

PBSS5250SA

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

Voltage

-50V

Current

-2A

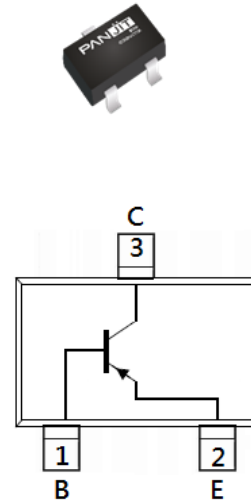
Features

- Silicon PNP 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
- NPN complement : PBSS4250SA

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}	-50	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	$^\circ\text{C/W}$

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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	-50	-	-	
Emitter-Base Breakdown Voltage	BV _{EBO}	I _E = -0.1mA, I _C = 0A	-7	-	-	
Collector Cutoff Current	I _{CBO}	V _{CB} = -50V, 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	150	-	-	-
		V _{CE} = -2V, I _C = -500mA	100	190	300	
		V _{CE} = -2V, I _C = -1A	100	-	-	
		V _{CE} = -2V, I _C = -2A	70	-	-	
Collector-Emitter Saturation Voltage ^(Note 1)	V _{CE(SAT)}	I _C = -500mA, I _B = -50mA	-	-60	-90	mV
		I _C = -1A, I _B = -50mA	-	-120	-250	
		I _C = -2A, I _B = -100mA	-	-230	-350	
		I _C = -2A, I _B = -200mA	-	-180	-320	
Collector-Emitter Saturation resistance	R _{CE(SAT)}	I _C = -2A, I _B = -200mA	-	90	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	-	-0.82	-1.1	
Transition Frequency	f _T	V _{CE} = -2V, I _E = -300mA	-	180	-	MHz
Base input Capacitance	C _{IB}	V _{EB} = -0.5V, f=1MHz	-	174	-	pF
Collector Output Capacitance	C _{OB}	V _{CB} = -10V, f=1MHz	-	20.3	-	

Notes :

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

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TYPICAL CHARACTERISTIC CURVES

