



# 2SB1424

Preliminary

PNP SILICON TRANSISTOR

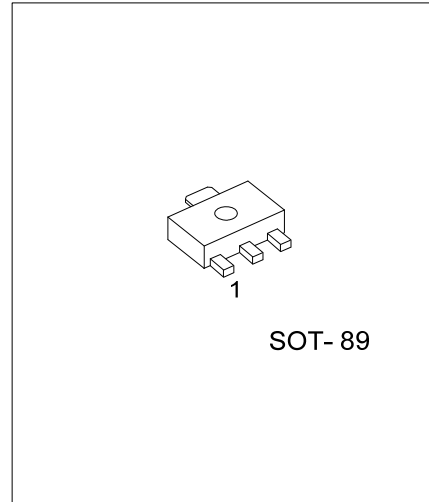
## LOW $V_{CE(SAT)}$ TRANSISTOR

### DESCRIPTION

As the UTC PNP silicon transistor, the **2SB1424** is the epitaxial planar type transistor which has very low  $V_{CE(SAT)}$  (Collector-emitter saturation voltage).

### FEATURES

- \* Very good DC current gain
- \* Very low  $V_{CE(SAT)} = -0.2V @ I_C/I_B = (-2A)/(-0.1A)$



Lead-free: 2SB1424L  
 Halogen-free: 2SB1424G

### ORDERING INFORMATION

Ordering Number			Package	Pin Assignment			Packing
Normal	Lead Free	Halogen Free		1	2	3	
2SB1424-x-AB3-R	2SB1424L-x-AB3-R	2SB1424G-x-AB3-R	SOT-89	B	C	E	Tape Reel

<p>2SB1424L-x-AB3-R</p> <p>(1) Packing Type        (2) Package Type        (3) Rank        (4) Lead Plating</p>	<p>(1) R: Tape Reel        (2) AB3: SOT-89        (3) x: refer to Classification of <math>h_{FE}</math>        (4) G: Halogen Free, L: Lead Free,        Blank: Pb/Sn</p>
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■ **ABSOLUTE MAXIMUM RATING** ( $T_a=25^\circ\text{C}$ )

PARAMETER	SYMBOL	RATINGS	UNIT
Collector-Base Voltage	$V_{CBO}$	-20	V
Collector-Emitter Voltage	$V_{CEO}$	-20	V
Emitter-Base Voltage	$V_{EBO}$	-6	V
Collector Current	DC	-3	A
	Pulse(Note 2)	-5	
Collector Dissipation	$P_C$	0.5	W
Junction Temperature	$T_J$	150	$^\circ\text{C}$
Storage Temperature	$T_{STG}$	-55 ~ +150	$^\circ\text{C}$

Note: 1. Absolute maximum ratings are those values beyond which the device could be permanently damaged.

Absolute maximum ratings are stress ratings only and functional device operation is not implied.

2. Pulse test: Pulse Width=10ms

■ **ELECTRICAL CHARACTERISTICS** ( $T_a=25^\circ\text{C}$ , unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Collector-Base Breakdown Voltage	$BV_{CBO}$	$I_C=-50\mu\text{A}$ , $I_E=0$	-20			V
Collector-Emitter Breakdown Voltage	$BV_{CEO}$	$I_C=-1\text{mA}$ , $I_B=0$	-20			V
Emitter-Base Breakdown Voltage	$BV_{EBO}$	$I_E=-50\mu\text{A}$ , $I_C=0$	-6			V
Collector Cutoff Current	$I_{CBO}$	$V_{CB}=-20\text{V}$			-0.1	$\mu\text{A}$
Emitter Cutoff Current	$I_{EBO}$	$V_{EB}=-5\text{V}$			-0.1	$\mu\text{A}$
<b>ON CHARACTERISTICS</b>						
DC Current Gain	$h_{FE}$	$V_{CE}=-2\text{V}$ , $I_C=-0.1\text{A}$	120		390	
Collector-Emitter Saturation Voltage	$V_{CE(SAT)}$	$I_C/I_B = (-2\text{A})/(-0.1\text{A})$			-0.5	V
<b>SMALL-SIGNAL CHARACTERISTICS</b>						
Current Gain Bandwidth Product	$f_T$	$V_{CE}=-2\text{V}$ , $I_E=0.5\text{A}$ , $f=100\text{MHz}$		240		MHz
Output Capacitance	$C_{ob}$	$V_{CB}=-10\text{V}$ , $I_E=0$ , $f=1\text{MHz}$		35		pF

■ **CLASSIFICATION OF  $h_{FE1}$**

RANK	Q	R
RANGE	120-270	180-390

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