

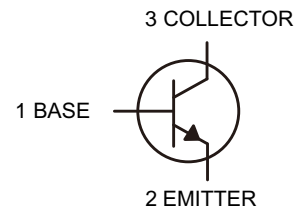
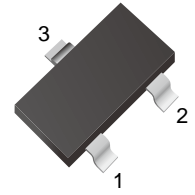
Transistor(NPN)

Features

- Collector Current: $I_C=0.5A$
- Approx. Weight: 9.2mg / 0.00032452oz
- Lead free in comply with EU RoHS 2011/65/EU directives

Ordering Information

Part Number	Marking	Shipping	Reel
LTS8050-TR3	J3Y	3000PCS Tape&Reel	7 inches
LTS8050-TR12	J3Y	12000PCS Tape&Reel	13 inches



Limiting Values (Absolute Maximum Ratings)

Symbol	Parameter	Value	Unit
V_{CBO}	Collector-Base Voltage	40	V
V_{CEO}	Collector-Emitter Voltage	25	V
V_{EBO}	Emitter-Base Voltage	5	V
I_C	Collector Current	500	mA
P_C	Collector Power Dissipation	300	mW
$R_{\theta JA}$	Thermal Resistance From Junction To Ambient	417	$^{\circ}C/W$
T_J	Junction Temperature	150	$^{\circ}C$
T_{STG}	Storage Temperature	-55~+150	$^{\circ}C$

Electrical characteristics ($T_a=25^{\circ}C$ unless otherwise specified)

Parameter	Symbol	Test condition	Min	Max	Unit
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C=100\mu A, I_E=0$	40		V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C=1mA, I_B=0$	25		V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E=100\mu A, I_C=0$	5		V
Collector cut-off current	I_{CBO}	$V_{CB}=40V, I_E=0$		0.1	μA
Collector cut-off current	I_{CEO}	$V_{CE}=20V, I_B=0$		0.1	μA
Emitter cut-off current	I_{EBO}	$V_{EB}=5V, I_C=0$		0.1	μA
DC current gain	$h_{FE(1)}$	$V_{CE}=1V, I_C=50mA$	120	400	
	$h_{FE(2)}$	$V_{CE}=1V, I_C=500mA$	50		
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C=500mA, I_B=50mA$		0.6	V
Base-emitter saturation voltage	$V_{BE(sat)}$	$I_C=500mA, I_B=50mA$		1.2	V
Transition frequency	f_T	$V_{CE}=6V, I_C=20mA$ $f=30MHz$	150		MHz

