SEMICOA SEMICONDUCTORS

Data Sheet No. 2N6193

Type 2N6193
Geometry 9700
Polarity PNP
Qual Level: JAN - JANTXV

Generic Part Number: 2N6193

REF: MIL-PRF-19500/561

Features:

Request Quotation

- Silicon transistor for use in switching applications.
- Housed in a TO-39 case.
- Also available in chip form using the 9700 chip geometry.
- The Min and Max limits shown are per MIL-PRF-19500/561 which Semicoa meets in all cases.

TO-39

Maximum Ratings

T_C = 25°C unless otherwise specified

Rating	Symbol	Rating	Unit
Collector-Emitter Voltage	V_{CEO}	100	V
Collector-Base Voltage	V_{CBO}	100	V
Emitter-Base Voltage	V_{EBO}	6.0	V
Collector Current, Continuous	I_C	5.0	A
Base Current, Continuous	I_B	1.0	A
Power Disipation T_A = 25°C ambient Derate above 25°C	P_T	1.0 5.71	W mW/°C
Power Disipation T_A = 25°C ambient Derate above 25°C	P_T	10.0 57.1	Watt mW/°C
Operating Junction Temperature	T_J	-55 to +200	°C
Storage Temperature	T_{STG}	-55 to +200	°C

Electrical Characteristics

T_C = 25°C unless otherwise specified

OFF Characteristics	Symbol	Min	Max	Unit
Collector-Emitter Breakdown Voltage I_C = 50 mA, pulsed	$V_{(BR)CEO}$	100	---	V
Collector-Base Cutoff Current V_{CB} = 100 V	I_{CBO}	---	10	µA
Base-Emitter Cutoff Current V_{EB} = 6 V V_{EB} = 5.5 V, I_C = 0	 I_{EBO} I_{EBO2}	 --- ---	 100 1.0	 µA mA
Collector-Emitter Cutoff Current V_{CE} = 100 V V_{CE} = 90 V, V_{BE} = 1.5 V V_{CE} = 90 V, V_{BE} = 1.5 V, T_A = +150oC	 I_{CEO} I_{CEX1} I_{CEX2}	 --- --- ---	 100 10 1.0	 µA µA mA

ON Characteristics	Symbol	Min	Max	Unit
Forward Current Transfer Ratio				
I_C = 0.5 A, V_{CE} = 2.0 V, pulsed	h_{FE1}	60	---	---
I_C = 2.0 A, V_{CE} = 2.0 V, pulsed	h_{FE2}	60	240	---
I_C = 5.0 A, V_{CE} = 2.0 V, pulsed	h_{FE3}	40	---	---
I_C = 2.0 A, V_{CE} = 2.0 V pulsed, T_C = -55°C	h_{FE4}	12	---	---
Base-Emitter Saturation Voltage				
I_C = 2.0 A, I_B = 0.2 A, pulsed	$V_{BE(sat)1}$	---	1.2	V dc
I_C = 5.0 A, I_B = 0.5 A, pulsed	$V_{BE(sat)2}$	---	1.8	V dc
Collector-Emitter Saturation Voltage				
I_C = 2.0 A, I_B = 0.2 A, pulsed	$V_{CE(sat)1}$	---	0.7	V dc
I_C = 5.0 A, I_B = 0.5 A, pulsed	$V_{CE(sat)2}$	---	1.2	V dc

Small Signal Characteristics	Symbol	Min	Max	Unit
Magnitude of Common Emitter Small Signal Short Circuit Forward Current Transfer Ratio V_{CE} = 5 V, I_C = 0.5 A, f = 10 MHz	$\|h_{fe}\|$	3.0	15	---
Input Capacitance, Output Open Circuited V_{CB} = 10 V, I_E = 0, 100 kHz < f < 1 MHz	C_{IBO}	---	1250	pF
Open Circuit Output Capacitance V_{CB} = 10 V, I_E = 0, 100 kHz < f < 1 MHz	C_{OBO}	---	300	pF

Switching Time	Symbol	Min	Max	Unit
Delay Time Per figure 5, MIL-PRF-19500/561B	t_d	---	100	ns
Rise Time Per figure 5, MIL-PRF-19500/561B	t_r	---	100	ns
Storage Time Per figure 5, MIL-PRF-19500/561B	t_s	---	2	ns
Fall Time Per figure 5, MIL-PRF-19500/561B	t_f	---	200	ns