

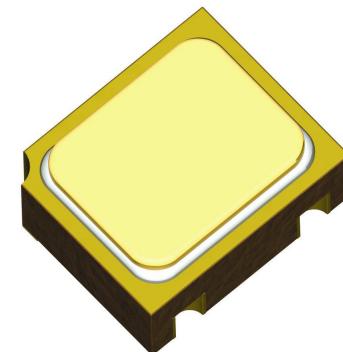
Description

SEMICOA Corporation offers:

- Screening and processing per MIL-PRF-19500 Appendix E
- JAN level (2N3700UBJ)
- JANTX level (2N3700UBJX)
- JANTXV level (2N3700UBJV)
- JANS level (2N3700UBJS)
- JANSR level (2N3700UBJSR)
- QCI to the applicable level
- 100% die visual inspection per MIL-STD-750 method 2072 for JANTXV and JANS
- Radiation testing (total dose) upon request

Applications

- General purpose
- Low power
- NPN silicon transistor

**Features**

- Hermetically sealed Cersot ceramic
- Also available in chip configuration
- Chip geometry 4500
- Reference document: MIL-PRF-19500/391

Benefits

- Qualification Levels: JAN, JANTX, JANTXV, JANS and JANSR
- Radiation testing available

Please contact SEMICOA for special configurations
www.SEMICOA.com or (714) 979-1900

Absolute Maximum Ratings		T_c = 25°C unless otherwise specified	
Parameter	Symbol	Rating	Unit
Collector-Emitter Voltage	V _{CEO}	80	Volts
Collector-Base Voltage	V _{CBO}	140	Volts
Emitter-Base Voltage	V _{EBO}	7	Volts
Collector Current, Continuous	I _C	1	A
Power Dissipation, T _A = 25°C Derate linearly above 37.5°C	P _T	0.5 3.08	W mW/°C
Power Dissipation, T _c = 25°C Derate linearly above 25°C	P _T	1.16 6.63	W mW/°C
Thermal Resistance	R _{θJA}	325	°C/W
Operating Junction Temperature Storage Temperature	T _J T _{STG}	-65 to +200	°C

ELECTRICAL CHARACTERISTICS

characteristics specified at $T_A = 25^\circ\text{C}$

Off Characteristics

Parameter	Symbol	Test Conditions	Min	Typ	Max	Units
Collector-Emitter Breakdown Voltage	$V_{(\text{BR})\text{CEO}}$	$I_C = 30 \text{ mA}$	80			Volts
Collector-Base Cutoff Current	$I_{\text{CBO}1}$	$V_{\text{CB}} = 140 \text{ Volts}$			10	μA
Collector-Emitter Cutoff Current	$I_{\text{CES}1}$	$V_{\text{CE}} = 90 \text{ Volts}$			10	nA
Collector-Emitter Cutoff Current	$I_{\text{CES}2}$	$V_{\text{CE}} = 90 \text{ Volts}, T_A = 150^\circ\text{C}$			10	μA
Emitter-Base Cutoff Current	$I_{\text{EBO}1}$	$V_{\text{EB}} = 7 \text{ Volts}$			10	μA
Emitter-Base Cutoff Current	$I_{\text{EBO}2}$	$V_{\text{EB}} = 5 \text{ Volts}$			10	nA

On Characteristics

Pulse Test: Pulse Width = 300 μs , Duty Cycle $\leq 2.0\%$

Parameter	Symbol	Test Conditions	Min	Typ	Max	Units
DC Current Gain	$h_{\text{FE}1}$	$I_C = 150 \text{ mA}, V_{\text{CE}} = 10 \text{ Volts}$	100		300	
	$h_{\text{FE}2}$	$I_C = 0.1 \text{ mA}, V_{\text{CE}} = 10 \text{ Volts}$	50		200	
	$h_{\text{FE}3}$	$I_C = 10 \text{ mA}, V_{\text{CE}} = 10 \text{ Volts}$	90			
	$h_{\text{FE}4}$	$I_C = 500 \text{ mA}, V_{\text{CE}} = 10 \text{ Volts}$	50		200	
	$h_{\text{FE}5}$	$I_C = 1 \text{ A}, V_{\text{CE}} = 10 \text{ Volts}$	15			
	$h_{\text{FE}6}$	$I_C = 150 \text{ mA}, V_{\text{CE}} = 10 \text{ Volts}$ $T_A = -55^\circ\text{C}$	40			
Base-Emitter Saturation Voltage	V_{BEsat}	$I_C = 150 \text{ mA}, I_B = 15 \text{ mA}$			1.1	Volts
Collector-Emitter Saturation Voltage	$V_{\text{CESat}1}$	$I_C = 150 \text{ mA}, I_B = 15 \text{ mA}$			0.2	Volts
	$V_{\text{CESat}2}$	$I_C = 500 \text{ mA}, I_B = 50 \text{ mA}$			0.5	Volts

Dynamic Characteristics

Parameter	Symbol	Test Conditions	Min	Typ	Max	Units
Magnitude – Common Emitter, Short Circuit Forward Current Transfer Ratio	$ h_{\text{FE}} $	$V_{\text{CE}} = 10 \text{ Volts}, I_C = 50 \text{ mA}, f = 20 \text{ MHz}$	5		20	
Small Signal Short Circuit Forward Current Transfer Ratio	h_{FE}	$V_{\text{CE}} = 5 \text{ Volts}, I_C = 1 \text{ mA}, f = 1 \text{ kHz}$	80		400	
Open Circuit Output Capacitance	C_{OBO}	$V_{\text{CB}} = 10 \text{ Volts}, I_E = 0 \text{ mA}, 100 \text{ kHz} < f < 1 \text{ MHz}$			12	pF
Open Circuit Input Capacitance	C_{IBO}	$V_{\text{EB}} = 0.5 \text{ Volts}, I_C = 0 \text{ mA}, 100 \text{ kHz} < f < 1 \text{ MHz}$			60	pF
Collector Base time constant	$r_b' C_C$	$V_{\text{CB}} = 10 \text{ Volts}, I_E = 10 \text{ mA}, f = 79.8 \text{ MHz}$			400	ps
Noise Figure	NF	$V_{\text{CE}} = 10 \text{ Volts}, I_C = 100 \mu\text{A}, f = 200 \text{ Hz}, R_g = 1 \text{ k}\Omega$			4	dB

Switching Characteristics

Saturated Turn-On Time	$t_{\text{ON}} + t_{\text{OFF}}$				30	ns
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