

Description

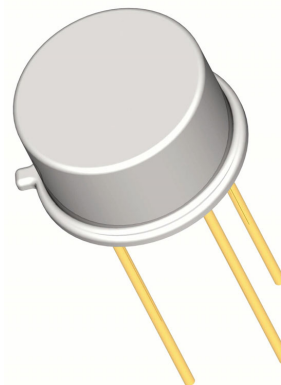
SEMICOA Corporation offers:

- Screening and processing per MIL-PRF-19500 Appendix E
- JAN level (2N4150J)
- JANTX level (2N4150JX)
- JANTXV level (2N4150JV)
- QCI to the applicable level
- 100% die visual inspection per MIL-STD-750 method 2072 for JANTXV
- Radiation testing (total dose) upon request

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

Applications

- General purpose
- Low power, High voltage
- NPN silicon transistor



Features

- Hermetically sealed TO-5 metal can
- Also available in chip configuration
- Chip geometry 3101
- Reference document:
MIL-PRF-19500/394

Benefits

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

Absolute Maximum Ratings		T _C = 25°C unless otherwise specified	
Parameter	Symbol	Rating	Unit
Collector-Emitter Voltage	V _{CEO}	70	Volts
Collector-Base Voltage	V _{CBO}	100	Volts
Emitter-Base Voltage	V _{EBO}	10	Volts
Collector Current, Continuous	I _C	10	A
Power Dissipation, T _A = 25°C Derate linearly above 25°C	P _T	1 5.7	W mW/°C
Power Dissipation, T _C = 25°C Derate linearly above 100°C	P _T	5 50	W mW/°C
Thermal Resistance	R _{θJA} R _{θJC}	.175 .020	°C/W
Operating Junction Temperature	T _J	-65 to +200	°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	$V_{(BR)CEO}$	$I_C = 100\text{ mA}$	70			Volts
Collector-Base Cutoff Current	I_{CBO1} I_{CBO2}	$V_{CB} = 100\text{ Volts}$ $V_{CB} = 80\text{ Volts},$			10 100	μA nA
Collector-Emitter Cutoff Current	I_{CEO}	$V_{CE} = 60\text{ Volts}$			10	μA
Collector-Emitter Cutoff Current	I_{CEX1} I_{CEX2}	$V_{CE} = 60\text{ Volts}, V_{EB} = .5\text{ Volts}$ $V_{CE} = 60\text{ Volts}, V_{EB} = .5\text{ Volts},$ $T_A = 150^\circ\text{C}$			10 100	μA
Emitter-Base Cutoff Current	I_{EBO1} I_{EBO2}	$V_{EB} = 7\text{ Volts}$ $V_{EB} = 5\text{ Volts}$			10 100	μA 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} h_{FE2} h_{FE3} h_{FE4}	$I_C = 1\text{ A}, V_{CE} = 5\text{ Volts}$ $I_C = 5\text{ A}, V_{CE} = 5\text{ Volts}$ $I_C = 10\text{ A}, V_{CE} = 5\text{ Volts}$ $I_C = 5\text{ A}, V_{CE} = 5\text{ Volts}$ $T_A = -55^\circ\text{C}$	50 40 10 20		200 120	
Base-Emitter Saturation Voltage	V_{BEsat1} V_{BEsat2}	$I_C = 5\text{ A}, I_B = 500\text{ mA}$ $I_C = 10\text{ A}, I_B = 1\text{ A}$			1.5 2.5	Volts
Collector-Emitter Saturation Voltage	V_{CEsat1} V_{CEsat2}	$I_C = 5\text{ A}, I_B = 500\text{ mA}$ $I_C = 10\text{ A}, I_B = 1\text{ A}$			0.6 2.5	Volts

Dynamic Characteristics

Parameter	Symbol	Test Conditions	Min	Typ	Max	Units
Magnitude – Common Emitter, Short Circuit Forward Current Transfer Ratio	$ h_{FE} $	$V_{CE} = 10\text{ Volts}, I_C = 200\text{ mA},$ $f = 10\text{ MHz}$	1.5		7.5	
Small Signal Short Circuit Forward Current Transfer Ratio	h_{FE}	$V_{CE} = 5\text{ Volts}, I_C = 50\text{ mA},$ $f = 1\text{ kHz}$	40		160	
Open Circuit Output Capacitance	C_{OBO}	$V_{CB} = 10\text{ Volts}, I_E = 0\text{ mA},$ $100\text{ kHz} < f < 1\text{ MHz}$			350	pF

Switching Characteristics

Delay Time	t_d	$I_C = 5\text{ A}, I_B = 500\text{ mA},$			50	ns
Rise Time	t_r				500	
Storage Time	t_s	$I_C = 5\text{ A}, I_{B1} = -I_{B2} = 500\text{ mA}$			1.5	μs
Fall Time	t_f				500	ns