



2SB1429

PNP Low Vce(sat) Transistor

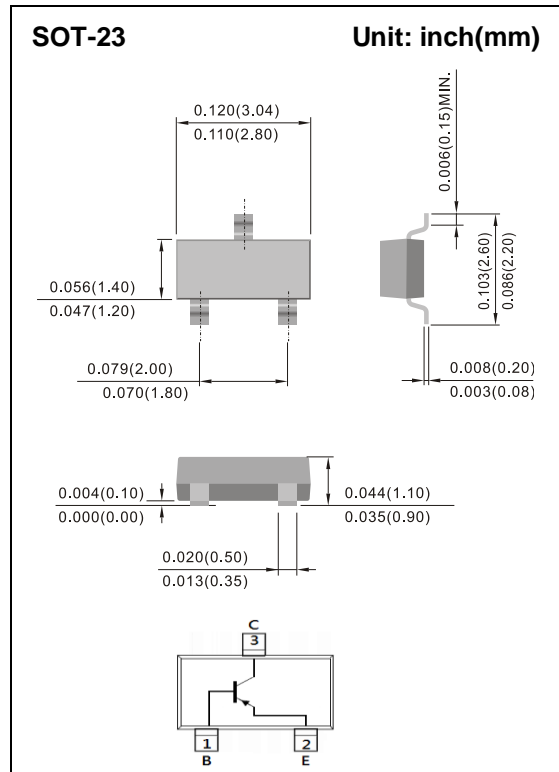
Voltage -20V **Current** -3A

Features

- Silicon PNP epitaxial type
- Low Vce(sat) -0.3V(max)@Ic/Ib=-3A/-0.3A
- High collector current capability
- Excellent DC current gain characteristics
- Lead free in compliance with EU RoHS 2011/65/EU directive
- Green molding compound as per IEC61249 Std. (Halogen Free)

Mechanical Data

- Case: SOT-23 Package
- Terminals: Solderable per MIL-STD-750, Method 2026



Maximum Ratings and Thermal Characteristics (T_A=25 °C unless otherwise noted)

PARAMETER	SYMBOL	LIMIT	UNITS
Collector-Base Voltage	V _{CBO}	-20	V
Collector-Emitter Voltage	V _{CEO}	-20	V
Emitter-Base Voltage	V _{EBO}	-7	V
Collector Current (DC)	I _C	-3	A
Collector Current (Pulse)	I _{CP}	-5	A
Base Current	I _B	-0.3	A
Collector Power Dissipation	P _D	1.25	W
Typical Thermal Resistance from Junction to Ambient ^(Note 1)	R _{θJA}	100	°C/W
Operating Junction and Storage Temperature Range	T _J , T _{STG}	-55~150	°C

Note: 1. Mounted on FR4 PCB at 1 inch square copper pad.



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

PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNITS
OFF Characteristics						
Collector-Emitter Breakdown Voltage	BV_{CEO}	$I_C = -10\text{mA}, I_B = 0\text{A}$	-20	-	-	V
Collector-Base Breakdown Voltage	BV_{CBO}	$I_C = -0.1\text{mA}, I_E = 0\text{A}$	-20	-	-	V
Emitter-Base Breakdown Voltage	BV_{EBO}	$I_E = -0.1\text{mA}, I_C = 0\text{A}$	-7	-	-	V
Collector Cutoff Current	I_{CBO}	$V_{CB} = -20\text{V}, I_E = 0\text{A}$	-	-	-100	nA
Emitter Cutoff Current	I_{EBO}	$V_{EB} = -7\text{V}, I_C = 0\text{A}$	-	-	-100	nA
ON characteristics						
DC Current Gain (Note 2)	h_{FE}	$V_{CE} = -2\text{V}, I_C = -0.1\text{A}$	200	-	500	-
		$V_{CE} = -2\text{V}, I_C = -0.5\text{A}$	200	-	500	
		$V_{CE} = -2\text{V}, I_C = -1.6\text{A}$	100	-	-	
		$V_{CE} = -2\text{V}, I_C = -2.0\text{A}$	80	-	-	
		$V_{CE} = -2\text{V}, I_C = -3.0\text{A}$	60	-	-	
Collector-Emitter Saturation Voltage (Note 2)	$V_{CE(SAT)}$	$I_C = -0.5\text{A}, I_B = -50\text{mA}$	-	-	-70	mV
		$I_C = -1.6\text{A}, I_B = -53\text{mA}$	-	-	-190	
		$I_C = -2\text{A}, I_B = -100\text{mA}$	-	-	-230	
		$I_C = -3\text{A}, I_B = -300\text{mA}$	-	-	-300	
Base-Emitter Saturation voltage (Note 2)	$V_{BE(SAT)}$	$I_C = -1.6\text{A}, I_B = -53\text{mA}$	-	-	-1.1	V
		$I_C = -3\text{A}, I_B = -300\text{mA}$	-	-	-1.2	
Transition Frequency	f_T	$V_{CE} = -2\text{V}, I_E = 0.5\text{A}$	-	160	-	MHz
Collector Output Capacitance	C_{OB}	$V_{CB} = -10\text{V}, I_E = 0\text{A},$ $f = 1\text{MHz}$	-	40	-	pF

