

PBSS4250SA

NPN Low $V_{CE(SAT)}$ Transistor

Voltage

50V

Current

2A

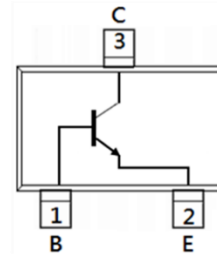
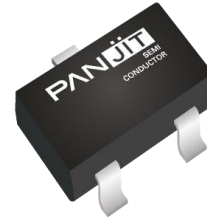
Features

- Silicon NPN epitaxial type
- Low $V_{CE(SAT)}$ 0.25V(max)@ $I_C/I_B= 1A / 50mA$
- High collector current capability
- Excellent DC current gain characteristics
- Lead free in compliance with EU RoHS 2.0
- Green molding compound as per IEC61249 Standard
- PNP complement : PBSS5250SA

Mechanical Data

- Case : SOT-23 Package
- Terminals : Solderable per MIL-STD-750, Method 2026
- Approx. Weight : 0.0084 grams

SOT-23



Maximum Ratings and Thermal Characteristics ($T_A=25^\circ\text{C}$ unless otherwise noted)

PARAMETER	SYMBOL	LIMIT	UNIT
Collector-Base Voltage	V_{CBO}	100	V
Collector-Emitter Voltage	V_{CEO}	50	
Emitter-Base Voltage	V_{EBO}	7	
Collector Current (DC)	I_C	2	A
Collector Current (Pulse)	I_{CM}	5	
Base Current (DC)	I_B	0.2	
Base Current (Pulse)	I_{BM}	0.5	
Power Dissipation	P_D	0.83	W
Operating Junction and Storage Temperature Range	T_J, T_{STG}	-55~150	$^\circ\text{C}$
Thermal Resistance From Junction to Ambient ^(Note 2)	$R_{\theta JA}$	150	$^\circ\text{C/W}$

PBSS4250SA

Electrical Characteristics (T_A=25°C unless otherwise noted)

PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
OFF Characteristics						
Collector-Emitter Breakdown Voltage	BV _{CEO}	I _C = 10mA, I _B = 0A	50	-	-	V
Collector-Base Breakdown Voltage	BV _{CBO}	I _C = 0.1mA, I _E = 0A	100	-	-	
Emitter-Base Breakdown Voltage	BV _{EBO}	I _E = 0.1mA, I _C = 0A	7	-	-	
Collector Cutoff Current	I _{CBO}	V _{CB} = 100V, I _E = 0A	-	-	100	nA
Emitter Cutoff Current	I _{EBO}	V _{EB} = 7V, I _C = 0A	-	-	100	
Collector-Emitter Cutoff Current	I _{CES}	V _{CES} = 50V, I _E = 0A	-	-	100	
ON Characteristics						
DC Current Gain ^(Note 1)	h _{FE}	V _{CE} = 2V, I _C = 100mA	300	-	-	-
		V _{CE} = 2V, I _C = 500mA	300	500	900	
		V _{CE} = 2V, I _C = 1A	250	-	-	
		V _{CE} = 2V, I _C = 2A	100	-	-	
Collector-Emitter Saturation Voltage ^(Note 1)	V _{CE(SAT)}	I _C = 500mA, I _B = 50mA	-	50	90	mV
		I _C = 1A, I _B = 50mA	-	100	250	
		I _C = 2A, I _B = 100mA	-	175	350	
		I _C = 2A, I _B = 200mA	-	160	320	
Collector-Emitter Saturation resistance	R _{CE(SAT)}	I _C = 2A, I _B = 200mA	-	80	160	mΩ
Base-Emitter Saturation Voltage ^(Note 1)	V _{BE(SAT)}	I _C = 2A, I _B = 100mA	-	0.95	1.1	V
Base-Emitter Turn-On Voltage ^(Note 1)	V _{BE(ON)}	V _{CE} = 2V, I _C = 1A	-	0.8	1.1	
Transition Frequency	f _T	V _{CE} = 2V, I _E = 300mA	-	250	-	MHz
Base input Capacitance	C _{IB}	V _{EB} = 0.5V, f=1MHz	-	160	-	pF
Collector Output Capacitance	C _{OB}	V _{CB} = 10V, f=1MHz	-	10	-	

