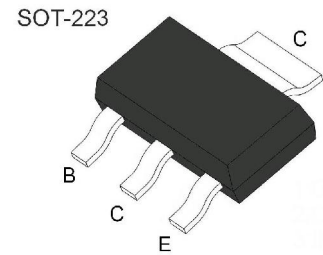


Application

- Power management
 - DC/DC converters
 - Supply line switching
 - Battery charger
 - Linear voltage regulation (LDO).
- Peripheral drivers
 - Driver in low supply voltage applications, e.g. lamps, LEDs
 - Inductive load driver, e.g. relays, buzzers, motors.



Feature

- Low collector-emitter saturation voltage
- High collector current capability: I_C and I_{CM}
- High collector current gain (h_{FE}) at high I_C
- Higher efficiency leading to less heat generation
- Complement to PBSS4350Z

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

Parameter	Symbol	Value	Unit
Collector-Base Voltage	BV_{CBO}	-60	V
Collector-Emitter Voltage	BV_{CEO}	-50	V
Emitter-Base Voltage	BV_{EBO}	-6	V
Collector Current(DC)	I_C	-3	A
Peak collector current Current	I_{CM}	-5	A
Collector Power Dissipation	P_C	1.35	W
Junction Temperature	T_j	150	$^{\circ}C$
Storage Temperature	T_{stg}	-55~150	$^{\circ}C$

Thermal Characteristics

Parameter	Symbol	Cnditions	Value	Unit
Resistance from junction to ambient in	$R_{\theta JA}$	in free air; notes 1	92	$^{\circ}C/W$
		in free air; notes 2	62.5	$^{\circ}C/W$

Notes

1. Device mounted on a printed-circuit board; single sided copper; tinplated; mounting pad for collector $1cm^2$
2. Device mounted on a printed-circuit board; single sided copper; tinplated; mounting pad for collector $6cm^2$

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

Parameter	Symbol	Conditions	Value			Unit
			Min	Typ	Max	
Collector-base breakdown voltage	BV_{CBO}	$I_C = -100\mu\text{A}, I_E = 0$	-60			V
Collector-emitter breakdown voltage	BV_{CEO}	$I_C = -1\text{mA}, I_B = 0$	-50			V
Emitter-base breakdown voltage	BV_{EBO}	$I_E = -100\mu\text{A}, I_C = 0$	-6			V
Collector cut-off current	I_{CBO}	$V_{CB} = -50\text{V}, I_B = 0$			-100	nA
Emitter cut-off current	I_{EBO}	$V_{EB} = -5\text{V}, I_C = 0$			-100	nA
* DC current gain	h_{FE}	$V_{CE} = -2\text{V}, I_C = -500\text{mA}$ $V_{CE} = -2\text{V}, I_C = -1\text{A}$ $V_{CE} = -2\text{V}, I_C = -2\text{A}$	200 200 100			
* Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = -500\text{mA}, I_B = -50\text{mA}$			-100	mV
		$I_C = -1\text{A}, I_B = -50\text{mA}$			-180	mV
		$I_C = -2\text{A}, I_B = -200\text{mA}$			-300	mV
*Equivalent on-resistance	R_{CEsat}	$I_C = -2\text{A}, I_B = -200\text{mA}$			150	m Ω
* Base-emitter saturation voltage	$V_{BE(sat)}$	$I_C = -2\text{A}, I_B = -200\text{mA}$			-1.3	V
* Base-emitter turn-on voltage	$V_{BE(on)}$	$V_{CE} = -2\text{V}, I_C = -1\text{A}$			-1.1	V
Transition frequency	f_T	$V_{CE} = -5\text{V}, I_C = -100\text{mA}$	100			MHz
Collector capacitance	C_C	$V_{CB} = -10\text{V}, I_E = I_C = 0, f = 1\text{MHz}$			40	pF

