

Transistor(NPN)

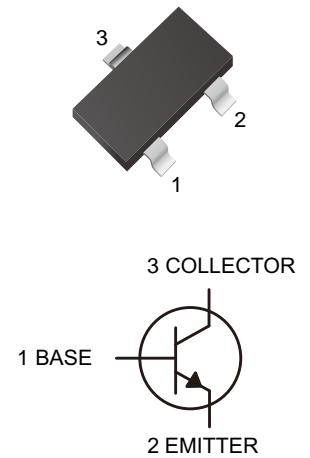
Features

- Lead free in comply with EU RoHS 2011/65/EU directives

Ordering Information

Part Number	Marking	Shipping	Reel
LTSS8050x-TR3	Y1	3000PCS Tape&Reel	7 inchs
LTSS8050x-TR12	Y1	12000PCS Tape&Reel	13 inchs

* "x" means h_{FE} Rank



Maximum Ratings (Ta=25 unless otherwise noted)

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	1.5	A
P _C	Collector Power Dissipation	300	mW
R _{θJA}	Thermal Resistance From Junction To Ambient	417	°C/W
T _J , T _{stg}	Operation Junction and Storage Temperature Range	-55~+150	°C

Electrical characteristics (Ta=25 unless otherwise specified)

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	V _{(BR)CBO}	I _C = 100μA, I _E =0	40			V
Collector-emitter breakdown voltage	V _{(BR)CEO}	I _C = 0.1mA, I _B =0	25			V
Emitter-base breakdown voltage	V _{(BR)EBO}	I _E =100μA, 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 _E =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 = 100mA	120		400	
	h _{FE(2)}	V _{CE} =1V, I _C = 800mA	40			
Collector-emitter saturation voltage	V _{CE(sat)}	I _C =800mA, I _B = 80mA			0.5	V
Base-emitter saturation voltage	V _{BE(sat)}	I _C =800mA, I _B = 80mA			1.2	V
Transition frequency	f _T	V _{CE} =10V, I _C = 50mA f=30MHz	100			MHz

