

**Type 2N3866A**

**Geometry 1007**

**Polarity NPN**

**Qual Level: JAN - JANS**

**Generic Part Number:**

**2N3866A**

**REF: MIL-PRF-19500/398**

**Features:**

[Request Quotation](#)

- General-purpose silicon transistor for switching and amplifier applications.
- Housed in TO-39 case.
- Also available in chip form using the 1007 chip geometry.
- The Min and Max limits shown are per MIL-PRF-19500/398 which Semicoa meets in all cases.



**Maximum Ratings**

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

Rating	Symbol	Rating	Unit
Collector-Emitter Voltage	$V_{CEO}$	30	V
Collector-Base Voltage	$V_{CBO}$	60	V
Emitter-Base Voltage	$V_{EBO}$	3.5	V
Collector Current, Continuous	$I_C$	0.4	A
Operating Junction Temperature	$T_J$	-55 to +175	$^\circ\text{C}$
Storage Temperature	$T_{STG}$	-55 to +175	$^\circ\text{C}$

### Electrical Characteristics

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

OFF Characteristics	Symbol	Min	Max	Unit
Collector-Base Breakdown Voltage $I_C = 100\ \mu\text{A}$ , pulsed	$V_{(BR)CBO}$	60	---	V
Collector-Emitter Breakdown Voltage $I_C = 5\ \text{mA}$ , pulsed	$V_{(BR)CEO}$	30	---	V
Collector-Emitter Breakdown Voltage $I_C = 40\ \text{mA}$ , $V_{BE} = -5\text{V}$ , clamped	$V_{(BR)CEC}$	55	---	---
Emitter-Base Breakdown Voltage $I_E = 100\ \mu\text{A}$ , pulsed	$V_{(BR)EBO}$	3.5	---	V
Collector-Emitter Cutoff Current $V_{CE} = 55\ \text{V}$	$I_{CES}$	---	100	$\mu\text{A}$
Collector-Emitter Cutoff Current $V_{CE} = 55\ \text{V}$ , $T_A = +150^\circ\text{C}$	$I_{CES2}$	---	2.0	mA
Collector-Emitter Cutoff Current $V_{CE} = 28\ \text{V}$	$I_{CEO}$	---	20	$\mu\text{A}$

ON Characteristics	Symbol	Min	Max	Unit
<b>Forward Current Transfer Ratio</b> $I_C = 50\ \text{mA}$ , $V_{CE} = 5.0\ \text{V}$ (pulsed)	$h_{FE1}$	25	200	---
$I_C = 360\ \text{mA}$ , $V_{CE} = 5.0\ \text{V}$ (pulsed)	$h_{FE2}$	8.0	---	---
$I_C = 50\ \text{mA}$ , $V_{CE} = 5.0\ \text{V}$ (pulsed), $T_A = -55^\circ\text{C}$	$h_{FE3}$	12	---	---
<b>Collector-Emitter Saturation Voltage</b> $I_C = 100\ \text{mA}$ , $I_B = 10\ \text{mA}$ (pulsed)	$V_{CE(sat)}$	---	1.0	V dc
<b>Power Output</b> $V_{CC} = 28\ \text{V}$ , $P_{IN} = 0.15\ \text{W}$ , $f = 400\ \text{MHz}$	$P_{1out}$	1.0	2.0	W
<b>Power Output</b> $V_{CC} = 28\ \text{V}$ , $P_{IN} = 0.075\ \text{W}$ , $f = 400\ \text{MHz}$	$P_{2out}$	0.5	---	W
<b>Collector Efficiency</b> $V_{CC} = 28\ \text{V}$ , $P_{IN} = 0.15\ \text{W}$ , $f = 400\ \text{MHz}$	$n_1$	45	---	%
<b>Collector Efficiency</b> $V_{CC} = 28\ \text{V}$ , $P_{IN} = 0.075\ \text{W}$ , $f = 400\ \text{MHz}$	$n_2$	40	---	%

Small Signal Characteristics	Symbol	Min	Max	Unit
<i>Magnitude of Common Emitter, Small Signal, Short Circuit</i> Current Transfer Ratio $I_C = 50\ \text{mA}$ , $V_{CE} = 15\ \text{V}$ , $f = 200$	$ h_{FE} $	4.0	7.5	---
<i>Open Circuit Output Capacitance</i> $V_{CB} = 28\ \text{V}$ , $I_E = 0$	$C_{OBO}$	---	3.5	pF