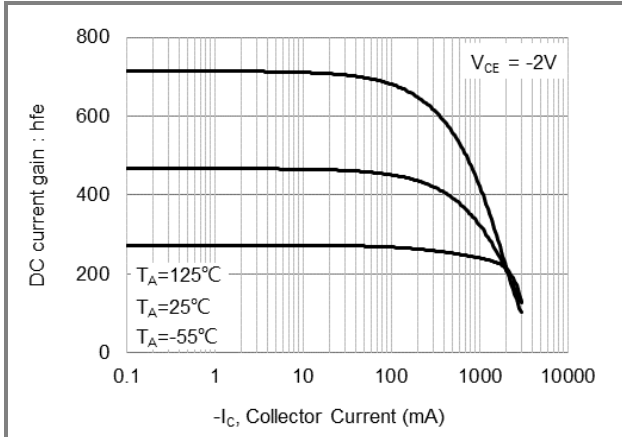


Fig.1 DC Current Gain

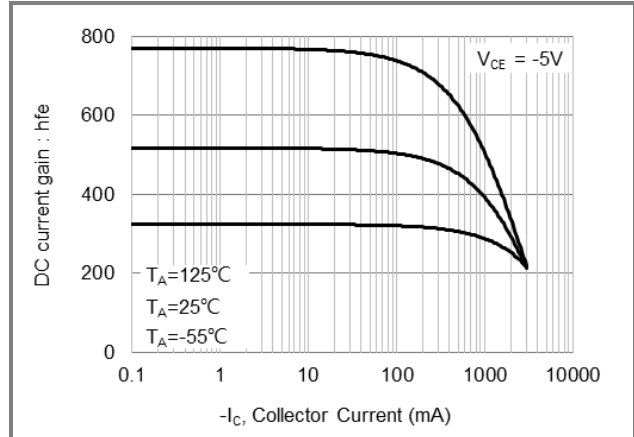


Fig.2 DC Current Gain

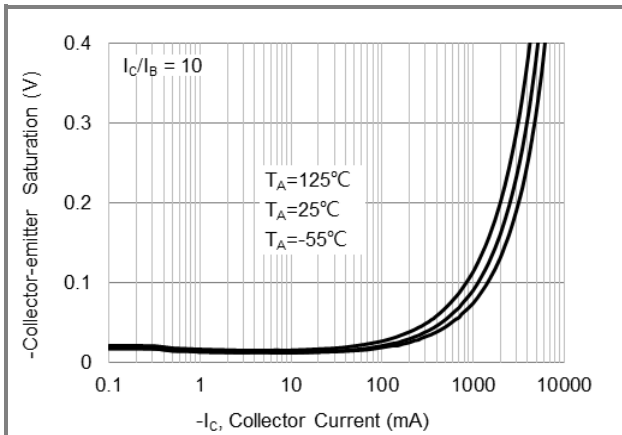


Fig.3 Collector-Emitter Saturation Voltage

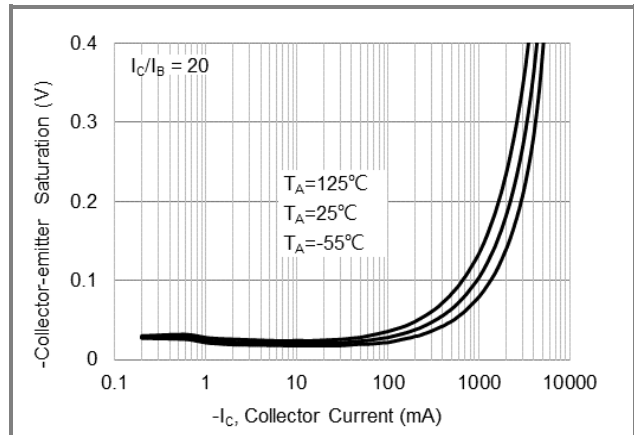


Fig.4 Collector-Emitter Saturation Voltage

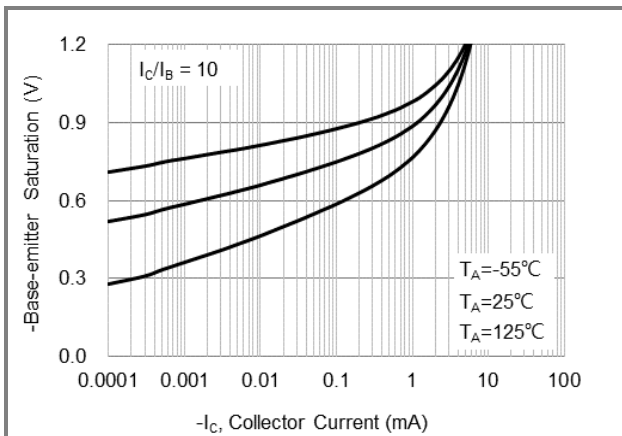


Fig.5 Base-Emitter Saturation Voltage

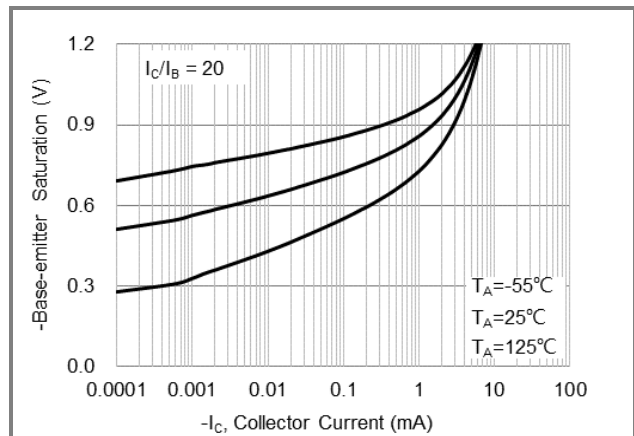


Fig.6 Base-Emitter Saturation Voltage

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TYPICAL CHARACTERISTIC CURVES

