

NPN 2N3866

SILICON PLANAR EPITAXIAL TRANSISTORS

The 2N3866 are NPN transistors mounted in TO-39 metal package with the collector connected to the case .
They are intended for VHF-UHF class A, B or C amplifier circuits and oscillator applications.
Compliance to RoHS.

ABSOLUTE MAXIMUM RATINGS

Symbol	Ratings	Value	Unit
V_{CEO}	Collector-Emitter Voltage	30	V
V_{CES}	Collector-Emitter Voltage ($V_{BE} = 0$)	55	V
V_{EBO}	Emitter-Base Voltage	3.5	V
I_C	Collector Current	0.5	A
P_D	Total Power Dissipation @ $T_{case} = 25^\circ$	5	Watts
T_J	Junction Temperature	200	$^\circ\text{C}$
T_{Stg}	Storage Temperature range	-65 to +200	$^\circ\text{C}$

THERMAL CHARACTERISTICS

Symbol	Ratings	Value	Unit
R_{thJ-c}	Thermal Resistance, Junction-case	35	$^\circ\text{C}/\text{W}$

ELECTRICAL CHARACTERISTICS

TC=25 $^\circ\text{C}$ unless otherwise noted

Symbol	Ratings	Test Condition(s)	Min	Typ	Max	Unit
I_{CEO}	Collector Cutoff Current	$V_{CE}=28\text{ V}, I_B=0$	-	-	20	μA
$V_{CEO} (*)$	Collector Emitter Sustaining Voltage	$I_C=5\text{ mA}, I_B=0$	30	-	-	V
V_{CES}	Collector Base Breakdown Voltage	$I_C=100\ \mu\text{A}, V_{BE}=0$	55	-	-	V
V_{EBO}	Emitter Base Breakdown Voltage	$I_E=100\ \mu\text{A}, I_C=0$	3.5	-	-	V
$h_{FE} (*)$	DC Current Gain	$I_C=50\text{ mA}, V_{CE}=5\text{ V}$	10	-	200	-
		$I_C=360\text{ mA}, V_{CE}=5\text{ V}$	5	-	-	
$V_{CE(SAT)} (*)$	Collector-Emitter saturation Voltage	$I_C=100\text{ mA}, I_B=20\text{ mA}$	-	-	1	V

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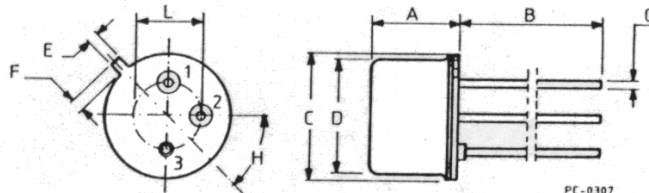
Symbol	Ratings	Test Condition(s)	Min	Typ	Max	Unit
f_T	Transition Frequency	$I_C=50 \text{ mA}$, $V_{CE}=15 \text{ V}$ $f=200\text{MHz}$	500	-	-	MHz
C_{CB0}	Collector-Base Capacitance	$I_E=0$, $V_{CB}=-28 \text{ V}$ $f=1\text{MHz}$	-	-	3	pF
$P_o^{(**)}$	Output Power	$V_{CC}=-28\text{V}$ $P_i=100 \text{ mW}$ $f=400 \text{ MHz}$	1	-	-	pF
$\eta^{(**)}$	Collector Efficiency	$V_{CC}=-28\text{V}$, $P_o=1 \text{ W}$ $f=400 \text{ MHz}$	45	-	-	ps

(*) Pulse conditions : $t_p < 300 \mu\text{s}$, $\delta = 1\%$.

(**) See test circuit.

MECHANICAL DATA CASE TO-39

DIMENSIONS	
	mm
A	6,25
B	13,59
C	9,24
D	8,24
E	0,78
F	1,05
G	0,42
H	45°
L	4,1



Pin 1 :	Emitter
Pin 2 :	Base
Pin 3 :	Collector
Case :	Collector

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