

PNP Plastic-Encapsulate Transistors

Application

- Heavy duty battery powered equipment (Automotive, Telecom and Audio/Video) such as motor and lamp drivers
- V_{CESat} critica lapplications such as the latest low supply voltage IC applications
- All battery driven equipment to save battery power.

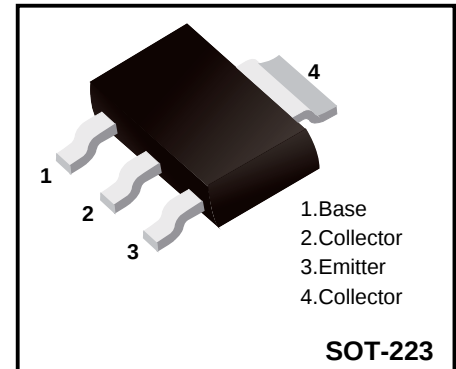
Feature

- High current (max.10A)
- Low saturation voltage V_{CESat}
- Complement to PBSS4540Z

Marking: PB5540

Absolute Maximum Rating ($T_C=25^{\circ}C$ unless otherwise noted)

Parameter	Symbol	Value	Unit
Collector-Base Voltage	BV_{CBO}	-40	V
Collector-Emitter Voltage	BV_{CEO}	-40	V
Emitter-Base Voltage	BV_{EBO}	-6	V
Collector Current(DC)	I_C	-5	A
Peak collector current Current	I_{CM}	-10	A
Collector Power Dissipation	P_C	1.35	W
Junction Temperature	T_j	150	$^{\circ}C$
Storage Temperature	T_{stg}	-55~150	$^{\circ}C$



Electrical Characteristics ($T_C=25^{\circ}C$ unless otherwise noted)

Parameter	Symbol	Conditions	Value			Unit
			Min	Typ	Max	
Collector-base breakdown voltage	BV_{CBO}	$I_C = -100\mu A, I_E = 0$	-40			V
Collector-emitter breakdown voltage	BV_{CEO}	$I_C = -1mA, I_B = 0$	-40			V
Emitter-base breakdown voltage	BV_{EBO}	$I_E = -100\mu A, I_C = 0$	-6			V
Collector cut-off current	I_{CBO}	$V_{CB} = -30V, I_B = 0$			-100	nA
Emitter cut-off current	I_{EBO}	$V_{EB} = -5V, I_C = 0$			-100	nA
* DC current gain	h_{FE}	$V_{CE} = -2V, I_C = -500mA$ $V_{CE} = -2V, I_C = -1A$ $V_{CE} = -2V, I_C = -2A$ $V_{CE} = -2V, I_C = -5A$	250 200 - 50	350 250 225 100		
* Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = -500mA, I_B = -50mA$		-80	-120	mV
		$I_C = -1A, I_B = -10mA$		-120	-170	mV
		$I_C = -2A, I_B = -200mA$		-110	-160	mV
		$I_C = -5A, I_B = -500mA$		-250	-375	mV
*Equivalent on-resistance	R_{CESat}	$I_C = -2A, I_B = -200mA$		<55	<80	m Ω
* Base-emitter saturation voltage	$V_{BE(sat)}$	$I_C = -5A, I_B = -500mA$			-1.3	V
* Base-emitter tunn-on voltage	$V_{BE(on)}$	$V_{CE} = -2V, I_C = -2A$		-0.8	-1.25	V
Transition frequency	f_T	$V_{CE} = -10V, I_C = -100mA$	60	120		MHz
Collector capacitance	C_C	$V_{CB} = -10V, I_E = I_C = 0, f = 1MHz$			105	pF