Notes :

1. Pulse width ≤ 300us, Duty cycle ≤ 2%.
2. Mounted on FR4 PCB at 1 inch square copper pad.

PBSS4250SA

TYPICAL CHARACTERISTIC CURVES

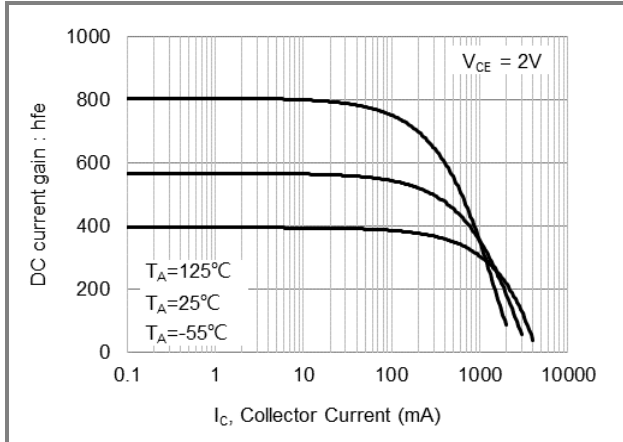


Fig.1 DC Current Gain

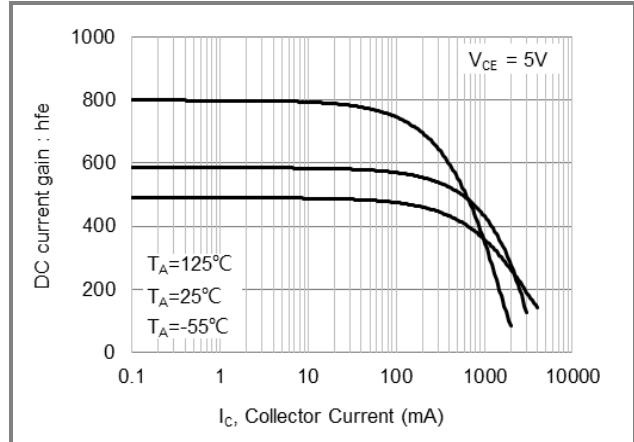


Fig.2 DC Current Gain

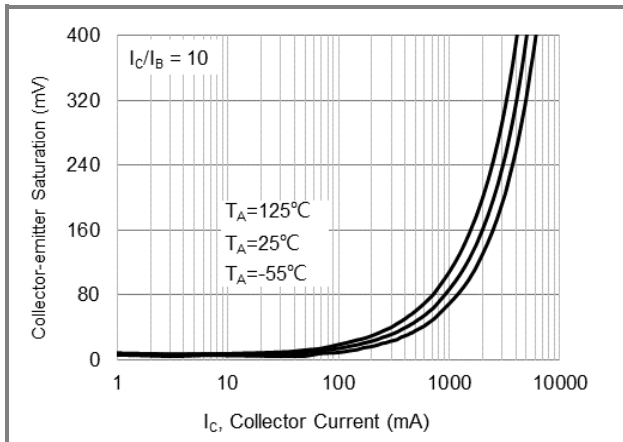


Fig.3 Collector-Emitter Saturation Voltage

