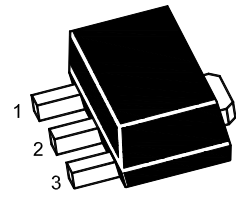


# 2SB1580U

## PNP Silicon Epitaxial Power Transistor

Darlington Transistor

for high gain amplification



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

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

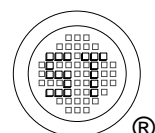
Parameter	Symbol	Value	Unit
Collector Base Voltage	$-V_{\text{CBO}}$	100	V
Collector Emitter Voltage	$-V_{\text{CEO}}$	100	V
Emitter Base Voltage	$-V_{\text{EBO}}$	10	V
Collector Current (DC) Collector Current (Pulse)	$-I_{\text{C}}$	2 3 <sup>1)</sup>	A
Total Power Dissipation	$P_{\text{tot}}$	0.5 1 <sup>2)</sup>	W
Junction Temperature	$T_{\text{j}}$	150	$^\circ\text{C}$
Storage Junction Temperature Range	$T_{\text{stg}}$	- 55 to + 150	$^\circ\text{C}$

<sup>1)</sup> Single pulse:  $P_{\text{W}} = 100$  ms

<sup>2)</sup> When mounted on a  $250 \text{ mm}^2 \times 0.8$  t ceramic substrate.

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

Parameter	Symbol	Min.	Typ.	Max.	Unit
DC Current Gain at $-V_{\text{CE}} = 2 \text{ V}$ , $-I_{\text{C}} = 1 \text{ A}$	$h_{\text{FE}}$	1000	-	10000	-
Collector Base Cutoff Current at $-V_{\text{CB}} = 100 \text{ V}$	$-I_{\text{CBO}}$	-	-	10	$\mu\text{A}$
Emitter Base Cutoff Current at $-V_{\text{EB}} = 7 \text{ V}$	$-I_{\text{EBO}}$	-	-	3	mA
Collector Base Breakdown Voltage at $-I_{\text{C}} = 50 \mu\text{A}$	$-V_{(\text{BR})\text{CBO}}$	100	-	-	V
Collector Emitter Breakdown Voltage at $-I_{\text{C}} = 5 \text{ mA}$	$-V_{(\text{BR})\text{CEO}}$	100	-	-	V
Emitter Base Breakdown Voltage at $-I_{\text{E}} = 5 \text{ mA}$	$-V_{(\text{BR})\text{EBO}}$	10	-	-	V
Collector Emitter Saturation Voltage at $-I_{\text{C}} = 1 \text{ A}$ , $-I_{\text{B}} = 1 \text{ mA}$	$-V_{\text{CE}(\text{sat})}$	-	-	1.5	V
Current Gain Bandwidth Product at $-V_{\text{CE}} = 5 \text{ V}$ , $I_{\text{E}} = 100 \text{ mA}$ , $f = 30 \text{ MHz}$	$f_{\text{T}}$	-	50	-	MHz
Collector Output Capacitance at $-V_{\text{CB}} = 10 \text{ V}$ , $f = 1 \text{ MHz}$	$C_{\text{ob}}$	-	35	-	pF