Note: 2. Pulse width $\leq 300\mu\text{s}$, Duty cycle $\leq 2\%$



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TYPICAL CHARACTERISTIC CURVES

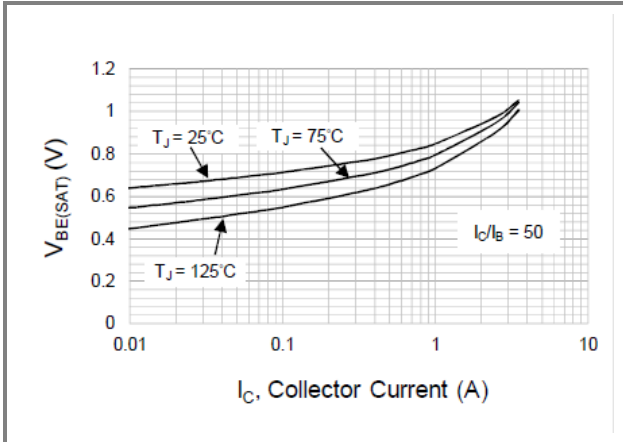


Fig.1 Typical Base-Emitter Saturation Voltage

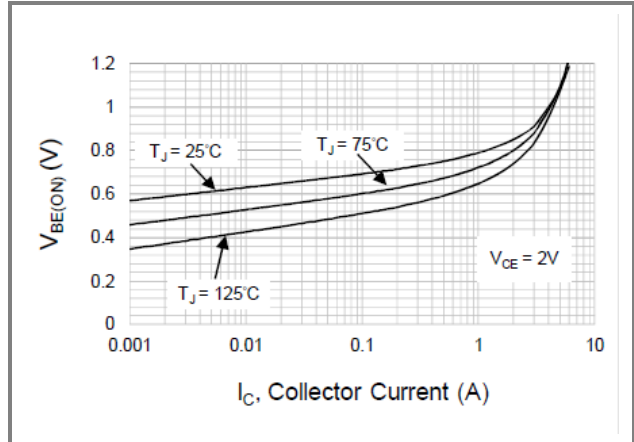


Fig.2 Typical Base-Emitter Saturation Voltage

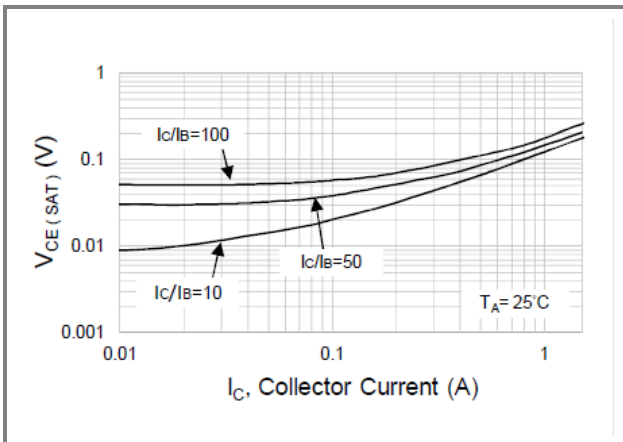


Fig.3 Typical Collector-Emitter Saturation

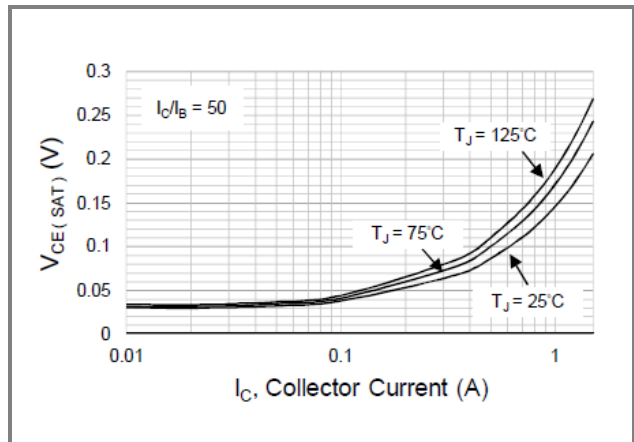


Fig.4 Typical Collector-Emitter Saturation

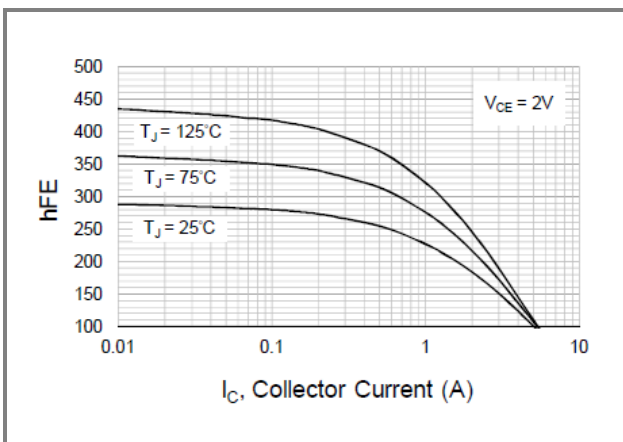