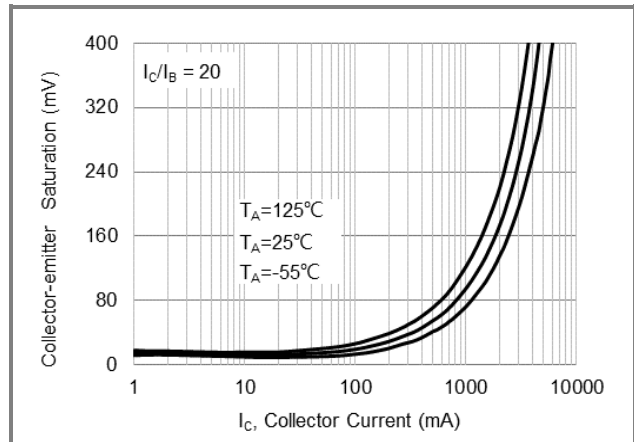


Fig.4 Collector-Emitter Saturation Voltage

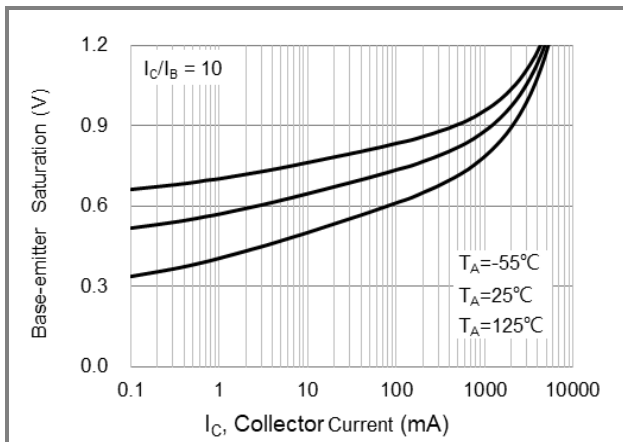


Fig.5 Base-Emitter Saturation Voltage

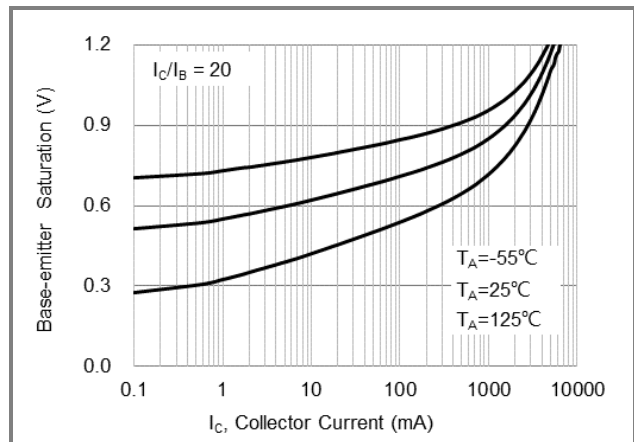


Fig.6 Base-Emitter Saturation Voltage

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TYPICAL CHARACTERISTIC CURVES