Classification Of h_{FE}

RANGE	120-200	200-350	300-400
RANK	L	H	J



Characteristics Curves

Fig.1 Static Characteristic

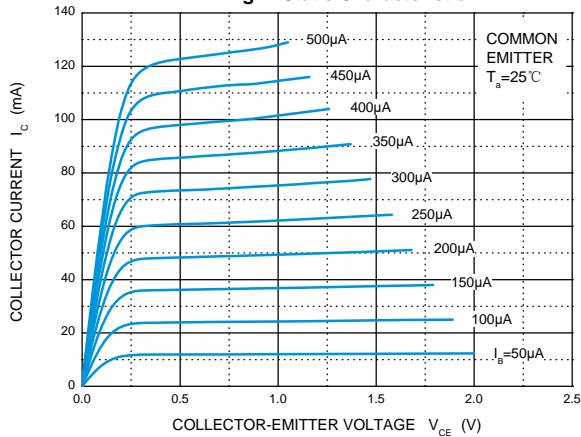


Fig.2 h_{FE} vs I_c

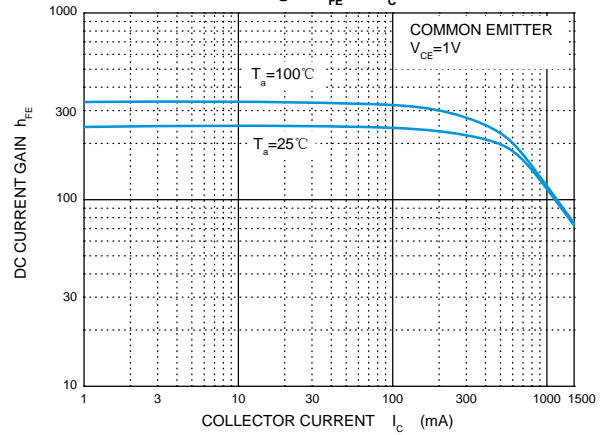


Fig.3 V_{CEsat} vs I_c

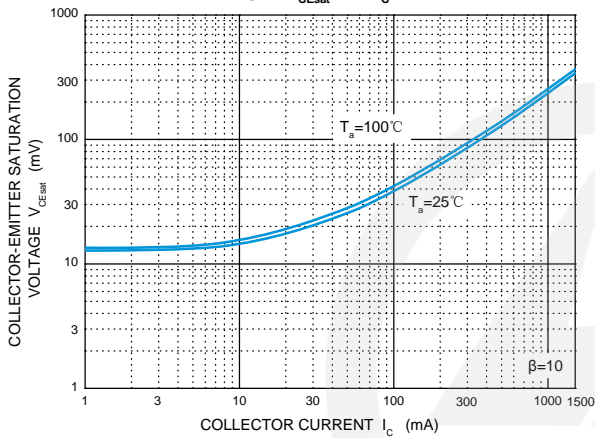


Fig.4 V_{BEsat} vs I_c

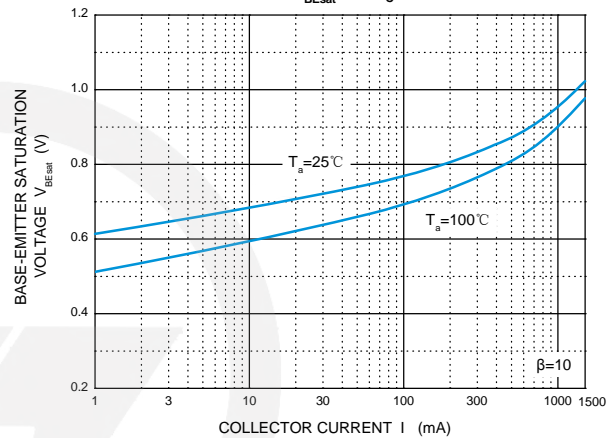


Fig.5 V_{BE} vs I_c

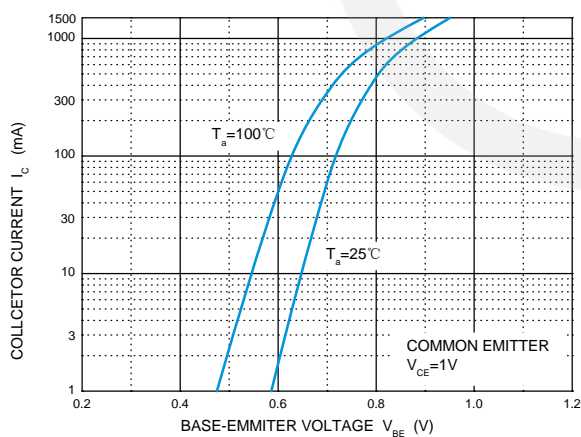


Fig.6 C_{ob}/C_{ib} vs V_{CB}/V_{EB}