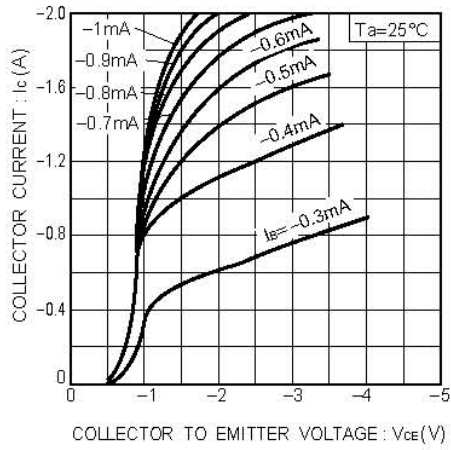


Fig.1 Grounded emitter output characteristics

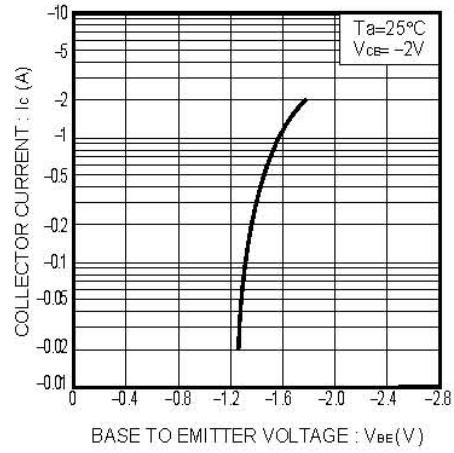


Fig.2 Grounded emitter propagation characteristics

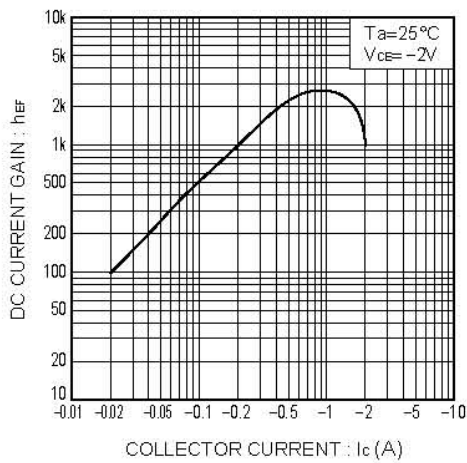


Fig.3 DC current gain vs. collector current

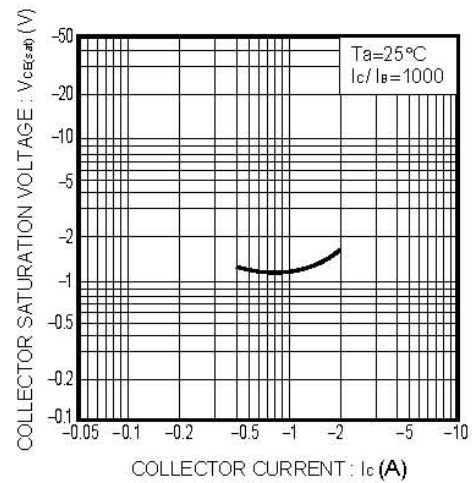
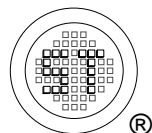
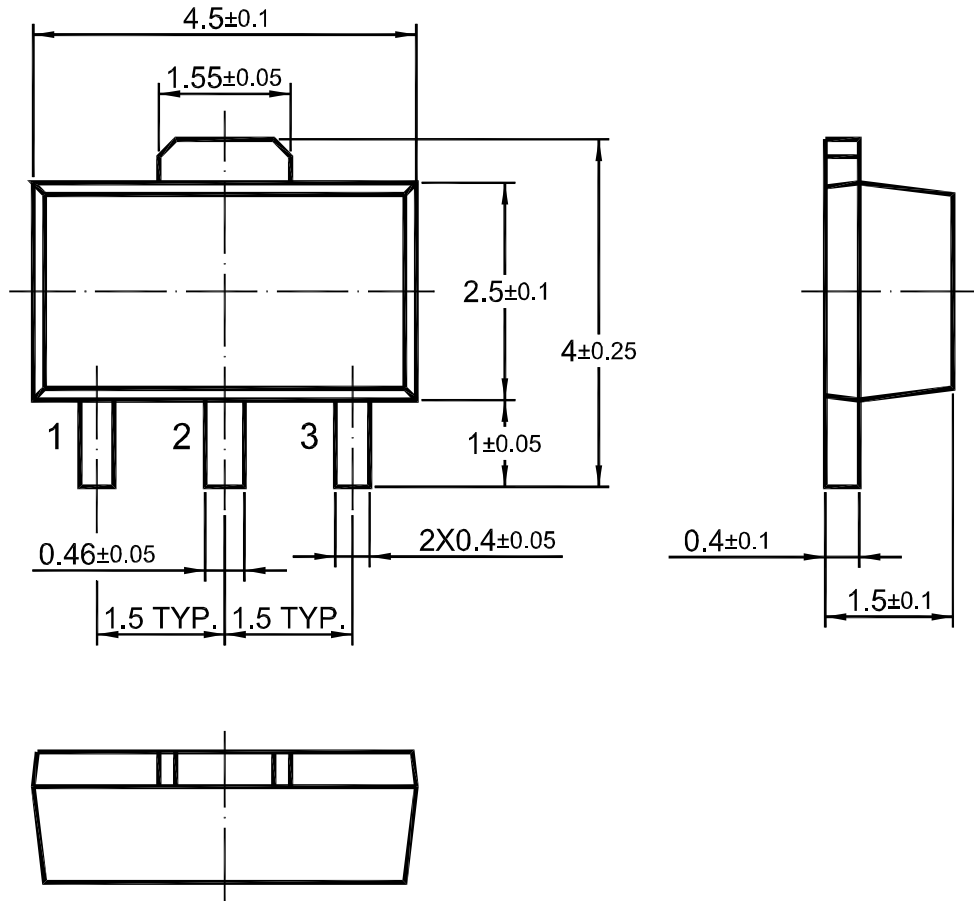


Fig.4 Collector-emitter saturation voltage vs. collector current



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## SOT-89 PACKAGE OUTLINE



Dimensions in mm