Fig.5 Typical DC Current Gain vs Collector Current

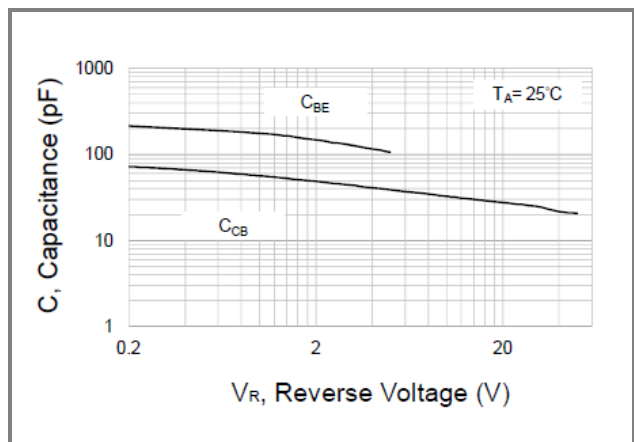


Fig.6 Typical Capacitance

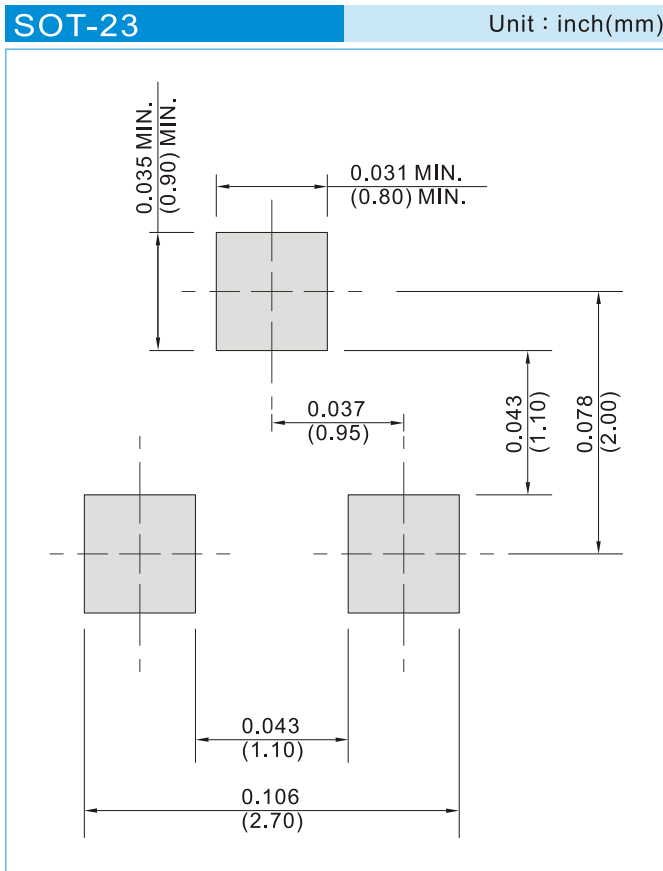


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PART NO PACKING CODE VERSION

Part No Packing Code	Package Type	Packing Type	Marking	Version
2SB1429_R1_00001	SOT-23	3K pcs / 7" reel	B29	Halogen free
2SB1429_R2_00001	SOT-23	12K pcs / 13" reel	B29	Halogen free

MOUNTING PAD LAYOUT





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