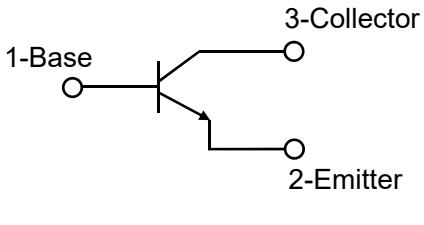
Prisemi®

PT23T8050L

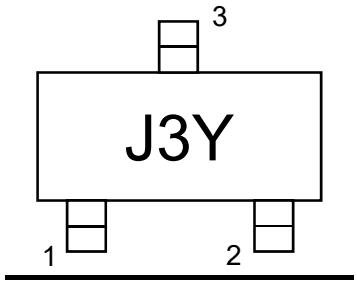
NPN Transistor

Feature

- This device is Pb-Free, Halogen Free/BFR Free and Rohs compliant.



Circuit Diagram



Marking (Top View)

Mechanical Characteristics

- Lead finish:100% matte Sn(Tin)
- SOT-23 without plating
- Mounting position: Any
- Qualified max reflow temperature:260℃
- Device meets MSL 1 requirements
- Pure tin plating: 7 ~ 17 um
- Pin flatness:≤3mil

Electrical characteristics per line@25℃

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Collector-base breakdown voltage	$V_{(BR)CBO}$	I_C = 100μA , 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 = 100μA , I_C = 0	5	-	-	V
Collector cut-off current	I_{CEO}	V_{CE} = 20V, I_B = 0	-	-	100	nA
Collector cut-off current	I_{CBO}	V_{CB} = 40V , I_E= 0	-	-	100	nA
Emitter cut-off current	I_{EBO}	V_{EB} = 5V , I_C = 0	-	-	100	nA
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

