-180 secs.
Average ramp up rate (Liquid us Temp (T_L) to peak)		3℃/sec. Max
$T_{s(max)}$ to T_L - Ramp-up Rate		3℃/sec. Max
Reflow	-Temperature(T_L)(Liquid us)	+217℃
	-Temperature(t_L)	60-150 secs.
Peak Temp (T_p)		+260(+0/-5)℃
Time within 5℃ of actual Peak Temp (t_p)		30 secs. Max
Ramp-down Rate		6℃/sec. Max
Time 25℃ to Peak Temp (T_P)		8 min. Max
Do not exceed		+260℃

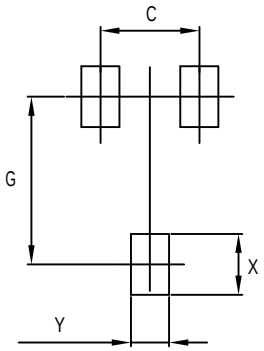
FIG5: Reflow condition



Package Dimensions & Suggested Pad Layout

SOT-323





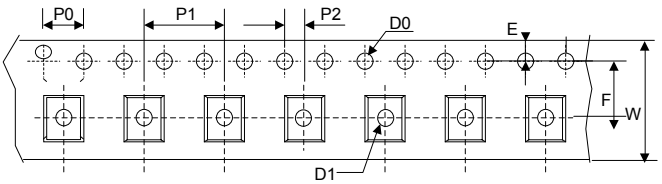
Dimensions	Value (in mm)
C	1.30
G	2.00
X	0.90
Y	0.65

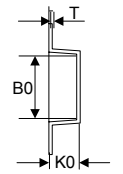
DIMENSIONS (mm are the original dimensions)

UNIT	A	A_1 max	b_p	c	D	E	e	e_1	H_E	L_p	Q	v	w
mm	1.1 0.8	0.1	0.4 0.3	0.25 0.10	2.2 1.8	1.35 1.15	1.3	0.65	2.2 2.0	0.45 0.15	0.23 0.13	0.2	0.2

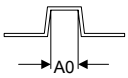
Tape & rell specification

Tape





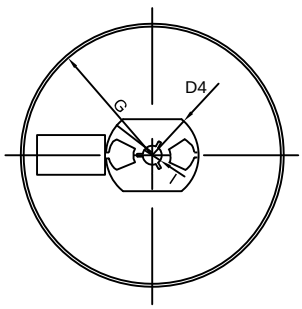
SECTION : B-B

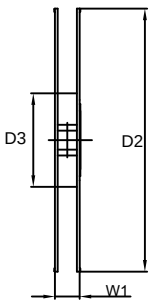


SECTION : A-A

Symbol	Dimension (mm)
P0	4.00±0.20
P1	4.00±0.20
P2	2.00±0.20
D0	1.55±0.20
D1	1.00±0.20
E	1.55±0.25
F	3.60±0.20
W	8.00±0.20
A0	2.50±0.20
B0	2.60±0.20
K0	1.40±0.20
T	0.20±0.20

7” Reel





D2	177.0±5.0
D3	55Min.
D4	R24.6±2.0
G	R82.0±2.0
I	13.0±2.0
W1	10.20±3.0

Quantity: 3000PCS