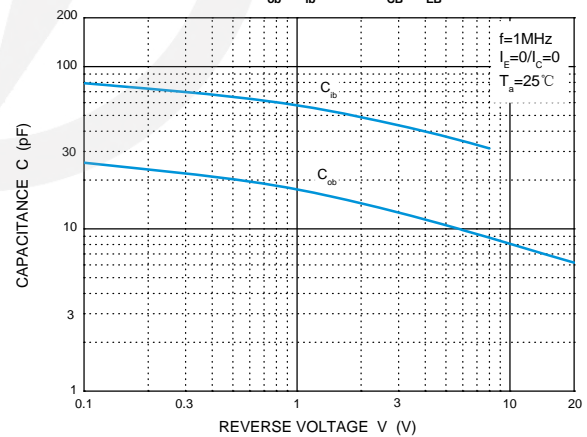


Fig.7 f_T vs I_c

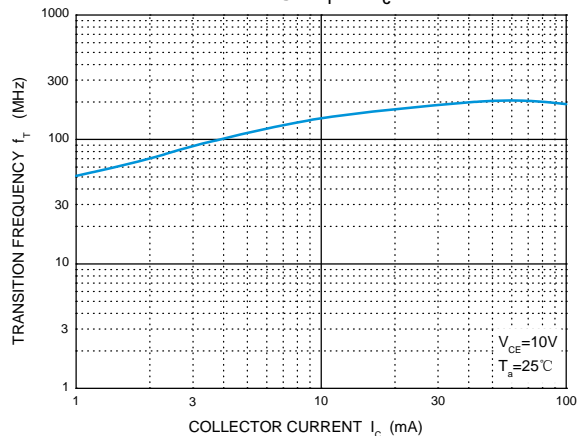
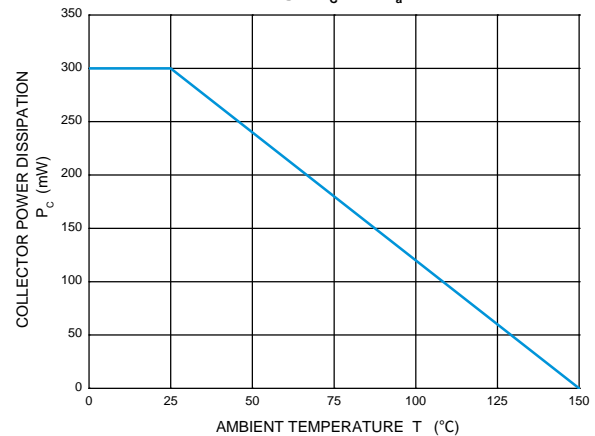


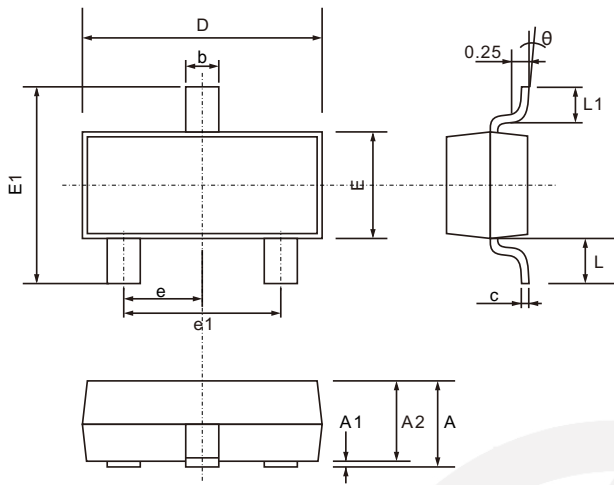
Fig.8 P_c vs T_a





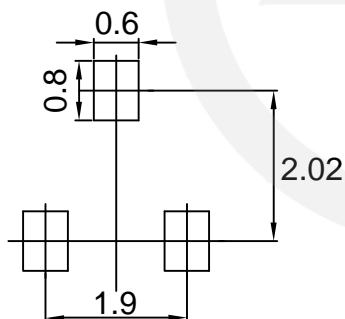
SOT-23 Package Outline

Unit: mm



SYMBOL	DIMENSIONS	
	MIN.	MAX.
A	0.900	1.200
A1	0.000	0.100
A2	0.900	1.050
b	0.300	0.500
c	0.080	0.200
D	2.700	3.100
E	1.200	1.400
E1	2.200	2.600
e	0.950 TYP.	
e1	1.750	2.050
L	0.550 TYP.	
L1	0.300	0.500
θ	0°	8°

