

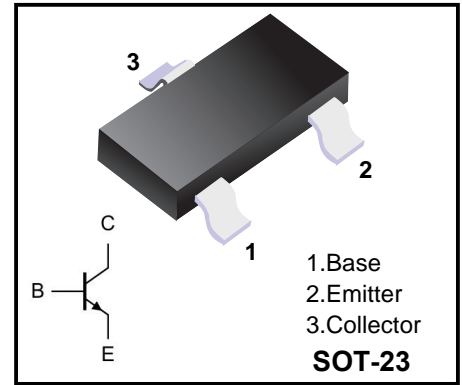
PNP Silicon Epitaxial Planar Transistor

FEATURES

- ◆ Low collector-emitter saturation voltage V_{CEsat}
- ◆ High collector current capability: I_C and I_{CM}
- ◆ Higher efficiency leading to less heat generation
- ◆ Reduced printed-circuit board requirements.
- ◆ Package: SOD-123FL

APPLICATIONS

- ◆ Power management
 - DC/DC converters
 - Supply line switching
 - Battery charger
 - LCD backlighting.



Marking Code	
PBSS5350T	ZD

LIMITING VALUES

In accordance with the Absolute Maximum Rating System (IEC 60134).

Parameter	Test Condition	Symbo	Typ	Max	Unit		
collector-base voltage	open emitter	V_{CBO}	—	–50	V		
collector-emitter voltage	open base	V_{CEO}	—	–50	V		
emitter-base voltage	open collector	V_{EBO}	—	–5	V		
collector current (DC)	note 4	I_C	—	–3	A		
peak collector current	limited by $T_{j(max)}$	I_{CM}	—	–5	A		
base current (DC)		I_B	—	–0.5	A		
total power dissipation	$T_{amb} \leq 25\text{ }^\circ\text{C}$	P_{tot}	—	300	mW		
	note 1					480	mW
	note 2					540	mW
	note 3					600	mW
note 4							
storage temperature		T_{STG}	–65	+150	°C		
junction temperature		T_J	—	150	°C		
ambient temperature		T_{amb}	–65	+150	°C		

Notes

1. Device mounted on a FR4 printed-circuit board; single-sided copper; tin-plated; standard footprint.
2. Device mounted on a FR4 printed-circuit board; single-sided copper; tin-plated; mounting pad for collector 1 cm².
3. Device mounted on a FR4 printed-circuit board; single-sided copper; tin-plated; mounting pad for collector 6 cm².
4. Device mounted on a ceramic printed-circuit board 7 cm², single-sided copper, tin-plated.

CHARACTERISTICS
 $T_{amb} = 25^{\circ}\text{C}$ unless otherwise specified.

Parameter	Test Condition	Symbol	Min	Typ	Max	Unit
collector-base cut-off current	$V_{CB} = -50\text{ V}; I_E = 0\text{ A}$	I_{CBO}	-	-	-100	nA
	$V_{CB} = -50\text{ V}; I_E = 0\text{ A}; T_j = 150^{\circ}\text{C}$		-	-	-50	μA
collector-emitter cut-off current	$V_{CE} = -50\text{ V}; V_{BE} = 0\text{ V}$	I_{CES}	-	-	-100	nA
emitter-base cut-off current	$V_{EB} = -5\text{ V}; I_C = 0\text{ A}$	I_{EBO}	-	-	-100	nA
DC current gain	$V_{CE} = -2\text{ V}$	h_{FE}				
	$I_C = -0.1\text{ A}$		200	-	-	
	$I_C = -0.5\text{ A}$		200	-	-	
	$I_C = -1\text{ A}; \text{note 1}$		200	-	-	
	$I_C = -2\text{ A}; \text{note 1}$		130	-	-	
	$I_C = -3\text{ A}; \text{note 1}$		80	-	-	
collector-emitter saturation voltage	$I_C = -0.5\text{ A}; I_B = -50\text{ mA}$	V_{CEsat}	-	-	-90	mV
	$I_C = -1\text{ A}; I_B = -50\text{ mA}$		-	-	-180	mV
	$I_C = -2\text{ A}; I_B = -100\text{ mA}$		-	-	-320	mV
	$I_C = -2\text{ A}; I_B = -200\text{ mA}; \text{note 1}$		-	-	-270	mV
	$I_C = -3\text{ A}; I_B = -300\text{ mA}; \text{note 1}$		-	-	-390	mV
equivalent on-resistance	$I_C = -2\text{ A}; I_B = -200\text{ mA}; \text{note 1}$	R_{CEsat}	-	-	135	m Ω
base-emitter saturation voltage	$I_C = -2\text{ A}; I_B = -100\text{ mA}$	V_{BEsat}	-	-	-1.1	V
	$I_C = -3\text{ A}; I_B = -300\text{ mA}; \text{note 1}$		-	-	-1.2	V
base-emitter turn-on voltage	$V_{CE} = -2\text{ V}; I_C = -1\text{ A}$	V_{BEon}	-	-	-1.2	V
transition frequency	$I_C = -100\text{ mA}; V_{CE} = -5\text{ V}; f = 100\text{ MHz}$	f_T	100	-	-	MHz
collector capacitance	$V_{CB} = -10\text{ V}; I_E = I_C = 0\text{ A}; f = 1\text{ MHz}$	C_c	-	-	35	pF

Note 1. Pulse test: $t_p \leq 300\ \mu\text{s}; \delta \leq 0.02$.