Classification Of h_{FE}

RANK	LTSS8050L	LTSS8050H	LTSS8050J
RANGE	120-200	200-350	300-400



Characteristics Curves

Fig.1 Static Characteristic

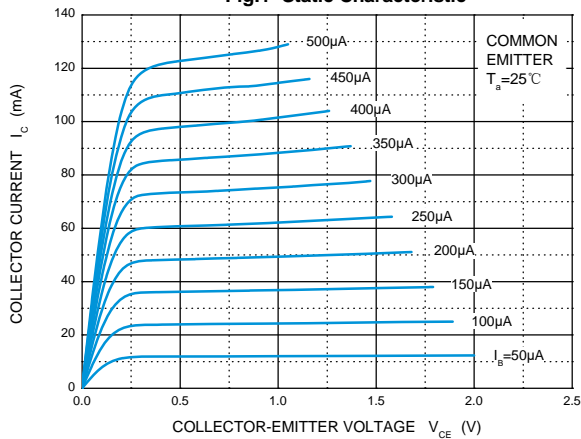


Fig.2 h_{FE} vs I_C

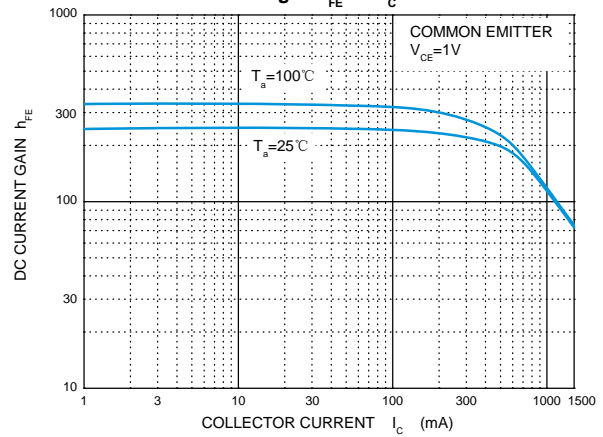


Fig.3 V_{CEsat} vs I_C

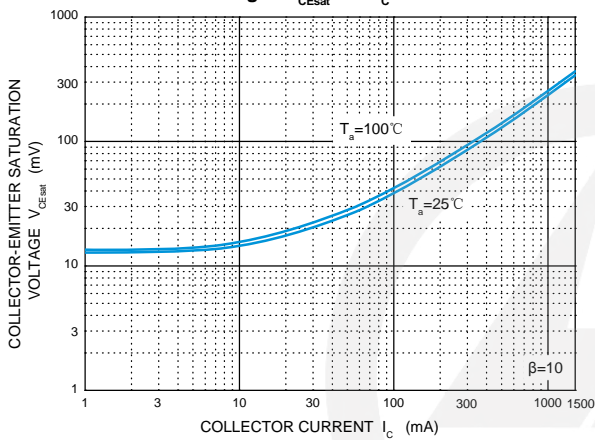


Fig.4 V_{BEsat} vs I_C

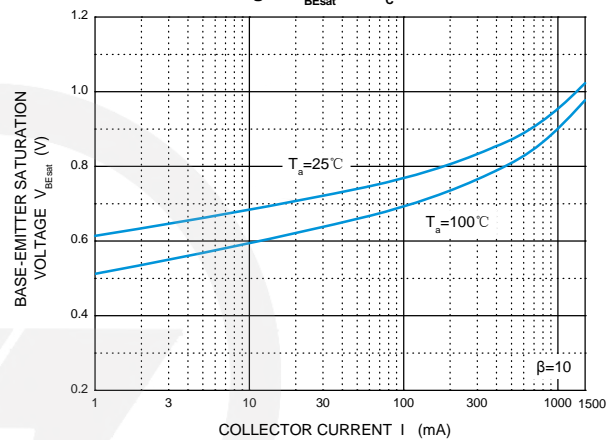


Fig.5 V_{BE} vs I_C

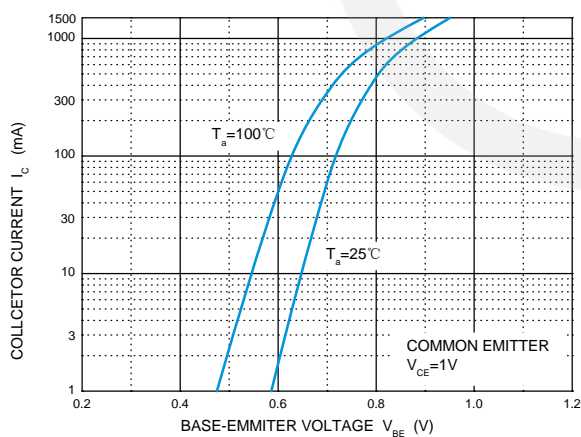


Fig.6 C_{ob}/C_{ib} vs V_{CB}/V_{EB}

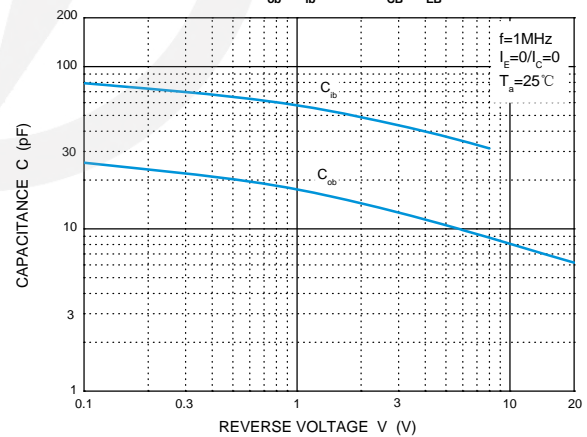


Fig.7 f_T vs I_C

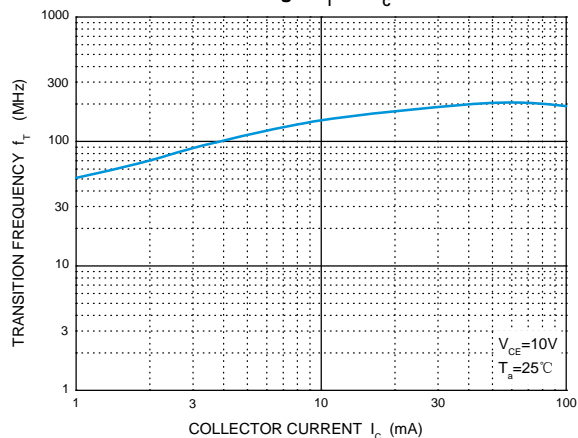
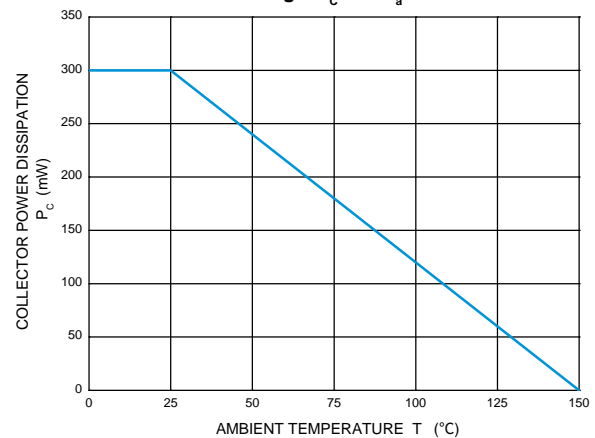


