



PRODUCT DATA SHEET



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Datasheet



Resources

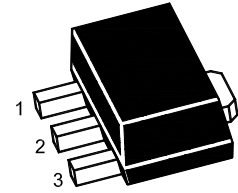


Samples

Please note: Please check the JINGAO Semiconductor website to verify the updated device numbers. The most current and up-to-date ordering information can be found at www.jg-semi.cn. Please email any questions regarding the system integration to JINGAO_questions@jgsemi.com.

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	$-V_{CBO}$	100	V
Collector Emitter Voltage	$-V_{CEO}$	100	V
Emitter Base Voltage	$-V_{EBO}$	10	V
Collector Current (DC) Collector Current (Pulse)	$-I_C$	2 3 ¹⁾	A
Total Power Dissipation	P_{tot}	0.5 1 ²⁾	W
Junction Temperature	T_j	150	$^\circ\text{C}$
Storage Junction Temperature Range	T_{stg}	- 55 to + 150	$^\circ\text{C}$

¹⁾ Single pulse: $P_W = 100$ ms

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

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

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

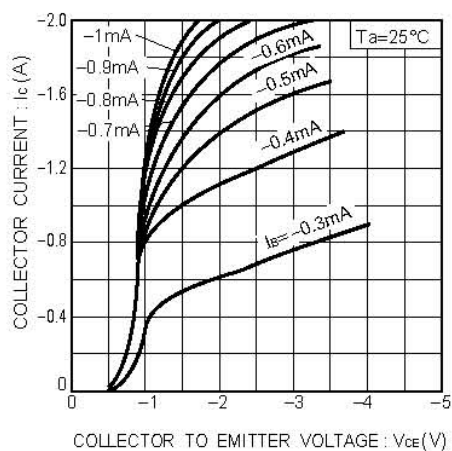


Fig.1 Grounded emitter output characteristics

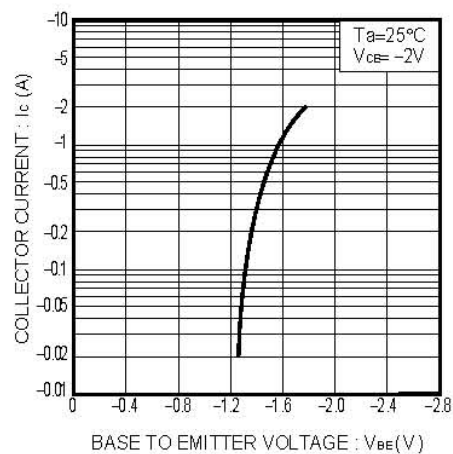


Fig.2 Grounded emitter propagation characteristics

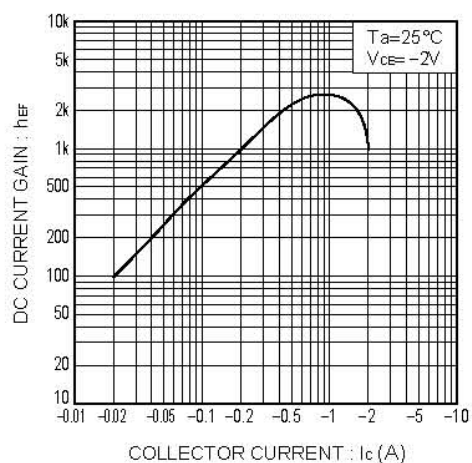


Fig.3 DC current gain vs. collector current

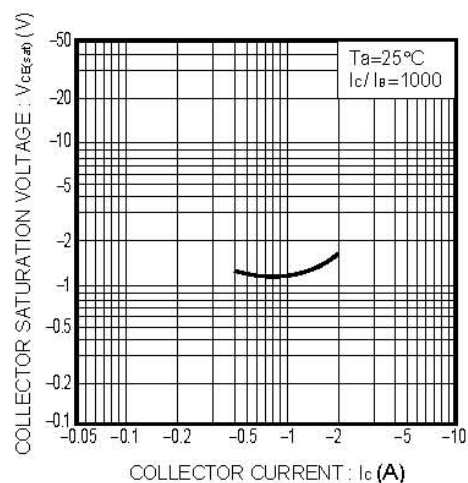
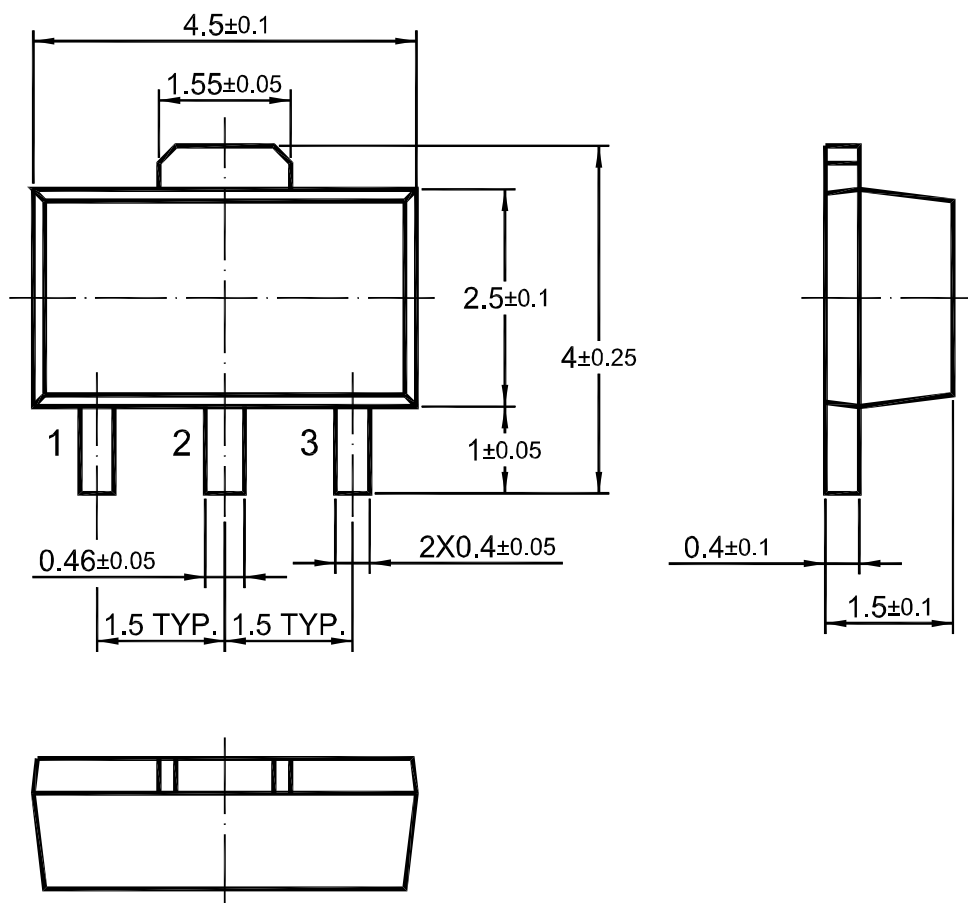


Fig.4 Collector-emitter saturation voltage vs. collector current

SOT-89 PACKAGE OUTLINE



Dimensions in mm

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