



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

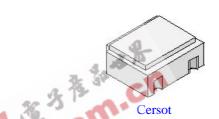
Generic Part Number: 2N3700UB

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

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

Rating	Symbol	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	А
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 $V_{CE} = 90 \text{ V}$	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 V, I _E = 0, 100 kHz < f < 1 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 $V_{CE} = 10 \text{ V}, I_{C} = 100 \mu\text{A}, Rg = 1 \text{ kOhm}$	NF		4	dB

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