Electrical Characteristic Curve

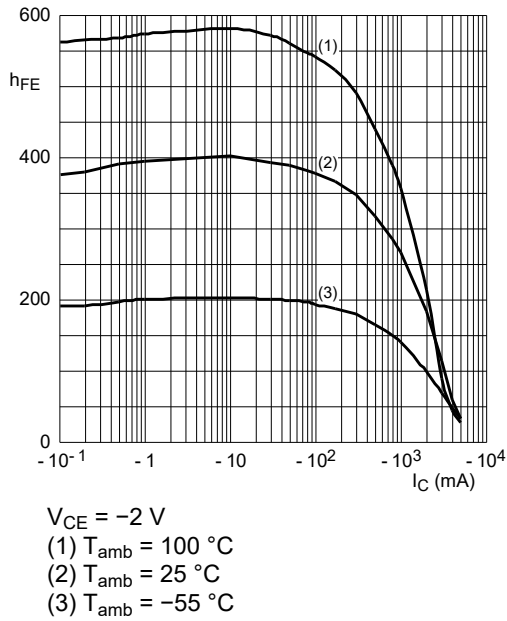


Fig.1 DC current gain as a function of collector current; typical values.

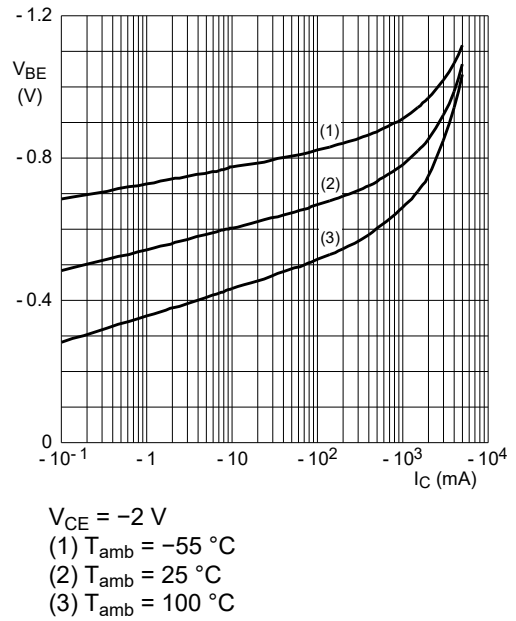


Fig.2 Base-emitter voltage as a function of collector current; typical values.

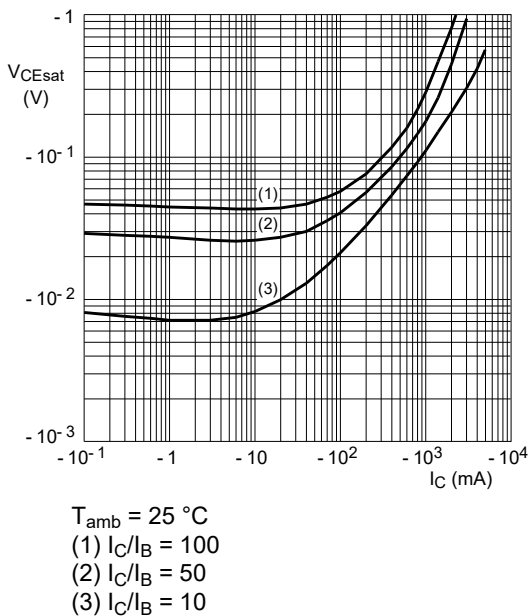


Fig.3 Collector-emitter saturation voltage as a function of collector current; typical values.

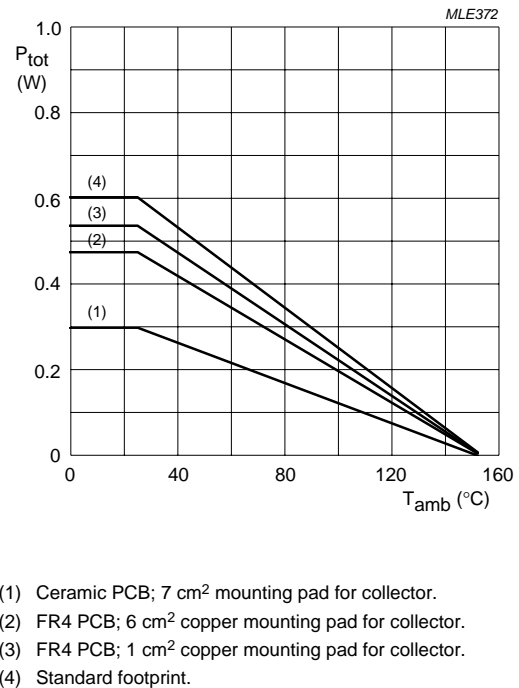


Fig.4 Power derating curves.

Ordering information

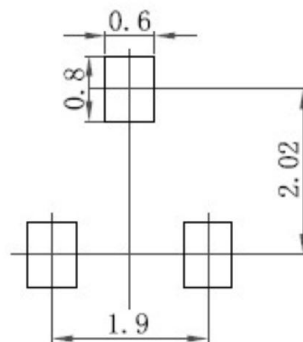
Package	Packing Description	Base Quantity	Packing Quantity
SOT-23	Tape/Reel,7"reel	3000pcs/Reel	24000PCS/Box 120000PCS/Carton

Package Dimensions

SOT-23

Dim.	Millimeter (mm)		mil	
	Min.	Max.	Min.	Max.
A	0.9	1.15	35	45
A1	0.1		3.9	
bp	0.38	0.48	15	19
C	0.09	0.15	3.54	5.9
D	2.8	3.0	110	118
E	1.2	1.4	47	55
e	1.9		75	
e1	0.95		37	
HE	2.1	2.55	83	100
Lp	0.15	0.45	5.9	18
Q	0.45	0.55	18	22
v	0.2		7.9	
W	0.1		4	

The recommended mounting pad size



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