

Type 2N3700UB

Geometry 4500

Polarity NPN

Qual Level: JAN - JANS

Generic Part Number:

2N3700UB

REF: MIL-PRF-19500/391

Features:

[Request Quotation](#)

- General-purpose low power silicon transistor.
- Housed in a [cersot](#) case.
- Also available in chip form using the [4500](#) chip geometry.
- The Min and Max limits shown are per [MIL-PRF-19500/391](#) which Semicoa meets in all cases.
- [Radiation graphs available.](#)



Maximum Ratings

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

Rating	Symbol	Rating	Unit
Collector-Emitter Voltage	V_{CEO}	80	V
Collector-Base Voltage	V_{CBO}	140	V
Emitter-Base Voltage	V_{EBO}	7.0	V
Collector Current, Continuous	I_C	1.0	A
Operating Junction Temperature	T_J	-55 to +200	$^\circ\text{C}$
Storage Temperature	T_{STG}	-55 to +200	$^\circ\text{C}$

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

OFF Characteristics	Symbol	Min	Max	Unit
Collector-Base Breakdown Voltage $I_C = 100\ \mu\text{A}$	$V_{(BR)CBO}$	140	---	V
Collector-Emitter Breakdown Voltage $I_C = 30\ \text{mA}$	$V_{(BR)CEO}$	80	---	V
Emitter-Base Breakdown Voltage $I_E = 100\ \mu\text{A}$	$V_{(BR)EBO}$	7.0	---	V
Collector-Emitter Cutoff Current $V_{CE} = 90\ \text{V}$	I_{CES}	---	10	nA
Emitter-Base Cutoff Current $V_{EB} = 5\ \text{V}$	I_{EBO}	---	10	nA

ON Characteristics	Symbol	Min	Max	Unit
DC Current Gain				
$I_C = 150\ \text{mA}, V_{CE} = 10\ \text{V}$	h_{FE1}	100	300	---
$I_C = 0.1\ \text{mA}, V_{CE} = 10\ \text{V}$	h_{FE2}	50	200	---
$I_C = 10\ \text{mA}, V_{CE} = 10\ \text{V}$ (pulsed)	h_{FE3}	90	---	---
$I_C = 500\ \text{mA}, V_{CE} = 10\ \text{V}$ (pulsed)	h_{FE4}	50	200	---
$I_C = 1\ \text{A}, V_{CE} = 10\ \text{V}$ (pulsed)	h_{FE5}	15	---	---
Base-Emitter Saturation Voltage				
$I_C = 150\ \text{mA}, I_B = 15\ \text{mA}$ (pulsed)	$V_{BE(sat)}$	---	1.1	V dc
Collector-Emitter Saturation Voltage				
$I_C = 150\ \text{mA}, I_B = 15\ \text{mA}$ (pulsed)	$V_{CE(sat)1}$	---	0.2	V dc
$I_C = 500\ \text{mA}, I_B = 50\ \text{mA}$ (pulsed)	$V_{CE(sat)2}$	---	0.5	V dc

Small Signal Characteristics	Symbol	Min	Max	Unit
Short Circuit Forward Current Transfer Ratio $I_C = 1\ \text{mA}, V_{CE} = 5\ \text{V}, f = 1\ \text{kHz}$	AC h_{FE}	80	400	---
Magnitude of Common Emitter, Small Signal, Short Circuit Forward Current Transfer Ratio $V_{CE} = 10\ \text{V}, I_C = 50\ \text{mA}, f = 200\ \text{MHz}$	$ h_{FE} $	5.0	20	---
Open Circuit Output Capacitance $V_{CB} = 10\ \text{V}, I_E = 0, 100\ \text{kHz} < f < 1\ \text{MHz}$	C_{OBO}	---	12	pF
Input Capacitance, Output Open Circuited $V_{EB} = 2.0\ \text{V}, I_C = 0, 100\ \text{kHz} < f < 1\ \text{MHz}$	C_{IBO}	---	60	pF
Collector-Base Time Constant $V_{CB} = 10\ \text{V}, I_C = 10\ \text{mA}, f = 79.8\ \text{MHz}$	$r_b C_C$	---	400	ps
Noise Figure $V_{CE} = 10\ \text{V}, I_C = 100\ \mu\text{A}, R_g = 1\ \text{k}\Omega$	NF	---	4	dB

Switching Characteristics	Symbol	Min	Max	Unit
Pulse Response 15 ns, 50 ohm input pulse	$t_{ON} + t_{OFF}$	---	30	ns