

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 $I_C = 100\text{ }\mu\text{A}$, 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 $I_E = 100\text{ }\mu\text{A}$, pulsed	$V_{(BR)EBO}$	3.5	---	V
Collector-Emitter Cutoff Current $V_{CE} = 55\text{ V}$	I_{CES}	---	100	μA
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	μA

ON Characteristics	Symbol	Min	Max	Unit
Forward Current Transfer Ratio				
$I_C = 50\text{ mA}$, $V_{CE} = 5.0\text{ V}$ (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	---	---
Collector-Emitter Saturation Voltage				
$I_C = 100\text{ mA}$, $I_B = 10\text{ mA}$ (pulsed)	$V_{CE(sat)}$	---	1.0	V dc
Power Output				
$V_{CC} = 28\text{ V}$, $P_{IN} = 0.15\text{ W}$, $f = 400\text{ MHz}$	P_{1out}	1.0	2.0	W
Power Output				
$V_{CC} = 28\text{ V}$, $P_{IN} = 0.075\text{ W}$, $f = 400\text{ MHz}$	P_{2out}	0.5	---	W
Collector Efficiency				
$V_{CC} = 28\text{ V}$, $P_{IN} = 0.15\text{ W}$, $f = 400\text{ MHz}$	η_1	45	---	%
Collector Efficiency				
$V_{CC} = 28\text{ V}$, $P_{IN} = 0.075\text{ W}$, $f = 400\text{ MHz}$	η_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