Absolute maximum rating@25℃

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

Typical Characteristics

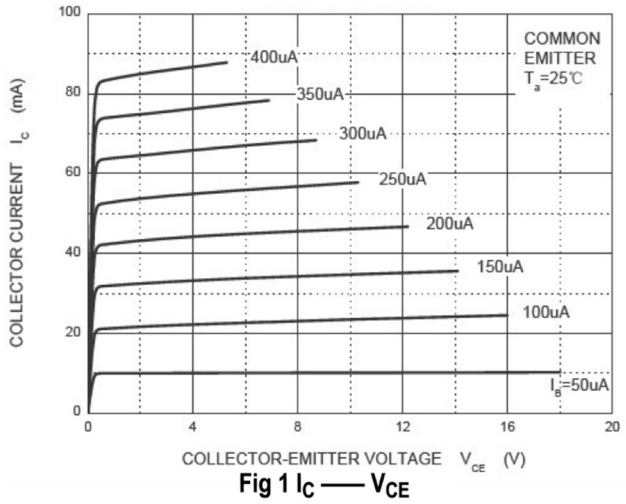


Fig 1 I_C — V_{CE}

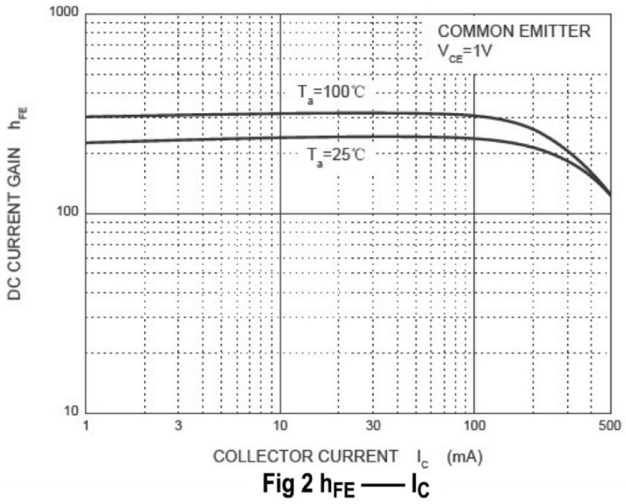


Fig 2 h_{FE} — I_C

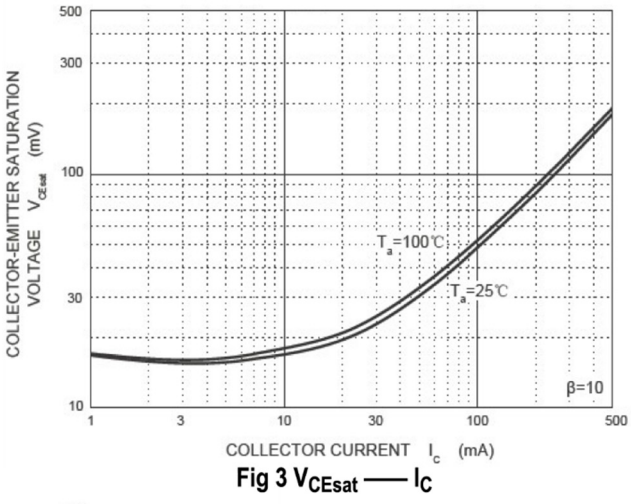


Fig 3 V_{CEsat} — I_C

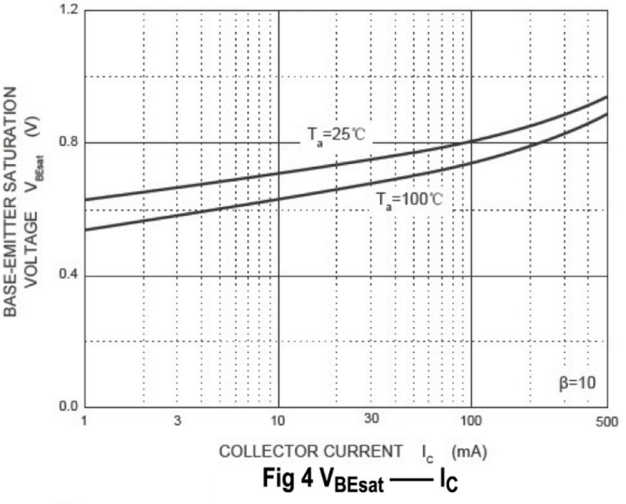