* Pulse test: $PW \leq 300\mu s$, duty cycle $\leq 2\%$ Pulse

Typical Characteristics

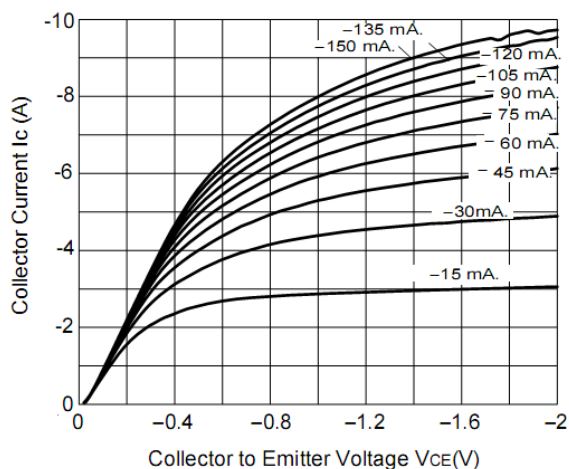


Figure 1. Static Characteristic

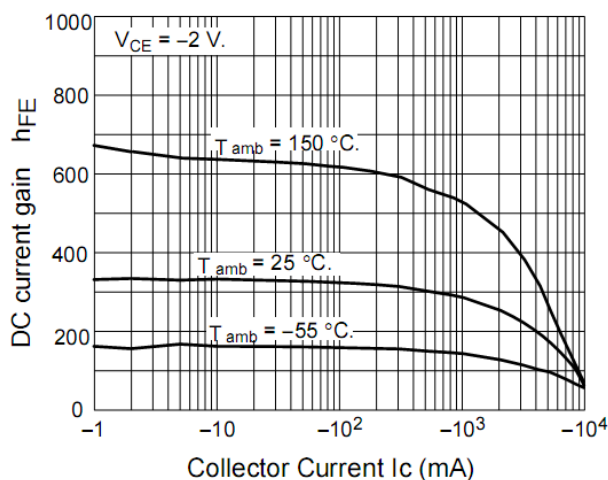


Figure 2. DC current Gain

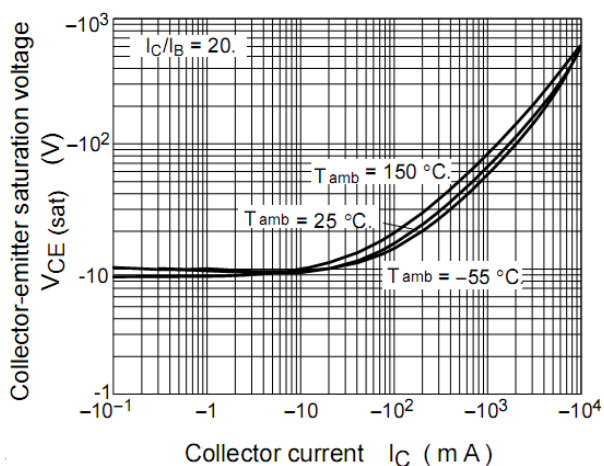


Figure 3. Collector-Emitter Saturation Voltage

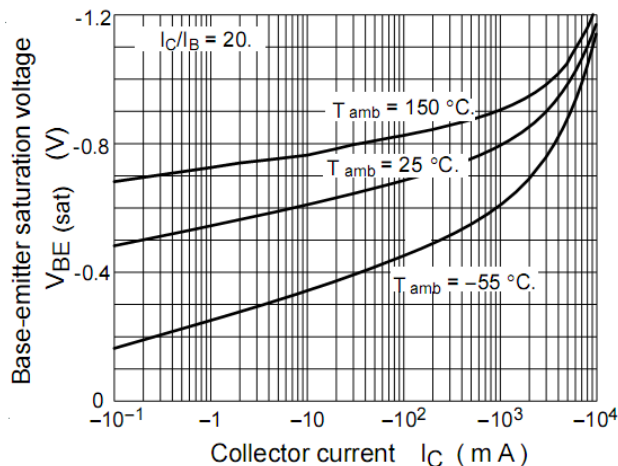


Figure 4. Base-Emitter Saturation Voltage

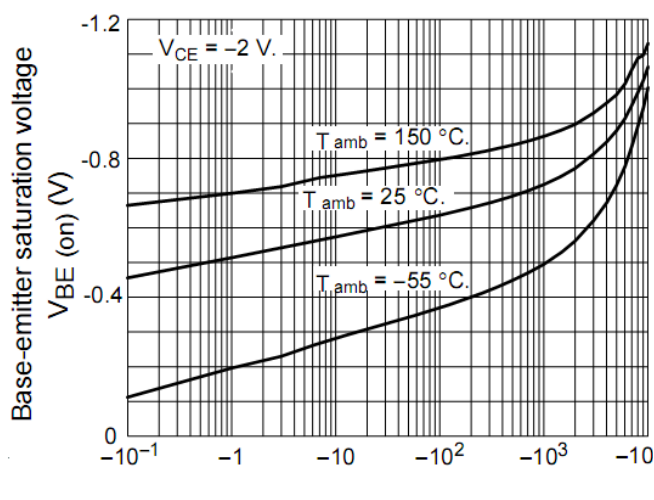


Figure 5. Base-Emitter on Voltage

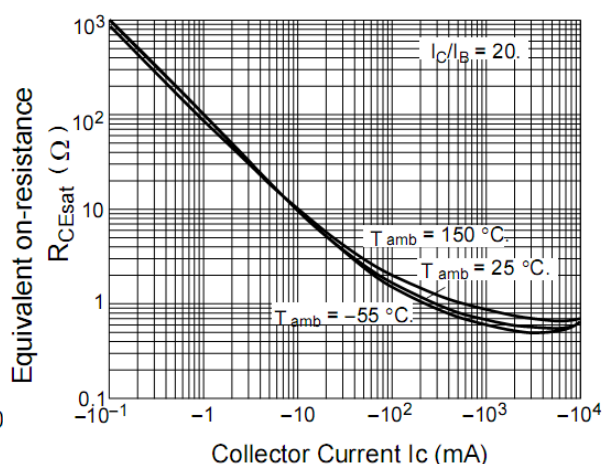


Figure 6. Equivalent on-resistance

Ordering information

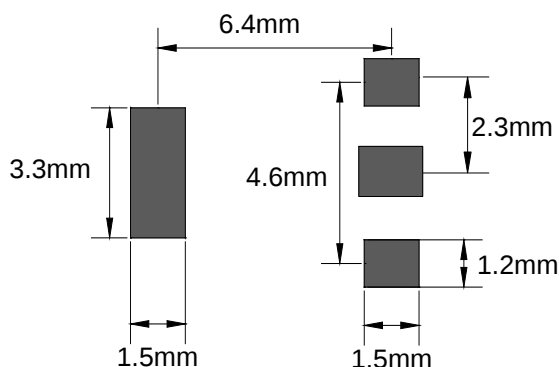
Package	Packing Description	Base Quantity	Packing Quantity
SOT-223	Tape/Reel, 7" reel	1000pcs/Reel	6000PCS/Box 30000PCS/Carton
	Tape/Reel, 13" reel	2500pcs/Reel	5000PCS/Box 30000PCS/Carton

Package Dimensions

SOT-223

Dlm	Millimeter		Inches	
	Min.	Max.	Min.	Max.
A	1.50	1.80	0.059	0.071
A1	0.00	0.10	0.000	0.004
A2	1.50	1.70	0.059	0.067
b	0.65	0.75	0.026	0.030
c	0.20	0.30	0.008	0.012
D	6.40	6.60	0.252	0.260
D1	2.90	3.10	0.114	0.122
E	3.30	3.70	0.130	0.146
E1	6.85	7.15	0.270	0.281
e	2.20	2.40	0.087	0.094
e1	4.40	4.80	0.173	0.189
L	1.65	1.85	0.065	0.073
L1	0.90	1.15	0.035	0.045

The recommended mounting pad size



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