

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.



Maximum Ratings

$T_C = 25^{\circ}\text{C}$ 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 $T_A = 25^{\circ}\text{C}$ ambient Derate above 25°C	P_T	1.0 5.71	W $\text{mW}^{\circ}\text{C}$
Power Disipation $T_A = 25^{\circ}\text{C}$ ambient Derate above 25°C	P_T	10.0 57.1	Watt $\text{mW}^{\circ}\text{C}$
Operating Junction Temperature	T_J	-55 to +200	$^{\circ}\text{C}$
Storage Temperature	T_{STG}	-55 to +200	$^{\circ}\text{C}$

Electrical Characteristics

 $T_C = 25^{\circ}\text{C}$ unless otherwise specified

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

ON Characteristics	Symbol	Min	Max	Unit
Forward Current Transfer Ratio $I_C = 0.5\text{ A}$, $V_{CE} = 2.0\text{ V}$, pulsed	h_{FE1}	60	---	---
$I_C = 2.0\text{ A}$, $V_{CE} = 2.0\text{ V}$, pulsed	h_{FE2}	60	240	---
$I_C = 5.0\text{ A}$, $V_{CE} = 2.0\text{ V}$, pulsed	h_{FE3}	40	---	---
$I_C = 2.0\text{ A}$, $V_{CE} = 2.0\text{ V}$ pulsed, $T_C = -55^{\circ}\text{C}$	h_{FE4}	12	---	---
Base-Emitter Saturation Voltage $I_C = 2.0\text{ A}$, $I_B = 0.2\text{ A}$, pulsed	$V_{BE(sat)1}$	---	1.2	V dc
$I_C = 5.0\text{ A}$, $I_B = 0.5\text{ A}$, pulsed	$V_{BE(sat)2}$	---	1.8	V dc
Collector-Emitter Saturation Voltage $I_C = 2.0\text{ A}$, $I_B = 0.2\text{ A}$, pulsed	$V_{CE(sat)1}$	---	0.7	V dc
$I_C = 5.0\text{ A}$, $I_B = 0.5\text{ A}$, 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 $V_{CE} = 5\text{ V}$, $I_C = 0.5\text{ A}$, $f = 10\text{ MHz}$	$ h_{fe} $	3.0	15	---
Input Capacitance, Output Open Circuited $V_{CB} = 10\text{ V}$, $I_E = 0$, $100\text{ kHz} < f < 1\text{ MHz}$	C_{IBO}	---	1250	pF
Open Circuit Output Capacitance $V_{CB} = 10\text{ V}$, $I_E = 0$, $100\text{ kHz} < f < 1\text{ MHz}$	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