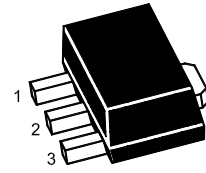


# 2SB1386U

## PNP Silicon Epitaxial Planar Transistor

Low frequency transistor



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

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

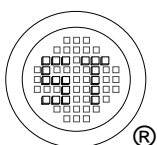
Parameter	Symbol	Value	Unit
Collector Base Voltage	$-V_{\text{CBO}}$	30	V
Collector Emitter Voltage	$-V_{\text{CEO}}$	20	V
Emitter Base Voltage	$-V_{\text{EBO}}$	6	V
Collector Current - DC	$-I_{\text{C}}$	5	A
Collector Current - Pulse <sup>1)</sup>	$-I_{\text{CP}}$	10	A
Collector Power Dissipation	$P_{\text{C}}$	0.5 2 <sup>2)</sup>	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,  $P_{\text{w}} = 10$  ms.

<sup>2)</sup> When mounted on a 40 x 40 x 0.7 mm ceramic board.

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

Parameter	Symbol	Min.	Typ.	Max.	Unit
DC Current Gain at $-V_{\text{CE}} = 2$ V, $-I_{\text{C}} = 500$ mA Current Gain Group	P $h_{\text{FE}}$	82	-	180	-
	Q $h_{\text{FE}}$	120	-	270	-
	R $h_{\text{FE}}$	180	-	390	-
Collector Base Cutoff Current at $-V_{\text{CB}} = 20$ V	$-I_{\text{CBO}}$	-	-	500	nA
Emitter Base Cutoff Current at $-V_{\text{EB}} = 5$ V	$-I_{\text{EBO}}$	-	-	500	nA
Collector Base Breakdown Voltage at $-I_{\text{C}} = 50$ $\mu\text{A}$	$-V_{(\text{BR})\text{CBO}}$	30	-	-	V
Collector Emitter Breakdown Voltage at $-I_{\text{C}} = 1$ mA	$-V_{(\text{BR})\text{CEO}}$	20	-	-	V
Emitter Base Breakdown Voltage at $-I_{\text{E}} = 50$ $\mu\text{A}$	$-V_{(\text{BR})\text{EBO}}$	6	-	-	V
Collector Emitter Saturation Voltage at $-I_{\text{C}} = 4$ A, $-I_{\text{B}} = 100$ mA	$-V_{\text{CE}(\text{sat})}$	-	-	1	V
Transition Frequency at $-V_{\text{CE}} = 6$ V, $I_{\text{E}} = 50$ mA, $f = 100$ MHz	$f_{\text{T}}$	-	120	-	MHz
Output Capacitance at $-V_{\text{CB}} = 20$ V, $I_{\text{E}} = 0$ , $f = 1$ MHz	$C_{\text{ob}}$	-	60	-	pF



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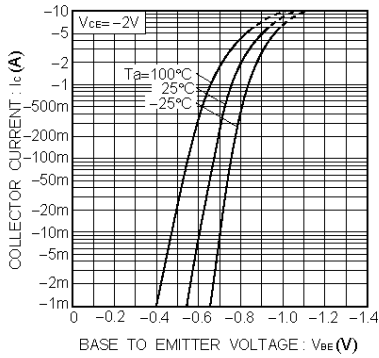


Fig.1 Grounded emitter propagation characteristics

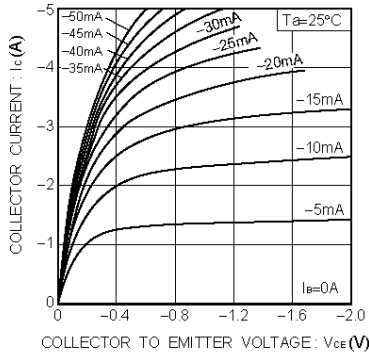


Fig.2 Grounded emitter output characteristics

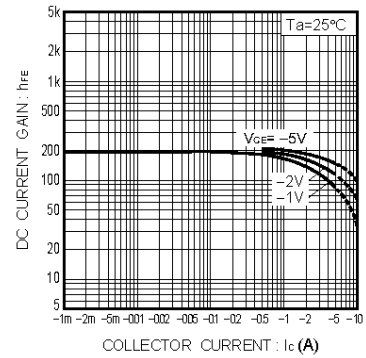


Fig.3 DC current gain vs. collector current ( I )

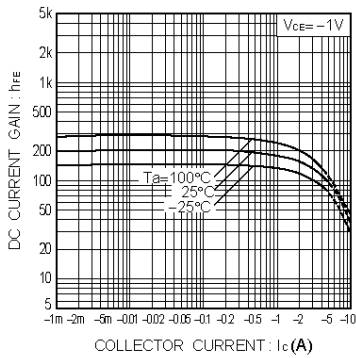


Fig.4 DC current gain vs. collector current (II)

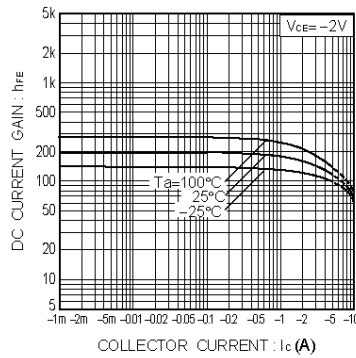


Fig.5 DC current gain vs. collector current (III)