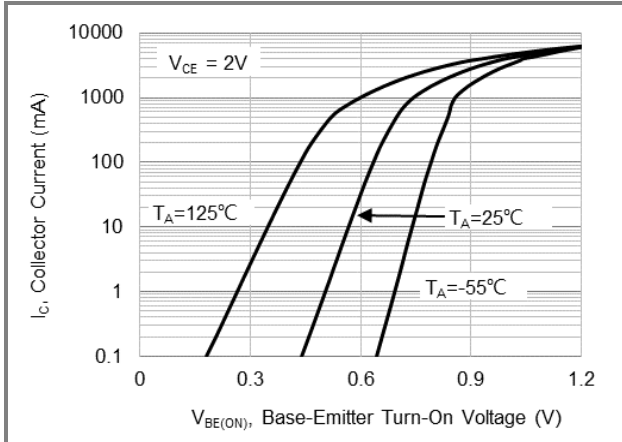


Fig.7 Base-Emitter Turn-On Voltage

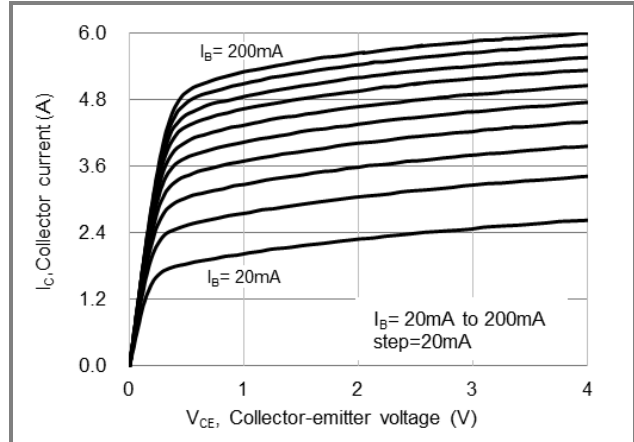


Fig.8 Collector Current

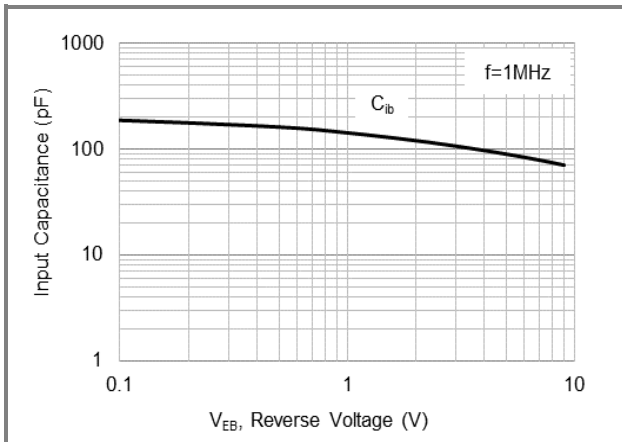


Fig.9 Input Capacitance

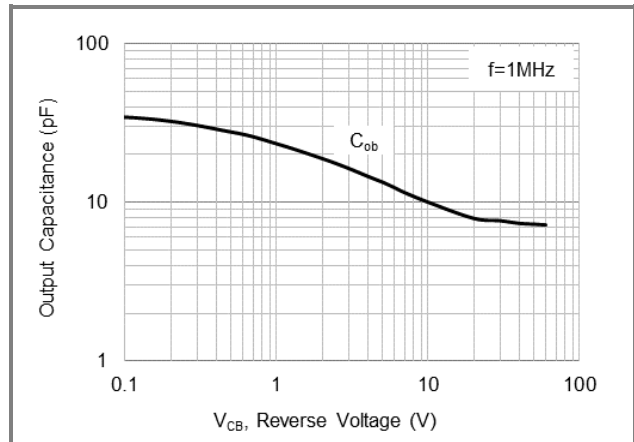


Fig.10 Output Capacitance

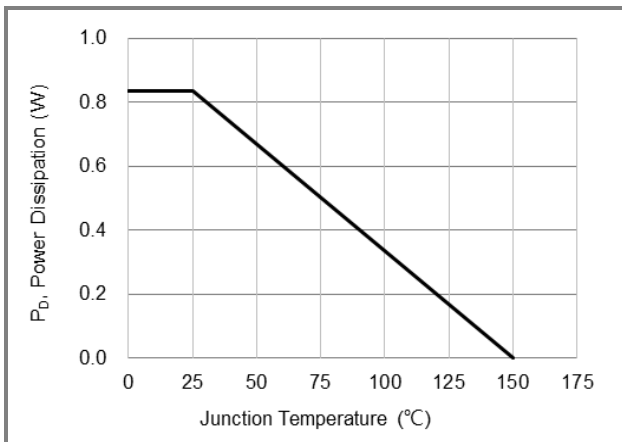


Fig.11 Input Capacitance