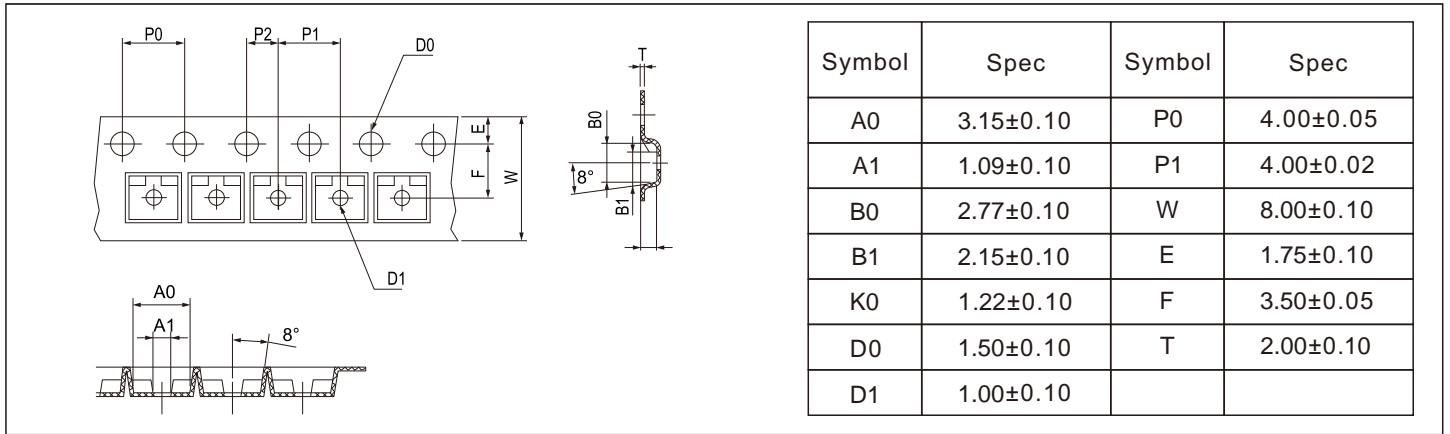
SOT-23 Suggested Pad Layout



- Note:
1. Controlling dimension: in millimeters.
 2. General tolerance: $\pm 0.05\text{mm}$
 3. The pad layout is for reference purpose only.

