2N5663

Silicon NPN Transistor

Data Sheet

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
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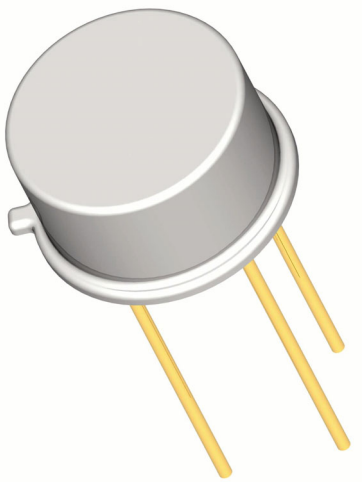
Applications

- 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°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°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	15 150	W mW/°C
Operating Junction Temperature Storage Temperature	T_J T_{STG}	-65 to +200	°C

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ELECTRICAL CHARACTERISTICS

characteristics specified at T_A = 25°C

Off Characteristics

Parameter	Symbol	Test Conditions	Min	Typ	Max	Units
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	I_C = 10 mA	300			Volts
Collector-Emitter Breakdown Voltage	$V_{(BR)CER}$	I_C = 10 mA, R_{BE} = 100 Ω	400			Volts
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	I_E = 10 µA	6			Volts
Collector-Base Cutoff Current	I_{CBO1} I_{CBO2}	V_{CB} = 300 Volts V_{CB} = 400 Volts			0.1 1.0	µA mA
Collector-Emitter Cutoff Current	I_{CES1} I_{CES2}	V_{CE} = 300 Volts V_{CE} = 300 Volts, T_A = 150°C			0.2 100	µA

On Characteristics

Pulse Test: Pulse Width = 300 µs, Duty Cycle ≤ 2.0%

Parameter	Symbol	Test Conditions	Min	Typ	Max	Units
DC Current Gain	h_{FE1} h_{FE2} h_{FE3} h_{FE4} h_{FE5}	I_C = 50 mA, V_{CE} = 2 Volts I_C = 500 mA, V_{CE} = 5 Volts I_C = 1 A, V_{CE} = 5 Volts I_C = 2 A, V_{CE} = 5 Volts I_C = 500 mA, V_{CE} = 5 Volts T_A = -55°C	25 25 15 5 10		75	
Base-Emitter Saturation Voltage	V_{BEsat1} V_{BEsat2}	I_C = 1 A, I_B = 100 mA I_C = 2 A, I_B = 400 mA			1.2 1.5	Volts
Collector-Emitter Saturation Voltage	V_{CEsat1} V_{CEsat2}	I_C = 1 A, I_B = 100 mA I_C = 2 A, I_B = 400 mA			0.4 0.8	Volts

Dynamic Characteristics

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

Switching Characteristics

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

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