SEMICOA SEMICONDUCTORS

Data Sheet No. 2N6989

Type 2N6989
Geometry 0400
Polarity NPN
Qual Level: JAN - JANS

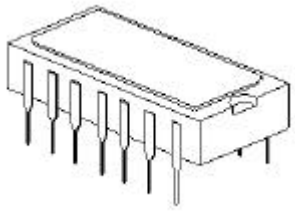
Generic Part Number: 2N6989

REF: MIL-PRF-19500/559

Features:

Request Quotation

- An array of four independent NPN silicon switching transistors.
- Housed in a cerdip case.
- Also available in chip form using the 0400 chip geometry.
- The Min and Max limits shown are per MIL-PRF-19500/559 which Semicoa meets in all cases.
- The **Typ** values are actual batch averages for Semicoa.
- Radiation Graphs available.



Cerdip

Maximum Ratings

T_C = 25°C unless otherwise specified

Rating	Symbol	Rating	Unit
Collector-Emitter Voltage	V_{CEO}	50	V
Collector-Base Voltage	V_{CBO}	75	V
Emitter-Base Voltage	V_{EBO}	6.0	V
Collector Current, Continuous	I_C	800	mA
Operating Junction Temperature	T_J	-65 to +200	°C
Storage Temperature	T_{STG}	-65 to +200	°C

Electrical Characteristics

T_C = 25°C unless otherwise specified

OFF Characteristics	Symbol	Min	Typ	Max	Unit
Collector-Base Breakdown Voltage I_C = 10 µA	$V_{(BR)CBO}$	75	120	---	V
Collector-Emitter Breakdown Voltage I_C = 10 mA, pulsed	$V_{(BR)CEO}$	50	65	---	V
Emitter-Base Breakdown Voltage I_E = 10 µA	$V_{(BR)EBO}$	6.0	7.0	---	V
Collector-Emitter Cutoff Current V_{CE} = 50 V	I_{CES}	---	3.0	50	nA
Collector-Base Cutoff Current V_{CB} = 60 V	I_{CBO1}	---	2.0	10	nA
Emitter-Base Cutoff Current V_{EB} = 4 V	I_{EBO}	---	0.5	10	nA

ON Characteristics	Symbol	Min	Typ	Max	Unit
DC Current Gain					
I_C = 100 µA, V_{CE} = 10 V	h_{FE1}	50	180	---	---
I_C = 1.0 mA, V_{CE} = 10 V	h_{FE2}	75	200	325	---
I_C = 10 mA, V_{CE} = 10 V	h_{FE3}	100	200	---	---
I_C = 150 mA, V_{CE} = 10 V (pulse test)	h_{FE4}	100	200	300	---
I_C = 500 mA, V_{CE} = 10 V (pulse test)	h_{FE5}	30	75	---	---
Collector-Emitter Saturation Voltage					
I_C = 150 mA, I_B = 15 mA (pulse test)	$V_{CE(sat)1}$	---	0.1	0.3	V dc
I_C = 500 mA, I_B = 50 mA (pulse test)	$V_{CE(sat)2}$	---	0.3	1.0	V dc
Base-Emitter Saturation Voltage					
I_C = 150 mA, I_B = 15 mA (pulse test)	$V_{BE(sat)1}$	0.6	0.85	1.2	V dc
I_C = 500 mA, I_B = 50 mA (pulse test)	$V_{BE(sat)2}$	---	1.0	2.0	V dc

Small Signal Characteristics	Symbol	Min	Typ	Max	Unit
Short Circuit Forward Current Transfer Ratio I_C = 1 mA, V_{CE} = 10 V, f = 1kHz	AC h_{FE}	50	240	---	---
Open Circuit Output Capacitance V_{CB} = 10 V, I_E = 0 V, 100 kHz < f < 1 MHz	C_{OBO}	---	4.5	8	pF
Input Capacitance, Output Open Circuited V_{EB} = 0.5 V, I_C = 0, 100 kHz < f < 1 MHz	C_{IBO}	---	17.5	25	pF

Switching Characteristics	Symbol	Min	Typ	Max	Unit
Saturated Turn On Switching Time to 90% 16V, 50 ohm input pulse	t_{ON}	---	14	35	ns
Saturated Turn Off Switching Time to 10% 16V, 50 ohm input pulse	t_{OFF}	---	175	300	ns