Fig 4 V_{BEsat} — I_C

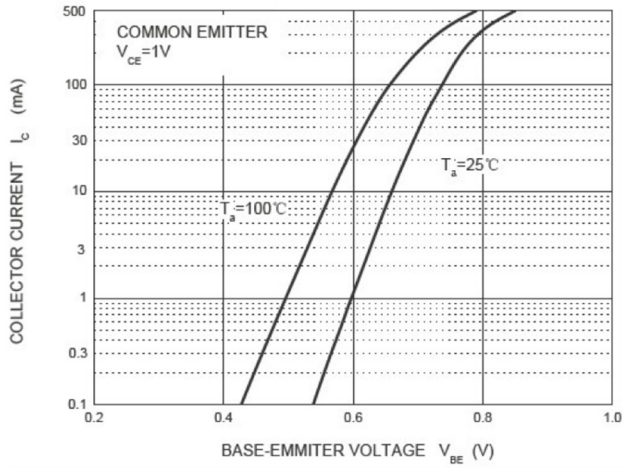


Fig 5 I_C —— V_{BE}

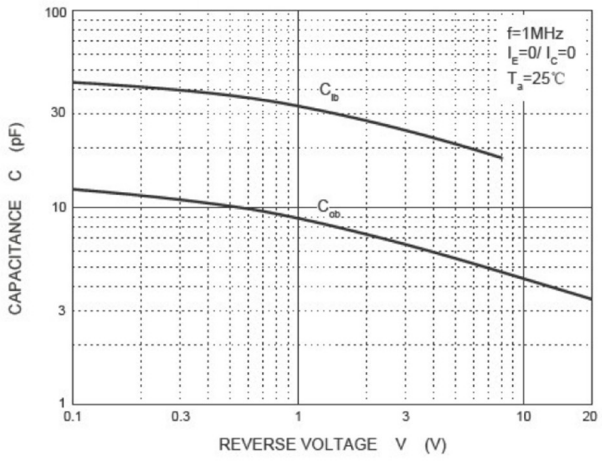


Fig 6 C_{ob}/C_{ib} —— V_{CB}/V_{EB}

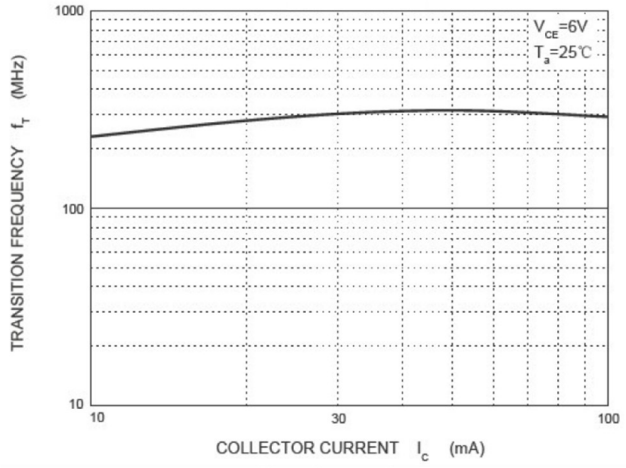


Fig 7 f_T —— I_C

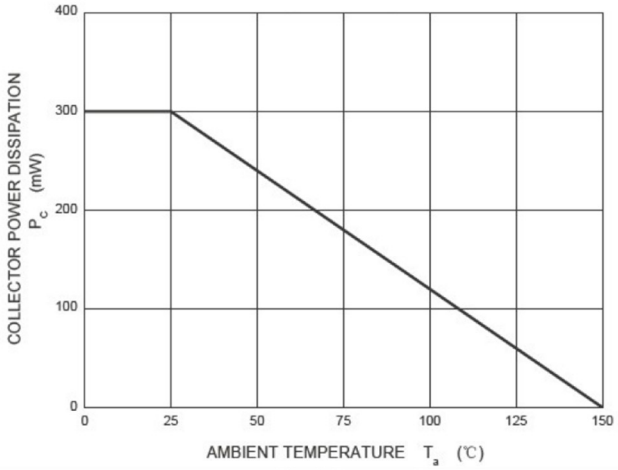
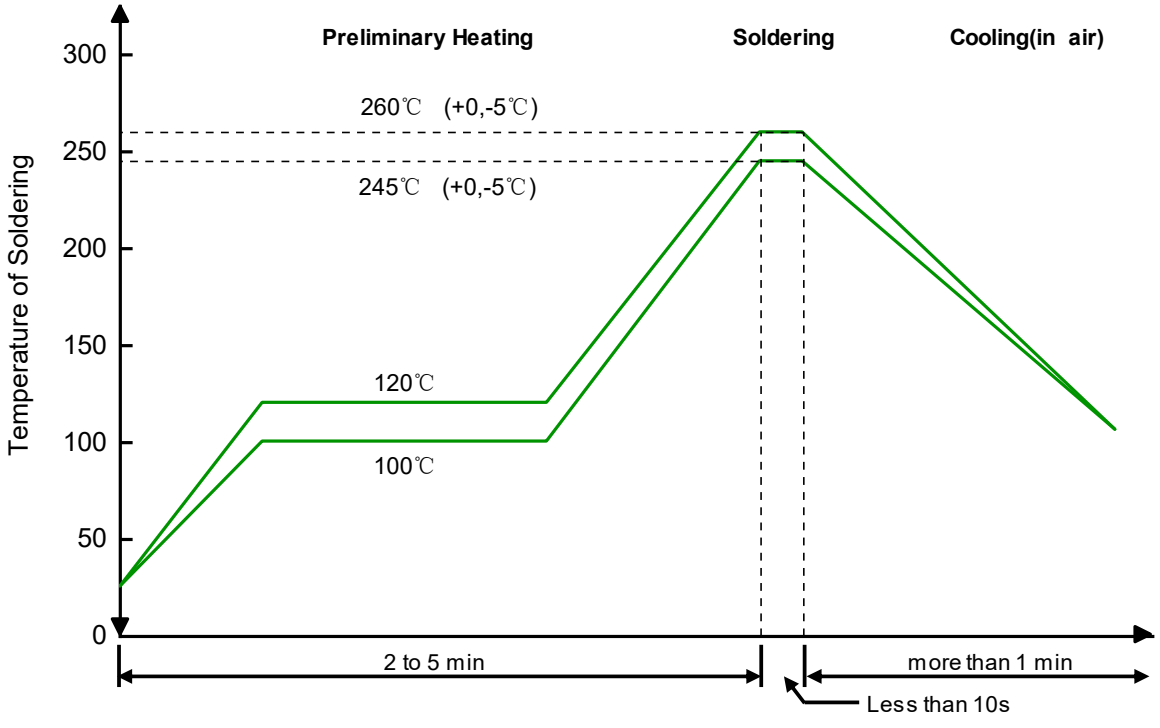