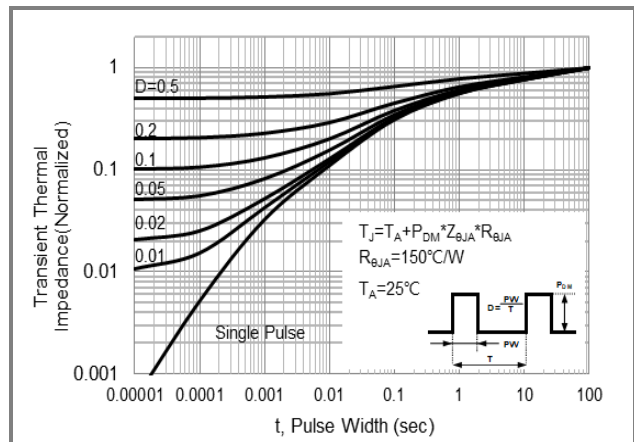


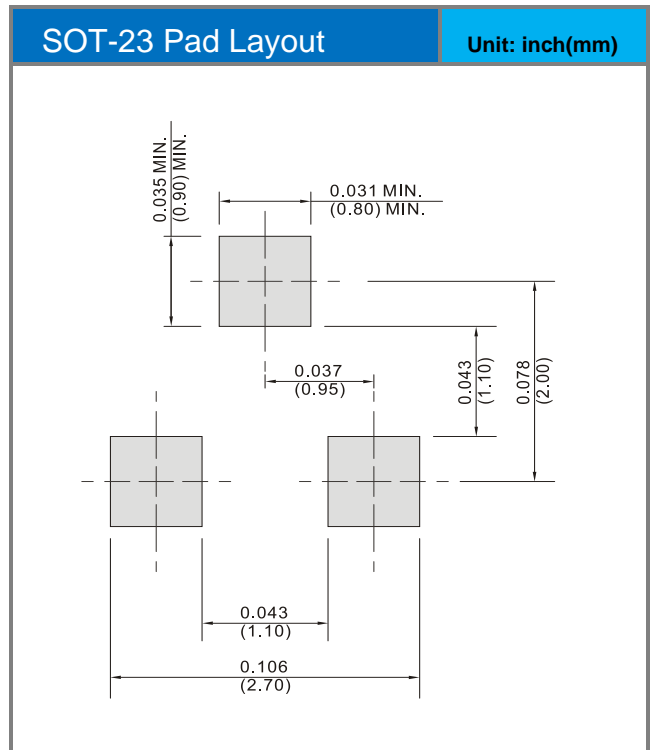
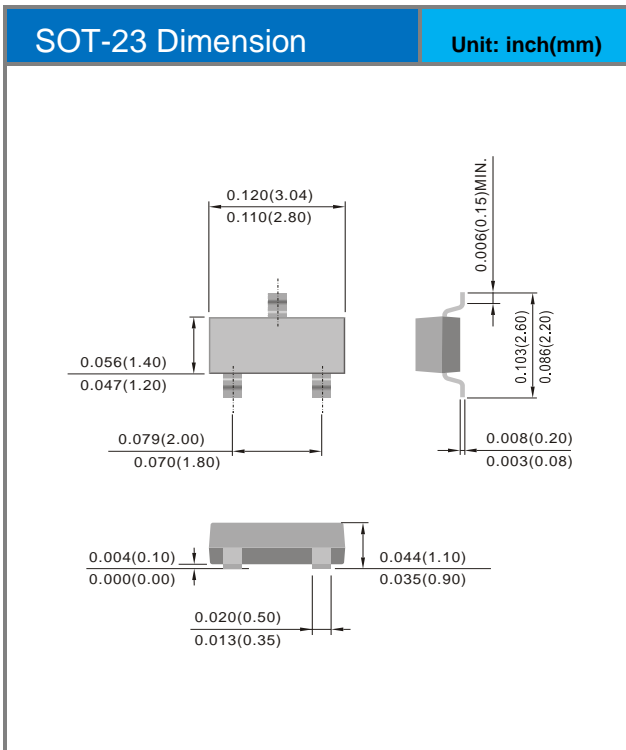
Fig.12 Output Capacitance

PBSS4250SA

Product and Packing Information

Part No.	Package Type	Packing Type	Marking
PBSS4250SA	SOT-23	3K pcs / 7" reel	425

Packaging Information & Mounting Pad Layout



PBSS4250SA

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