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

Typical Characteristics

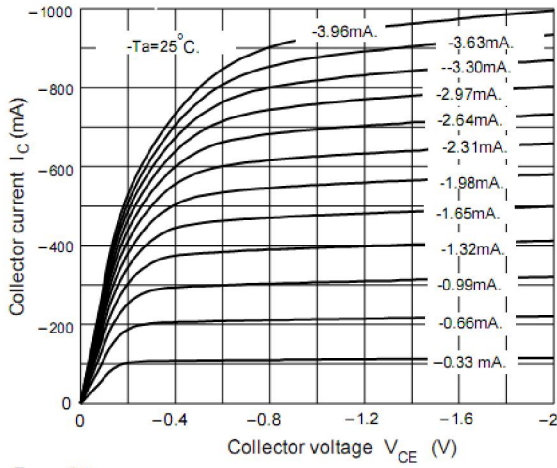


Figure 1. Static Characteristic

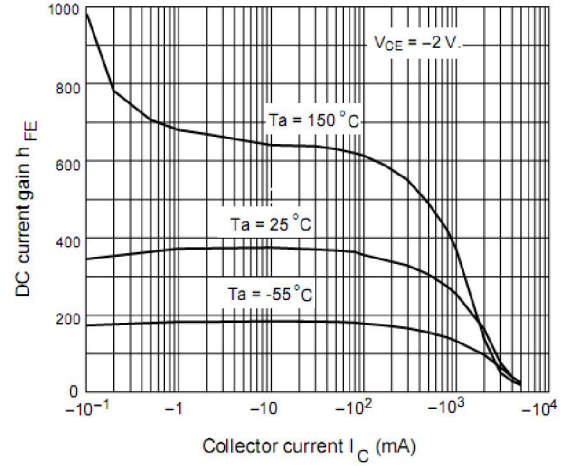


Figure 2. DC current Gain

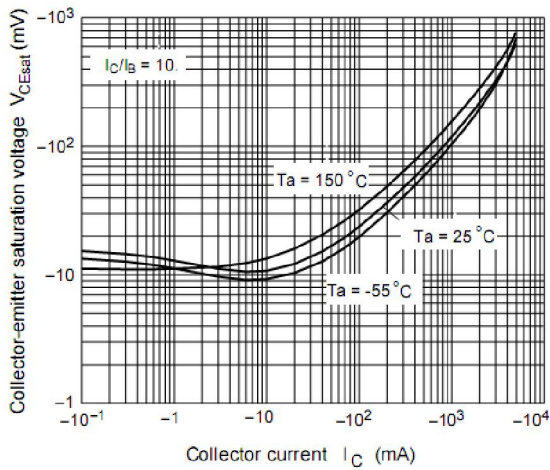


Figure 3. Collector-Emitter Saturation Voltage

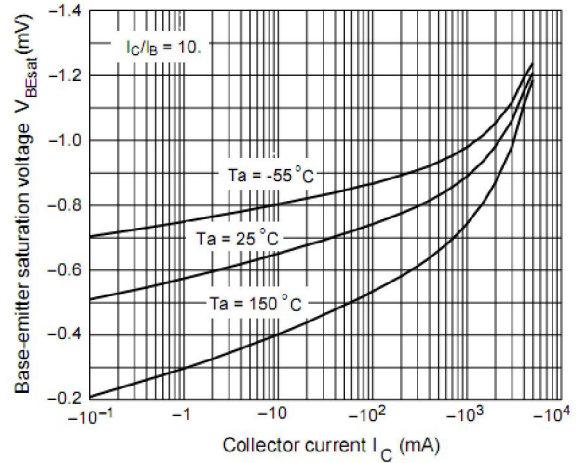


Figure 4. Base-Emitter Saturation Voltage

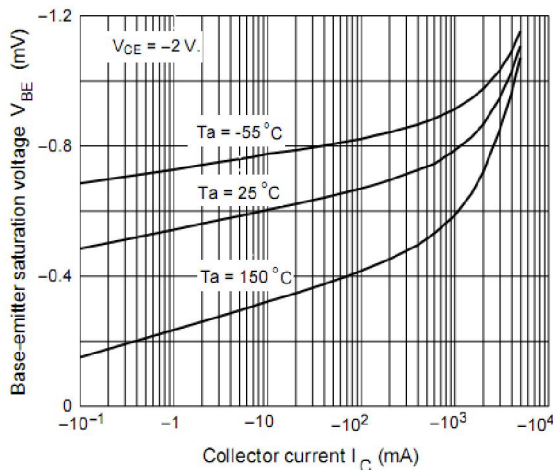


Figure 5. Base-Emitter on Voltage

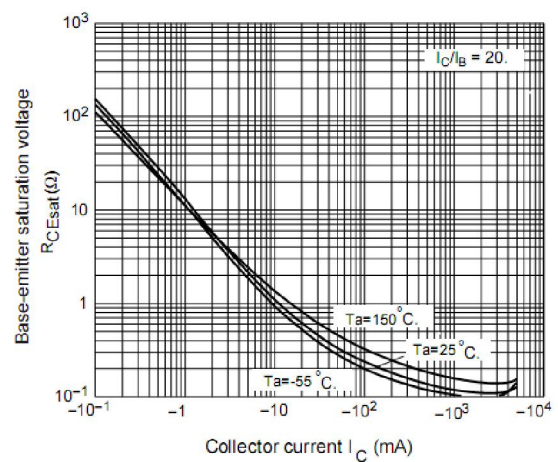
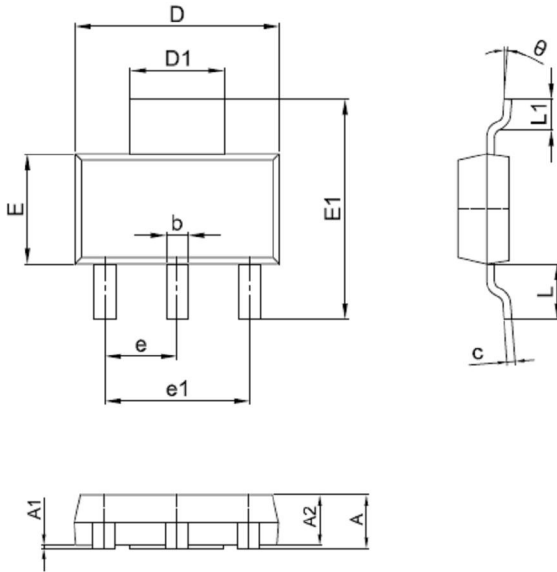


Figure 6. Equivalent on-resistance

Package Dimensions



Symbol	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