



Data Sheet No. 2N2905AL

Type **2N2905AL**

Generic Part Number:
2N2905A

Geometry **0600**

Polarity **PNP**

REF: MIL-PRF-19500/290

Qual Level: **JAN - JANS**

Features:

[Request Quotation](#)

- General-purpose transistor for switching and amplifier applications.
- Housed in a **TO-5** case.
- Also available in chip form using the **0600** chip geometry.
- The Min and Max limits shown are per **MIL-PRF-19500/290** which Semicoa meets in all cases.
- The **Typ** values are actual batch averages for Semicoa.
- **Radiation Graphs** available.



TO-5

Maximum Ratings

$T_C = 25^\circ\text{C}$ unless otherwise specified

Rating	Symbol	Rating	Unit
Collector-Emitter Voltage	V_{CEO}	60	V
Collector-Base Voltage	V_{CBO}	60	V
Emitter-Base Voltage	V_{EBO}	5.0	V
Collector Current, Continuous	I_C	600	mA
Operating Junction Temperature	T_J	-65 to +200	$^\circ\text{C}$
Storage Temperature	T_{STG}	-65 to +200	$^\circ\text{C}$

Electrical Characteristics

 $T_C = 25^\circ\text{C}$ unless otherwise specified

OFF Characteristics	Symbol	Min	Typ	Max	Unit
Collector-Base Breakdown Voltage $I_C = 10\ \mu\text{A}$	$V_{(BR)CBO}$	60	100	---	V
Collector-Emitter Breakdown Voltage $I_C = 10\ \text{mA}$	$V_{(BR)CEO}$	60	70	---	V
Emitter-Base Breakdown Voltage $I_E = 10\ \mu\text{A}$	$V_{(BR)EBO}$	5.0	9.0	---	V
Collector-Emitter Cutoff Current $V_{CE} = 30\ \text{V}$	I_{CES}	---	1.0	50	nA
Collector-Base Cutoff Current $V_{CB} = 50\ \text{V}$	I_{CBO}	---	0.25	10	nA
Emitter-Base Cutoff Current $V_{EB} = 3.5\ \text{V}$	I_{EBO}	---	0.1	50	nA

ON Characteristics	Symbol	Min	Typ	Max	Unit
DC Current Gain					
$I_C = 100\ \mu\text{A}, V_{CE} = 10\ \text{V}$	h_{FE1}	75	225	---	---
$I_C = 1.0\ \text{mA}, V_{CE} = 10\ \text{V}$	h_{FE2}	100	250	450	---
$I_C = 10\ \text{mA}, V_{CE} = 10\ \text{V}$	h_{FE3}	100	---	---	---
$I_C = 150\ \text{mA}, V_{CE} = 10\ \text{V}$ (pulse test)	h_{FE4}	100	180	300	---
$I_C = 500\ \text{mA}, V_{CE} = 10\ \text{V}$ (pulse test)	h_{FE5}	50	80	---	---
Collector-Emitter Saturation Voltage					
$I_C = 150\ \text{mA}, I_B = 15\ \text{mA}$ (pulse test)	$V_{CE(sat)1}$	---	0.18	0.4	V dc
$I_C = 500\ \text{mA}, I_B = 50\ \text{mA}$ (pulse test)	$V_{CE(sat)2}$	---	0.5	1.6	V dc
Base-Emitter Saturation Voltage					
$I_C = 150\ \text{mA}, I_B = 15\ \text{mA}$ (pulse test)	$V_{BE(sat)1}$	---	0.87	1.3	V dc
$I_C = 500\ \text{mA}, I_B = 50\ \text{mA}$ (pulse test)	$V_{BE(sat)2}$	---	1.0	2.6	V dc

Small Signal Characteristics	Symbol	Min	Typ	Max	Unit
Short Circuit Forward Current Transfer Ratio $I_C = 1\ \text{mA}, V_{CE} = 10\ \text{V}, f = 1\ \text{kHz}$	AC h_{FE}	100	250	---	---
Open Circuit Output Capacitance $V_{CB} = 10\ \text{V}, I_E = 0\ \text{V}, 100\ \text{kHz} < f < 1\ \text{MHz}$	C_{OBO}	---	6.0	8.0	pF
Input Capacitance, Output Open Circuited $V_{EB} = 2.0\ \text{V}, I_C = 0, 100\ \text{kHz} < f < 1\ \text{MHz}$	C_{IBO}	---	8.0	30	pF

Switching Characteristics	Symbol	Min	Typ	Max	Unit
Saturated Turn On Switching Time to 90% 16V, 50 ohm input pulse	t_{ON}	---	25	45	ns
Saturated Turn Off Switching Time to 10% 16V, 50 ohm input pulse	t_{OFF}	---	200	300	ns