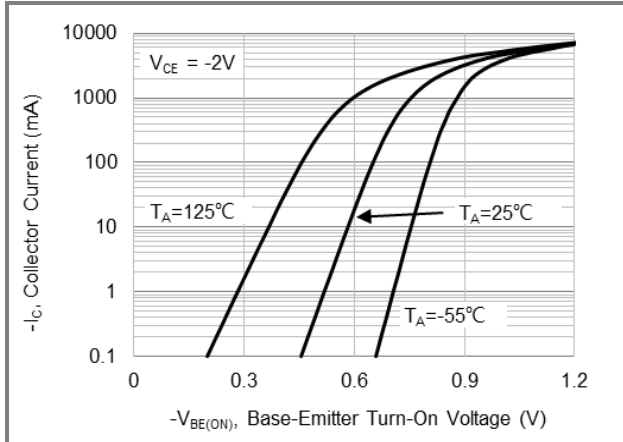


Fig.7 Base-Emitter Turn-On Voltage

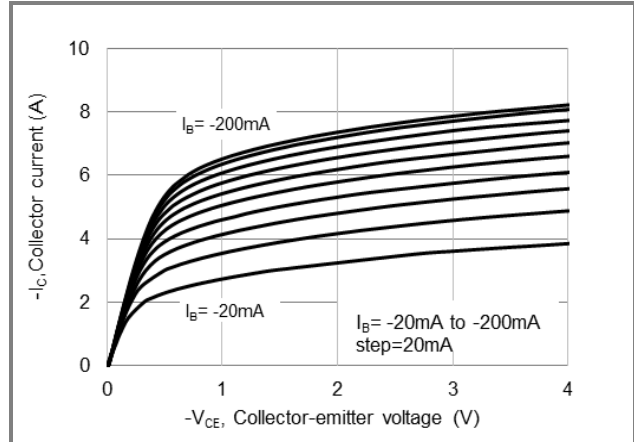


Fig.8 Collector Current

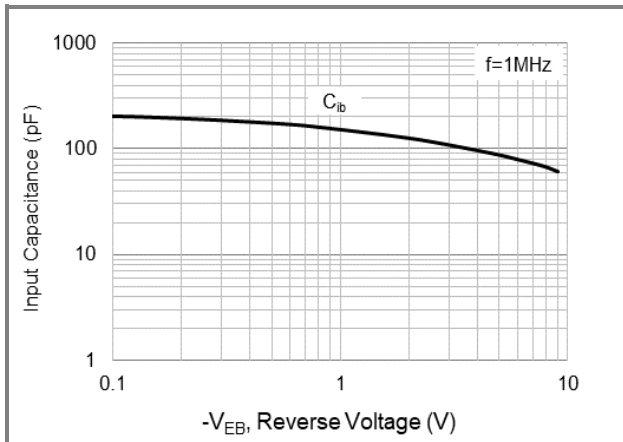


Fig.9 Input Capacitance

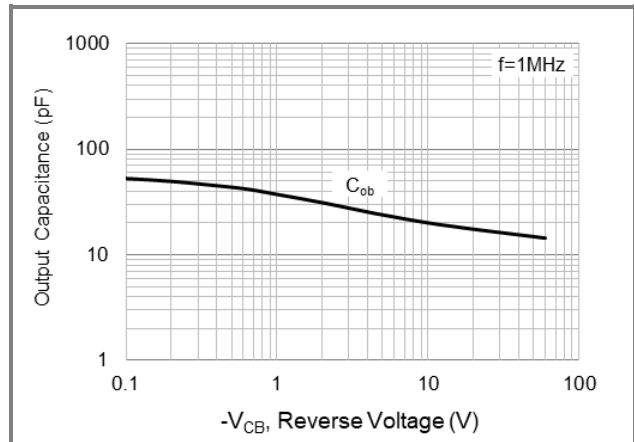


Fig.10 Output Capacitance

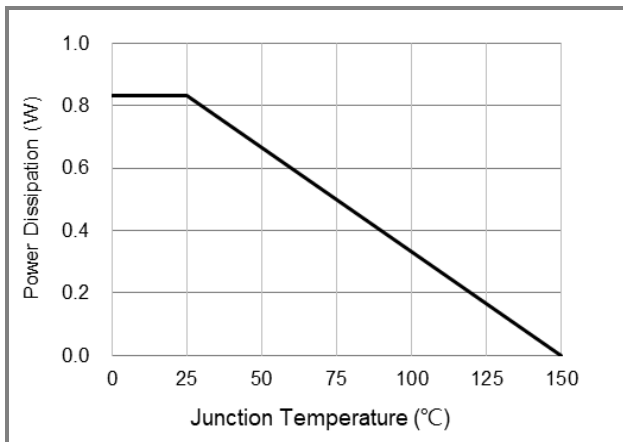


Fig.11 Power Derating Curve

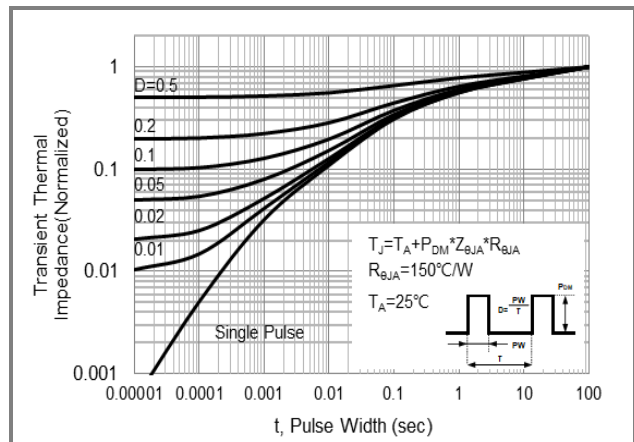


