SEMICONDUCTORS

Type 2N3700UB Geometry 4500 **Polarity NPN Qual Level: JAN - JANS**

Features:

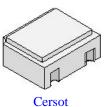
- General-purpose low power silicon transistor.
- Housed in a cersot case.
- Also available in chip form using the 4500 chip geometry.
- The Min and Max limits shown are per MIL-PRF-19500/391 which Semicoa meets in all cases.
- Radiation graphs available.

Data Sheet No. 2N3700UB

Generic Part Number: 2N3700UB

REF: MIL-PRF-19500/391

Request Quotation



Maximum Ratings

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	Ι _C	1.0	A
Operating Junction Temperature	TJ	-55 to +200	°C
Storage Temperature	T _{STG}	-55 to +200	°C



Electrical Characteristics

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

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

ON Characteristics	Symbol	Min	Max	Unit
DC Current Gain				
$I_{\rm C}$ = 150 mA, $V_{\rm CE}$ = 10 V	h _{FE1}	100	300	
$I_{\rm C} = 0.1$ mA, $V_{\rm CE} = 10$ V	h _{FE2}	50	200	
I_{C} = 10 mA, V_{CE} = 10 V (pulsed)	h _{FE3}	90		
$I_{\rm C}$ = 500 mA, $V_{\rm CE}$ = 10 V (pulsed)	h _{FE4}	50	200	
$I_C = 1 \text{ A}, V_{CE} = 10 \text{ V} \text{ (pulsed)}$	h _{FE5}	15		
Base-Emitter Saturation Voltage				
$I_{\rm C}$ = 150 mA, $I_{\rm B}$ = 15 mA (pulsed)	V _{BE(sat)}		1.1	V dc
Collector-Emitter Saturation Voltage				
$I_{\rm C}$ = 150 mA, $I_{\rm B}$ = 15 mA (pulsed)	V _{CE(sat)1}		0.2	V dc
$I_{\rm C}$ = 500 mA, $I_{\rm B}$ = 50 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	
$\begin{array}{l} \textit{Magnitude of Common Emitter, Small Signal, Short Circuit} \\ \textit{Forward Current Transfer Ratio} \\ \textit{V}_{CE} = 10 \text{ V}, \textit{I}_{C} = 50 \text{ mA}, \textit{f} = 200 \text{ MHz} \end{array}$	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 $V_{CE} = 10 \text{ V}, \text{ I}_{C} = 100 \mu\text{A}, \text{ Rg} = 1 \text{ kOhm}$	NF		4	dB

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