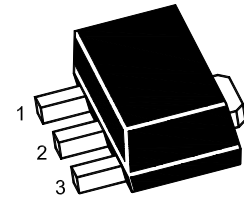


# 2SB1424U

## PNP Silicon Epitaxial Planar Transistor



1.Base 2.Collector 3.Emitter  
SOT-89 Plastic Package

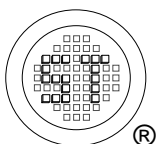
### Absolute Maximum Ratings ( $T_a = 25^\circ\text{C}$ )

| Parameter                               | Symbol            | Value         | Unit             |
|---|-------------------|---------------|------------------|
| Collector Base Voltage                  | $-V_{\text{CBO}}$ | 20            | V                |
| Collector Emitter Voltage               | $-V_{\text{CEO}}$ | 20            | V                |
| Emitter Base Voltage                    | $-V_{\text{EBO}}$ | 6             | V                |
| Collector Current - DC                  | $-I_{\text{C}}$   | 3             | A                |
| Collector Current - Pulse <sup>1)</sup> | $-I_{\text{CP}}$  | 5             | A                |
| Total Power Dissipation                 | $P_{\text{tot}}$  | 0.5           | W                |
| Junction Temperature                    | $T_{\text{J}}$    | 150           | $^\circ\text{C}$ |
| Storage Temperature Range               | $T_{\text{Stg}}$  | - 55 to + 150 | $^\circ\text{C}$ |

<sup>1)</sup> Single pulse,  $P_{\text{W}} = 10 \text{ ms}$ .

### Characteristics at $T_a = 25^\circ\text{C}$

| Parameter   | Symbol                       | Min.            | Typ. | Max. | Unit          |   |
|---|------------------------------|-----------------|------|------|---------------|---|
| DC Current Gain<br>at $-V_{\text{CE}} = 2 \text{ V}$ , $-I_{\text{C}} = 100 \text{ mA}$                             | Current Gain Group Q<br>R    | $h_{\text{FE}}$ | 120  | -    | 270           | - |
|   |                              | $h_{\text{FE}}$ | 180  | -    | 390           | - |
| Collector Base Breakdown Voltage<br>at $-I_{\text{C}} = 50 \mu\text{A}$   | $-V_{(\text{BR})\text{CBO}}$ | 20              | -    | -    | V             |   |
| Collector Emitter Breakdown Voltage<br>at $-I_{\text{C}} = 1 \text{ mA}$  | $-V_{(\text{BR})\text{CEO}}$ | 20              | -    | -    | V             |   |
| Emitter Base Breakdown Voltage<br>at $-I_{\text{E}} = 50 \mu\text{A}$   | $-V_{(\text{BR})\text{EBO}}$ | 6               | -    | -    | V             |   |
| Collector Cutoff Current<br>at $-V_{\text{CB}} = 20 \text{ V}$  | $-I_{\text{CBO}}$            | -               | -    | 0.1  | $\mu\text{A}$ |   |
| Emitter Cutoff Current<br>at $-V_{\text{EB}} = 5 \text{ V}$   | $-I_{\text{EBO}}$            | -               | -    | 0.1  | $\mu\text{A}$ |   |
| Collector Emitter Saturation Voltage<br>at $-I_{\text{C}} = 2 \text{ A}$ , $-I_{\text{B}} = 100 \text{ mA}$         | $-V_{\text{CE}(\text{sat})}$ | -               | -    | 0.5  | V             |   |
| Transition Frequency<br>at $-V_{\text{CE}} = 2 \text{ V}$ , $-I_{\text{E}} = 0.5 \text{ A}$ , $f = 100 \text{ MHz}$ | $f_{\text{T}}$               | -               | 240  | -    | MHz           |   |
| Output Capacitance<br>at $-V_{\text{CB}} = 10 \text{ V}$ , $f = 1 \text{ MHz}$                                      | $C_{\text{ob}}$              | -               | 35   | -    | pF            |   |



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ISO/TS 16949 : 2009 Certificate No. 160713000  
 ISO14001 : 2004 Certificate No. 7116  
 ISO 9001 : 2008 Certificate No. 6071940  
 BS-OHSAS 18001 : 2007 Certificate No. 7116  
 IECQ QC 080000 Certificate No. PFC-18P16-148-1

Dated: 19/02/2016 Rev: 02

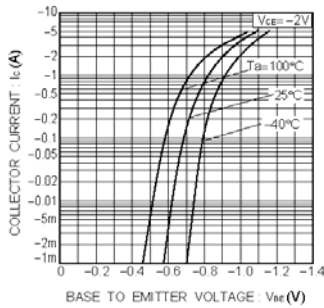


Fig.1 Grounded emitter propagation characteristics

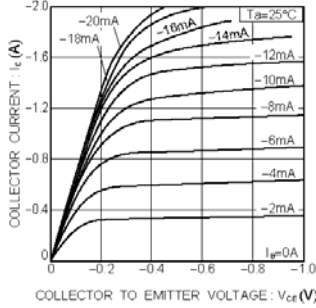


Fig.2 Grounded emitter output characteristics (I)

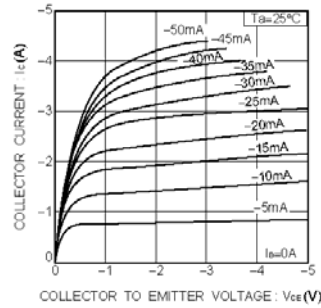


Fig.3 Grounded emitter output characteristics (II)