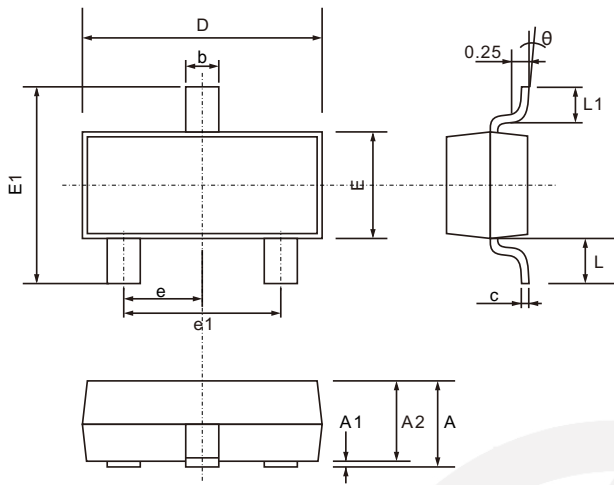
Fig.8 P_C vs T_a





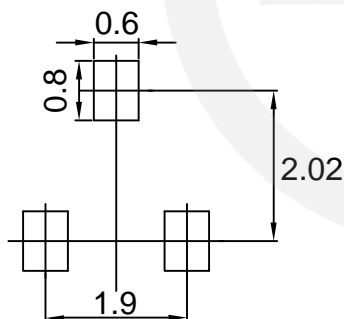
SOT-23 Package Outline

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°

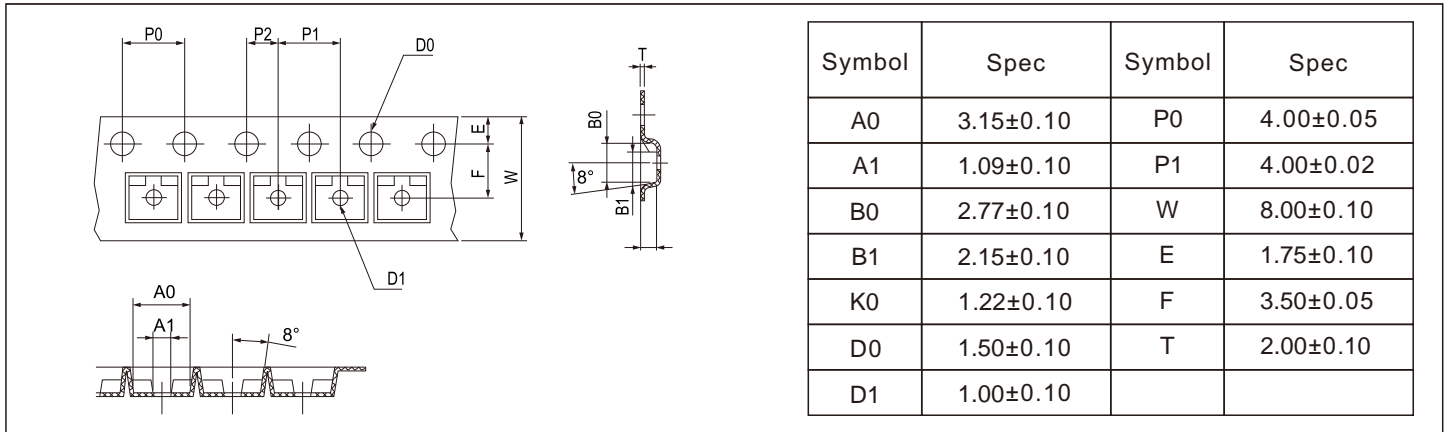
SOT-23 Suggested Pad Layout



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

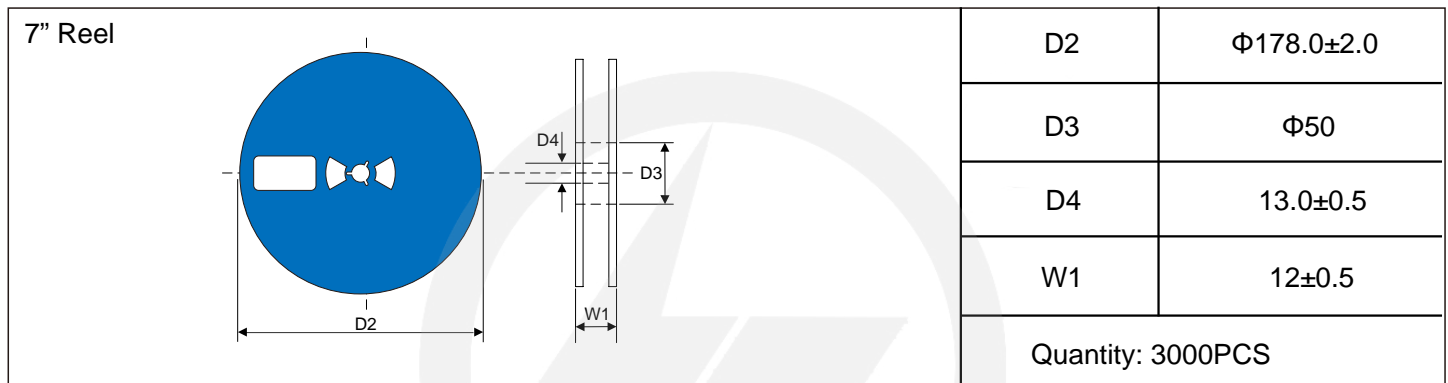
Carrier Tape Dimensions

