SEMICOA SEMICONDUCTORS

2N5339

Silicon NPN Transistor

Data Sheet

Description

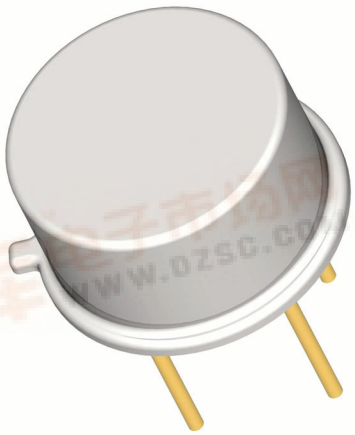
Semicoa Semiconductors offers:

- Screening and processing per MIL-PRF-19500 Appendix E
- JAN level (2N5339J)
- JANTX level (2N5339JX)
- JANTXV level (2N5339JV)
- 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 switching transistor
- Low power
- NPN silicon transistor



Features

- Hermetically sealed TO-39 metal can
- Also available in chip configuration
- Chip geometry 9201
- Reference document: MIL-PRF-19500/560

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}	100	Volts
Collector-Base Voltage	V_{CBO}	100	Volts
Emitter-Base Voltage	V_{EBO}	6	Volts
Collector Current, Continuous	I_C	5	A
Power Dissipation, T_A = 25°C Derate linearly above 25°C	P_T	1 5.71	W mW/°C
Thermal Resistance	$R_{\theta JC}$	17.5	°C/W
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 = 50 mA	100			Volts
Collector-Base Cutoff Current	I_{CBO}	V_{CB} = 100 Volts			10	µA
Collector-Emitter Cutoff Current	I_{CEO}	V_{CE} = 100 Volts			100	µA
Collector-Emitter Cutoff Current	I_{CEX1} I_{CEX2}	V_{CE} = 90Volts, V_{BE} = 1.5Volts V_{CE} =90Volts, V_{BE} = 1.5Volts, T_A = 150°C			10 10	µA mA
Emitter-Base Cutoff Current	I_{EBO}	V_{EB} = 6 Volts			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}	I_C = 0.5 A, V_{CE} = 2 Volts I_C = 2 A, V_{CE} = 2 Volts I_C = 5 A, V_{CE} = 2 Volts I_C = 2 A, V_{CE} = 2 Volts T_A = -55°C	60 60 40 12		240	
Base-Emitter Saturation Voltage	V_{BEsat1} V_{BEsat2}	I_C = 2 A, I_B = 200 mA I_C = 5 A, I_B = 500 mA			1.2 1.8	Volts
Collector-Emitter Saturation Voltage	V_{CEsat1} V_{CEsat2}	I_C = 2 A, I_B = 200 mA I_C = 5 A, I_B = 500 mA			0.7 1.2	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 Volts, I_C = 500 mA, f = 10 MHz	3		15	
Open Circuit Output Capacitance	C_{OBO}	V_{CB} = 10 Volts, I_E = 0 mA, 100 kHZ < f < 1 MHz			250	pF
Open Circuit Input Capacitance	C_{IBO}	V_{EB} = 2 Volts, I_C = 0 mA, 100 kHZ < f < 1 MHz			1,000	pF

Switching Characteristics

Delay Time Rise Time	t_d t_r	I_C = 2 A, I_{B1} = 200 mA			100 100	ns
Storage Time Fall Time	t_s t_f	I_C = 2 mA, I_{B1}=I_{B2} = 200 mA			2 200	µs ns

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