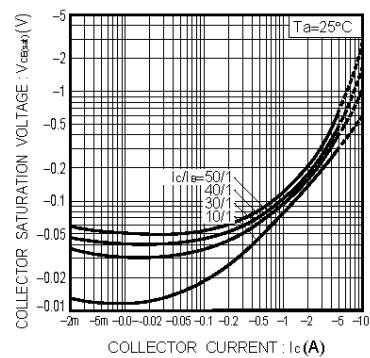


Fig.6 Collector-emitter saturation voltage vs. collector current ( I )

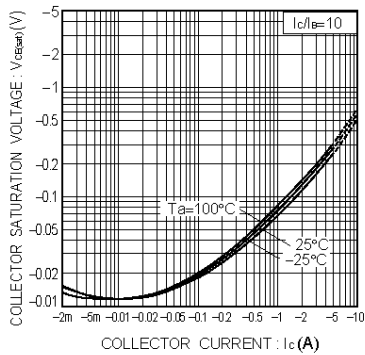


Fig.7 Collector-emitter saturation voltage vs. collector current ( II )

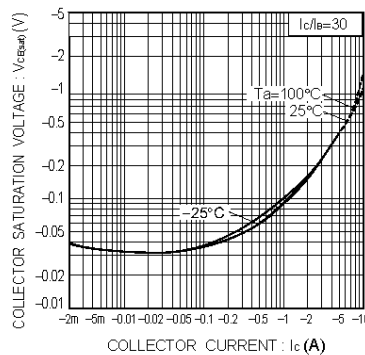


Fig.8 Collector-emitter saturation voltage vs. collector current ( III )

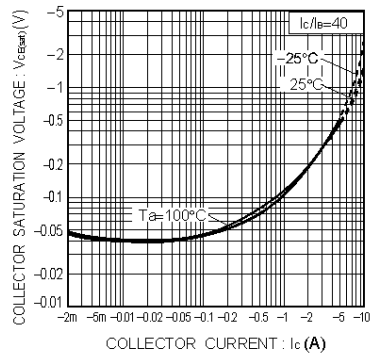
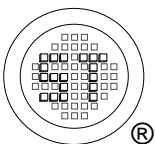


Fig.9 Collector-emitter saturation voltage vs. collector current ( IV )



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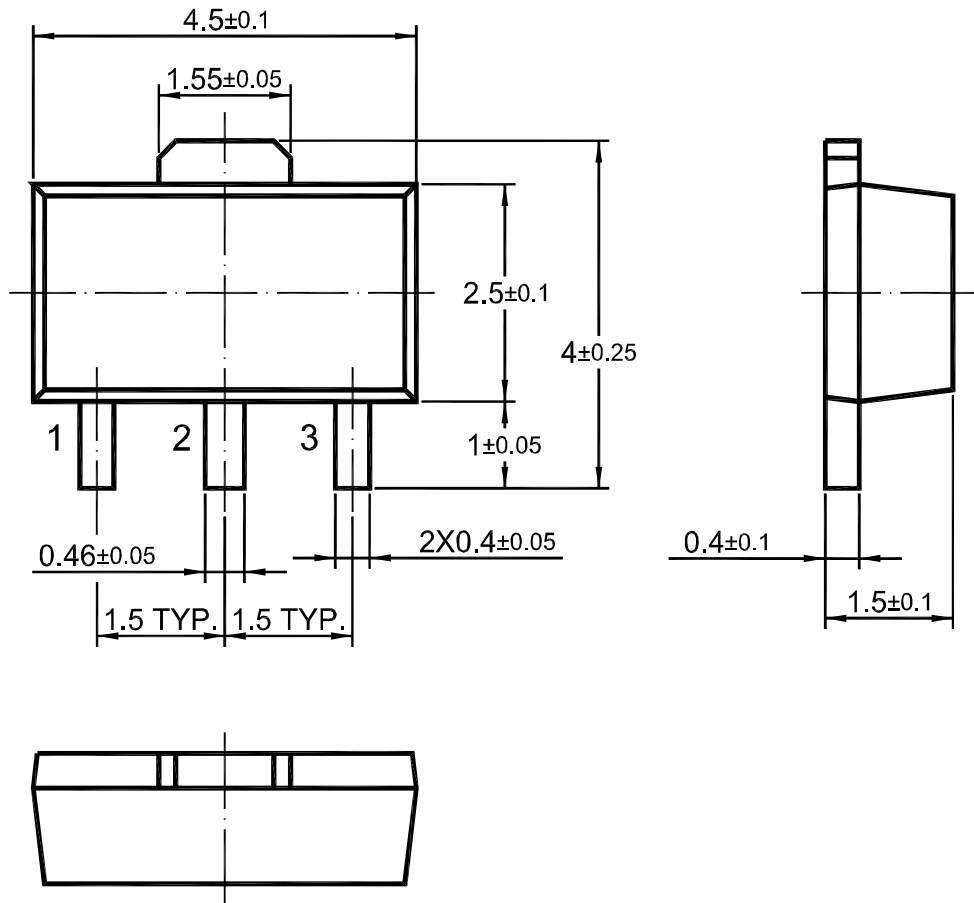
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Certificate No. 7116



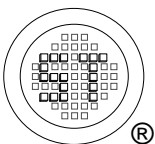
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# 2SB1386U

## SOT-89 PACKAGE OUTLINE



Dimensions in mm



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