Unit : mm



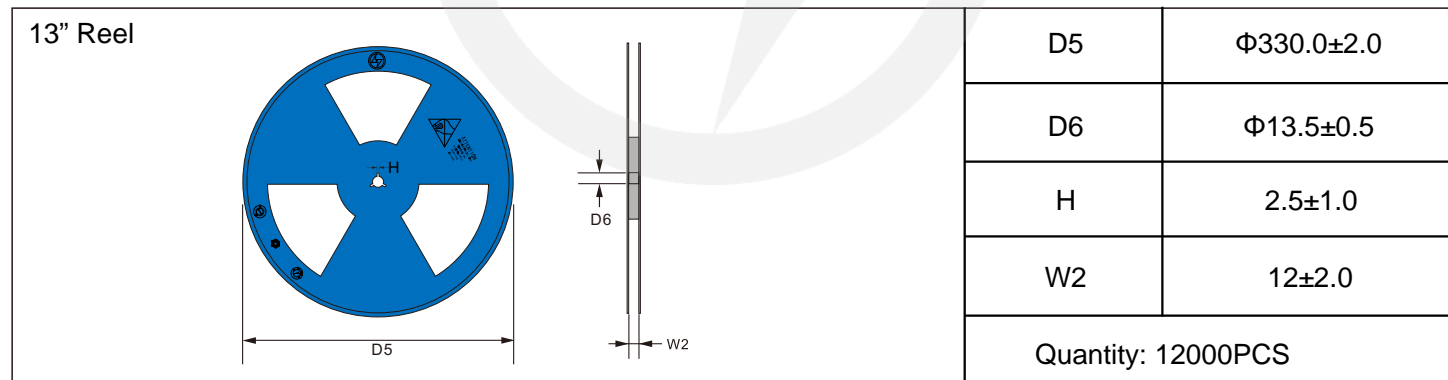
Reel Dimensions

Unit : mm

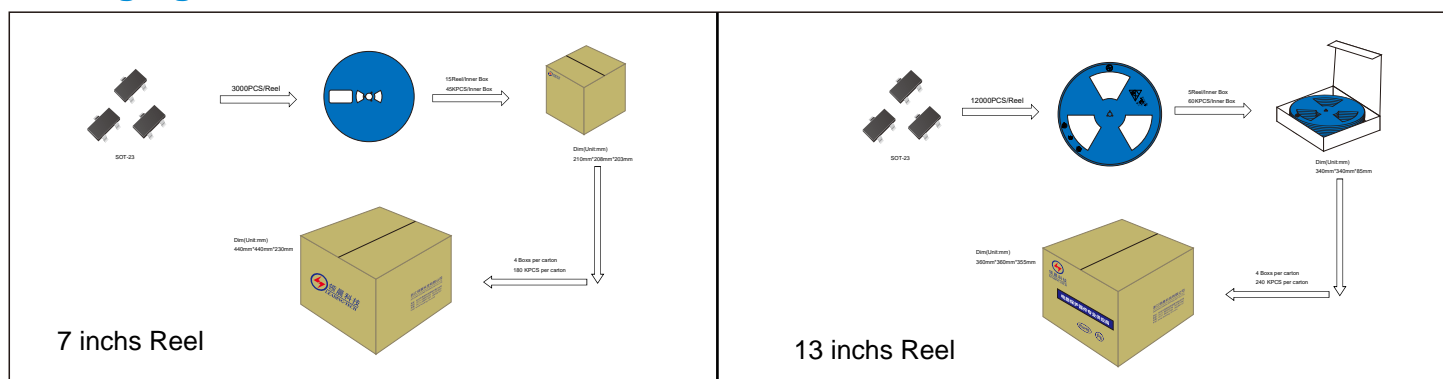


Reel Dimensions

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	2024.09.07	2024.09.07	3.0	New file	/	Ding	
02	2025.04.28	2025.04.28	3.1	Model differentiation	/	Ding	
03	2026.03.06	2026.03.06	3.2	Package outline E1(max)=2.6mm	/	Ding	