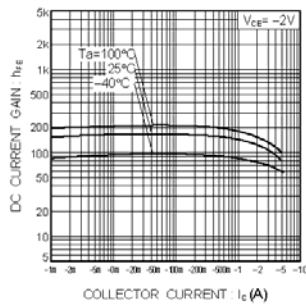


Fig.4 DC current gain vs. collector current

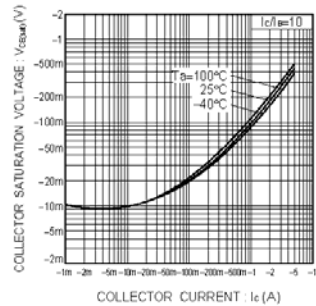


Fig.5 Collector-emitter saturation voltage vs. collector current (I)

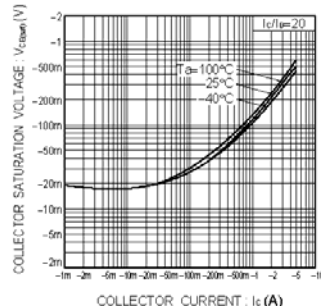


Fig.6 Collector-emitter saturation voltage vs. collector current (II)

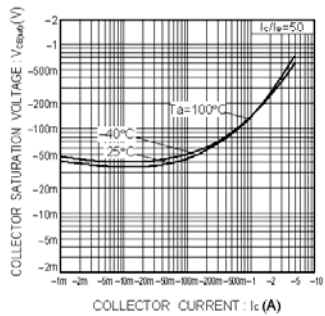


Fig.7 Collector-emitter saturation voltage vs. collector current (III)

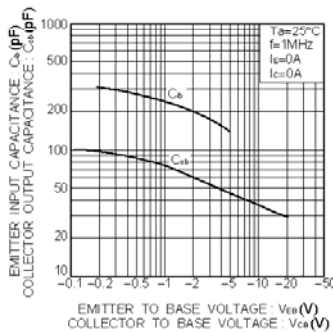


Fig.8 Gain bandwidth product vs. emitter current  
Collector output capacitance vs. collector-base voltage

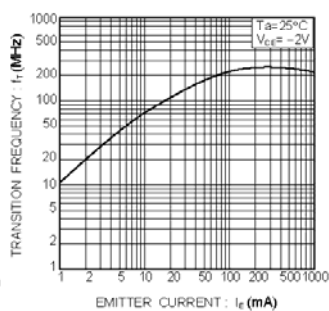
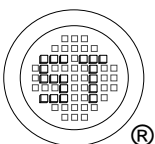


Fig.9 Emitter input capacitance vs. emitter base voltage

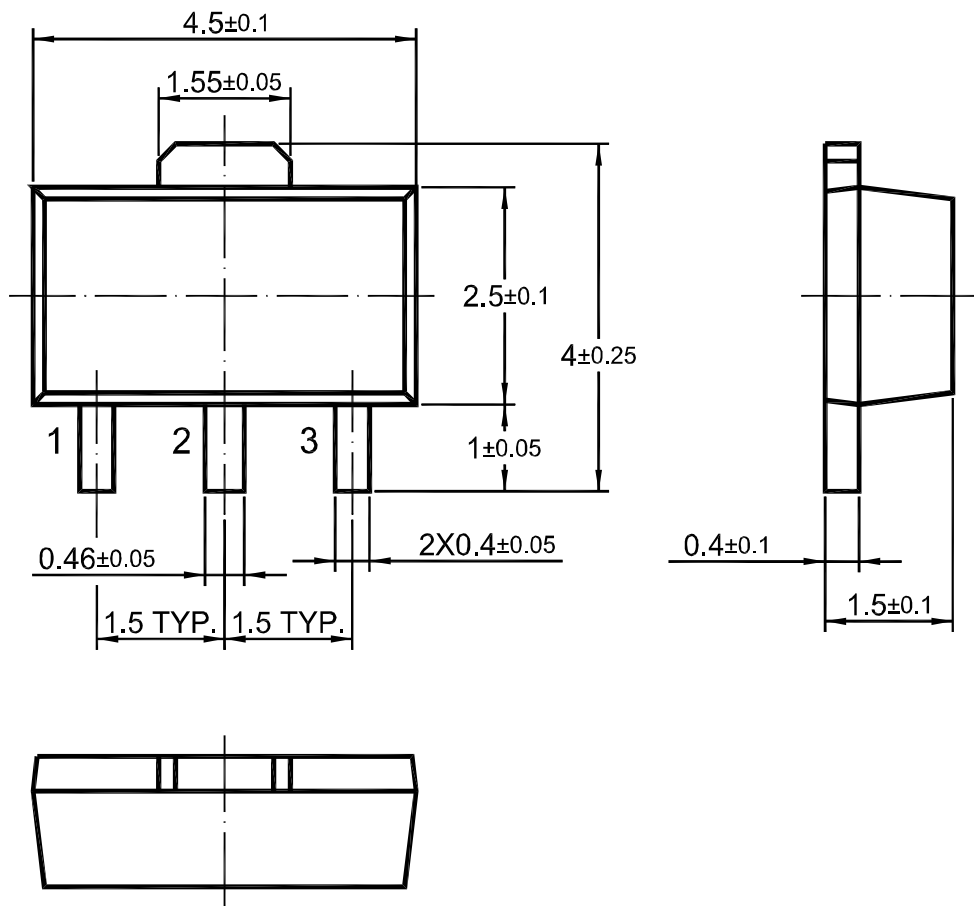


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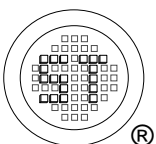


# 2SB1424U

## SOT-89 PACKAGE OUTLINE



Dimensions in mm



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