

Description

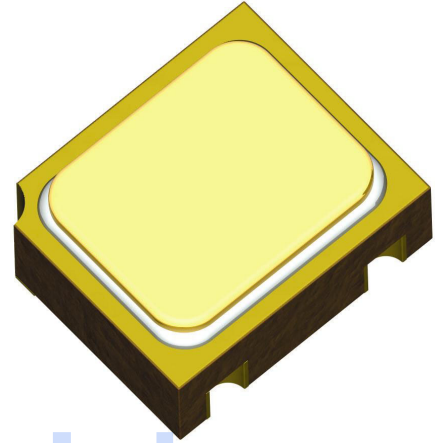
Semicoa Semiconductors offers:

- Screening and processing per MIL-PRF-19500 Appendix E
- JAN level (2N3737UBJ)
- JANTX level (2N3737UBJX)
- JANTXV level (2N3737UBJV)
- JANS level (2N3737UBJS)
- 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

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

Applications

- General purpose
- Low power
- NPN silicon transistor



Features

- Hermetically sealed Cersot ceramic
- Also available in chip configuration
- Chip geometry 0806
- Reference document: MIL-PRF-19500/395

Benefits

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

Absolute Maximum Ratings		$T_C = 25^\circ\text{C}$ unless otherwise specified	
Parameter	Symbol	Rating	Unit
Collector-Emitter Voltage	V_{CEO}	40	Volts
Collector-Base Voltage	V_{CBO}	75	Volts
Emitter-Base Voltage	V_{EBO}	5	Volts
Collector Current, Continuous	I_C	1.5	A
Power Dissipation, $T_A = 25^\circ\text{C}$ Derate linearly above 37.5°C	P_T	0.5 3.07	W mW/ $^\circ\text{C}$
Thermal Resistance	$R_{\theta JA}$	325	$^\circ\text{C}/\text{W}$
Operating Junction Temperature	T_J	-65 to +200	$^\circ\text{C}$
Storage Temperature	T_{STG}		

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	$V_{(BR)CEO}$	$I_C = 10\text{ mA}$	40			Volts
Collector-Base Cutoff Current	I_{CBO1}	$V_{CB} = 75\text{ Volts}$		10		μA
	I_{CBO2}	$V_{CB} = 30\text{ Volts}$		250		nA
Collector-Emitter Cutoff Current	I_{CEX1}	$V_{CE} = 30\text{ Volts}, V_{EB} = 2\text{ Volts}$			200	nA
	I_{CEX2}	$V_{CE} = 30\text{ Volts}, V_{EB} = 2\text{ Volts}, T_A = 150^\circ\text{C}$			250	μA
Emitter-Base Cutoff Current	I_{EBO1}	$V_{EB} = 5\text{ Volts}$			10	μA
	I_{EBO2}	$V_{EB} = 4\text{ Volts}$			100	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_{FE1}	$I_C = 10\text{ mA}, V_{CE} = 1\text{ Volts}$	35			
	h_{FE2}	$I_C = 150\text{ mA}, V_{CE} = 1\text{ Volts}$	40			
	h_{FE3}	$I_C = 500\text{ mA}, V_{CE} = 1\text{ Volts}$	40		140	
	h_{FE4}	$I_C = 1\text{ A}, V_{CE} = 1.5\text{ Volts}$	20		80	
	h_{FE5}	$I_C = 1.5\text{ A}, V_{CE} = 5\text{ Volts}$	20			
	h_{FE6}	$I_C = 500\text{ mA}, V_{CE} = 1\text{ Volts}, T_A = -55^\circ\text{C}$	15			
Base-Emitter Saturation Voltage	V_{BEsat1}	$I_C = 10\text{ mA}, I_B = 1\text{ mA}$			0.8	Volts
	V_{BEsat2}	$I_C = 150\text{ mA}, I_B = 15\text{ mA}$			1.0	
	V_{BEsat3}	$I_C = 500\text{ mA}, I_B = 50\text{ mA}$			1.2	
	V_{BEsat4}	$I_C = 1\text{ A}, I_B = 100\text{ mA}$	0.9		1.4	
Collector-Emitter Saturation Voltage	V_{CEsat1}	$I_C = 10\text{ mA}, I_B = 1\text{ mA}$			0.2	Volts
	V_{CEsat2}	$I_C = 150\text{ mA}, I_B = 15\text{ mA}$			0.3	
	V_{CEsat3}	$I_C = 500\text{ mA}, I_B = 50\text{ mA}$			0.5	
	V_{CEsat4}	$I_C = 1\text{ A}, I_B = 100\text{ mA}$			0.9	

Dynamic Characteristics

Parameter	Symbol	Test Conditions	Min	Typ	Max	Units
Magnitude – Common Emitter, Short Circuit Forward Current Transfer Ratio	$ h_{FE} $	$V_{CE} = 10\text{ Volts}, I_C = 50\text{ mA}, f = 100\text{ MHz}$	2.5		6.0	
Open Circuit Output Capacitance	C_{OBO}	$V_{CB} = 10\text{ Volts}, I_E = 0\text{ mA}, 100\text{ kHz} < f < 1\text{ MHz}$			9	pF
Open Circuit Input Capacitance	C_{IBO}	$V_{EB} = 0.5\text{ Volts}, I_C = 0\text{ mA}, 100\text{ kHz} < f < 1\text{ MHz}$			80	pF

Switching Characteristics

Delay Time	t_d	$V_{BE} = 2\text{ Volts}, I_C = 1\text{ A}, I_B = 100\text{ mA}$			8	ns
Rise Time	t_r	$I_B = 100\text{ mA}$			40	ns
Saturated Turn-Off Time	t_{OFF}	$I_C = 1\text{ A}, I_{B1} = I_{B2} = 100\text{ mA}$			60	ns