

Description

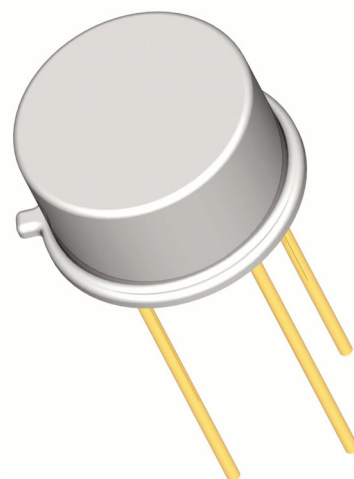
Semicoa Semiconductors offers:

- Screening and processing per MIL-PRF-19500 Appendix E
- JAN level (2N5663J)
- JANTX level (2N5663JX)
- JANTXV level (2N5663JV)
- 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
- Power Transistor
- NPN silicon transistor



Features

- Hermetically sealed TO-5 metal can
- Also available in chip configuration
- Chip geometry 1031
- Reference document: MIL-PRF-19500/454

Benefits

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

Absolute Maximum Ratings		$T_C = 25^\circ\text{C}$ unless otherwise specified	
Parameter	Symbol	Rating	Unit
Collector-Emitter Voltage	V_{CEO}	300	Volts
Collector-Base Voltage	V_{CBO}	400	Volts
Emitter-Base Voltage	V_{EBO}	6	Volts
Collector Current, Continuous	I_C	2	A
Power Dissipation, $T_A = 25^\circ\text{C}$ Derate linearly above 25°C	P_T	1 5.7	W mW/ $^\circ\text{C}$
Power Dissipation, $T_C = 25^\circ\text{C}$ Derate linearly above 100°C	P_T	15 150	W mW/ $^\circ\text{C}$
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	$V_{(BR)CEO}$	$I_C = 10\text{ mA}$	300			Volts
Collector-Emitter Breakdown Voltage	$V_{(BR)CER}$	$I_C = 10\text{ mA}$, $R_{BE} = 100\ \Omega$	400			Volts
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E = 10\ \mu\text{A}$	6			Volts
Collector-Base Cutoff Current	I_{CBO1}	$V_{CB} = 300\text{ Volts}$			0.1	μA
	I_{CBO2}	$V_{CB} = 400\text{ Volts}$			1.0	mA
Collector-Emitter Cutoff Current	I_{CES1}	$V_{CE} = 300\text{ Volts}$			0.2	μA
	I_{CES2}	$V_{CE} = 300\text{ Volts}$, $T_A = 150^\circ\text{C}$			100	

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}	$I_C = 50\text{ mA}$, $V_{CE} = 2\text{ Volts}$	25			
	h_{FE2}	$I_C = 500\text{ mA}$, $V_{CE} = 5\text{ Volts}$	25		75	
	h_{FE3}	$I_C = 1\text{ A}$, $V_{CE} = 5\text{ Volts}$	15			
	h_{FE4}	$I_C = 2\text{ A}$, $V_{CE} = 5\text{ Volts}$	5			
	h_{FE5}	$I_C = 500\text{ mA}$, $V_{CE} = 5\text{ Volts}$ $T_A = -55^\circ\text{C}$	10			
Base-Emitter Saturation Voltage	V_{BEsat1}	$I_C = 1\text{ A}$, $I_B = 100\text{ mA}$			1.2	Volts
	V_{BEsat2}	$I_C = 2\text{ A}$, $I_B = 400\text{ mA}$			1.5	
Collector-Emitter Saturation Voltage	V_{CEsat1}	$I_C = 1\text{ A}$, $I_B = 100\text{ mA}$			0.4	Volts
	V_{CEsat2}	$I_C = 2\text{ A}$, $I_B = 400\text{ mA}$			0.8	

Dynamic Characteristics

Parameter	Symbol	Test Conditions	Min	Typ	Max	Units
Magnitude – Common Emitter, Short Circuit Forward Current Transfer Ratio	$ h_{FE} $	$V_{CE} = 5\text{ Volts}$, $I_C = 100\text{ mA}$, $f = 10\text{ MHz}$	2		7	
Open Circuit Output Capacitance	C_{OBO}	$V_{CB} = 10\text{ Volts}$, $I_E = 0\text{ mA}$, $100\text{ kHz} < f < 1\text{ MHz}$			45	pF

Switching Characteristics

Parameter	Symbol	Test Conditions	Min	Typ	Max	Units
Saturated Turn-On Time	t_{ON}	$I_C = 500\text{ mA}$, $V_{CC} = 100\text{ Volts}$			250	ns
Saturated Turn-Off Time	t_{OFF}	$I_C = 500\text{ mA}$, $V_{CC} = 100\text{ Volts}$			1200	ns