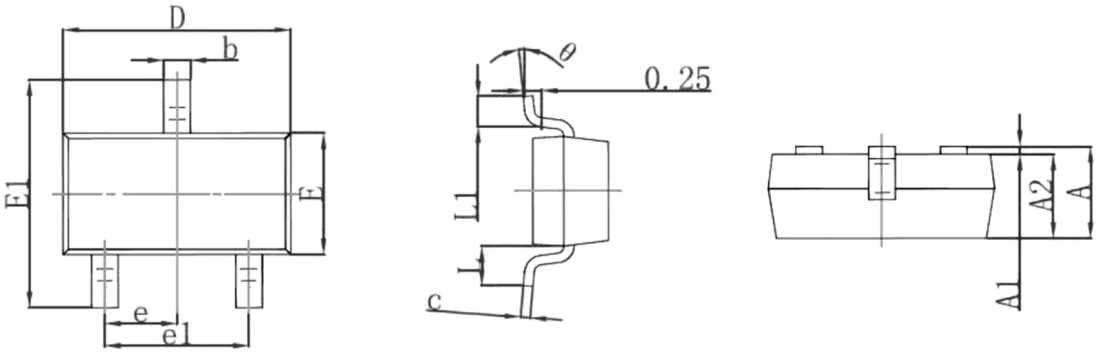
Fig 8 P_C —— T_a

Solder Reflow Recommendation

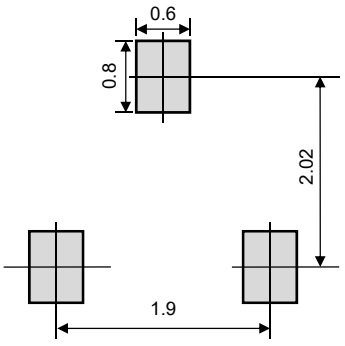


Remark: Pb free for 260℃; Pb for 245℃.

Product dimension (SOT-23)



Dim	Millimeters		Inches	
	Min	Max	Min	Max
A	0.900	1.150	0.035	0.045
A1	0.000	0.100	0.000	0.004
A2	0.900	1.050	0.035	0.041
b	0.300	0.500	0.012	0.020
c	0.080	0.150	0.003	0.006
D	2.800	3.000	0.110	0.118
E	1.200	1.400	0.047	0.055
E1	2.250	2.550	0.089	0.100
e	0.950 Typ.		0.037 Typ.	
e1	1.800	2.000	0.071	0.079
L	0.550 Ref.		0.022 Ref.	
L1	0.300	0.500	0.012	0.020
θ	0°	8°	0°	8°



Unit:mm

Suggested PCB Layout

Ordering information

Device	Package	Reel	Shipping
PT23T8050L	SOT-23 (Pb-Free)	7"	3000 / Tape & Reel

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