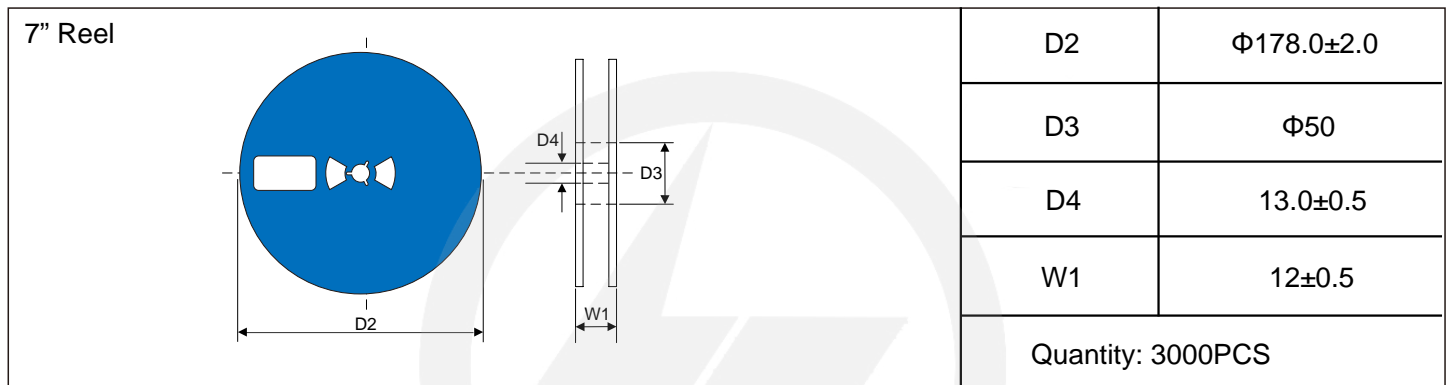
Carrier Tape Dimensions

Unit : mm



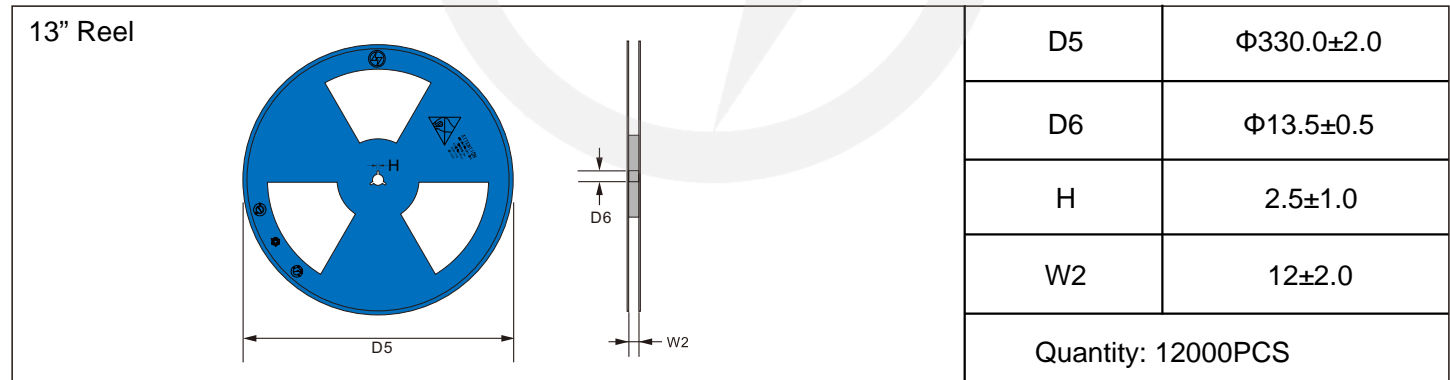
Reel Dimensions

Unit : mm

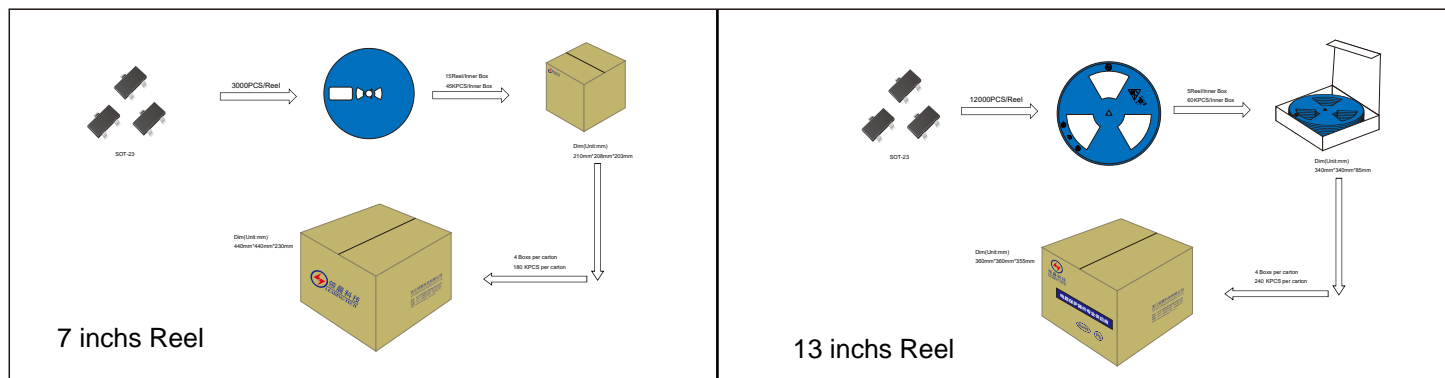


Reel Dimensions

Unit : mm



Packaging





Recommended Soldering Conditions



Recommended Conditions

Profile Feature	Pb-Free Assembly
Average ramp-up rate (T_L to T_P)	3°C/second max.
Preheat	
-Temperature Min ($T_{S\ min}$)	150°C
-Temperature Max ($T_{S\ max}$)	200°C
-Time (min to max) (t_s)	60-180 seconds
$T_{S\ max}$ to T_L	
-Ramp-up Rate	3°C/second max.
Time maintained above:	
-Temperature (T_L)	217°C
-Time (t_L)	60-150 seconds
Peak Temperature (T_P)	260°C
Time within 5°C of actual Peak Temperature (t_p)	20-40 seconds
Ramp-down Rate	6°C/second max.
Time 25°C to Peak Temperature	8 minutes max.

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Version Update Information

Series NO.	Enactment/Revision Date	Effective Date	Version	Revision Content	Revision Reason	Revision Person	Note
01	2024.03.12	2024.03.12	3.0	New file	/	Ding	
02	2025.04.15	2025.04.15	3.1	Add weight (Weight: 9.2mg)	/	Ding	
03	2026.03.06	2026.03.06	3.2	Package outline E1(max)=2.6mm	/	Ding	