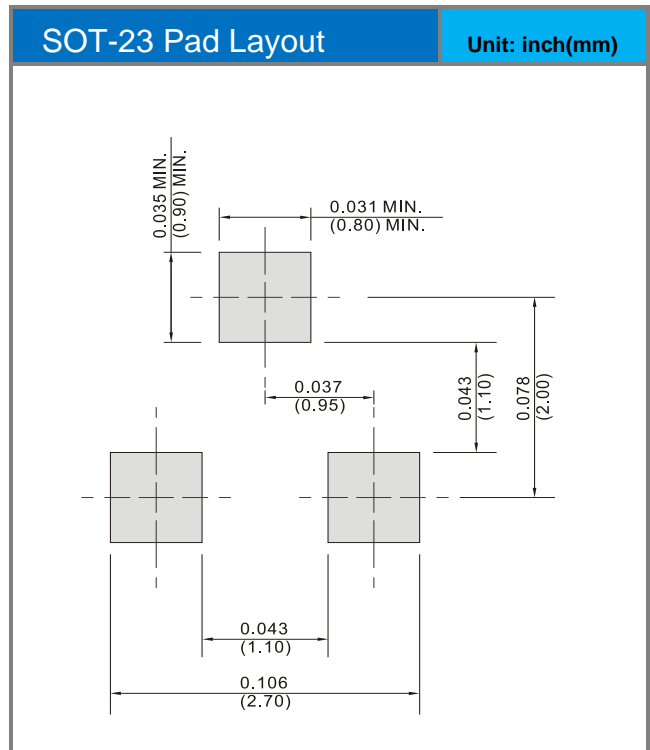
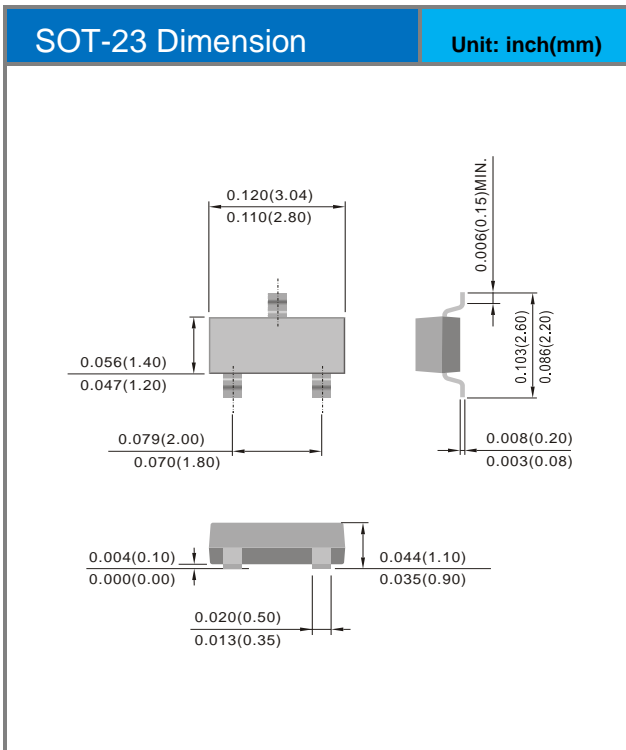
Fig.12 Normalized Transient Thermal Impedance

PBSS5250SA

Product and Packing Information

Part No.	Package Type	Packing Type	Marking
PBSS5250SA	SOT-23	3K pcs / 7" reel	525

Packaging Information & Mounting Pad Layout



PBSS5250SA

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