

**Silicon planar epitaxial
overlay transistors**

2N3866; 2N4427

DESCRIPTION

NPN overlay transistors in TO-39 metal packages with the collector connected to the case. The devices are primarily intended for class-A, B or C amplifiers, frequency multiplier and oscillator circuits.

APPLICATIONS

- The transistors are intended for use in output, driver or pre-driver stages in VHF and UHF equipment.

PINNING - TO-39/1

PIN	DESCRIPTION
1	emitter
2	base
3	collector

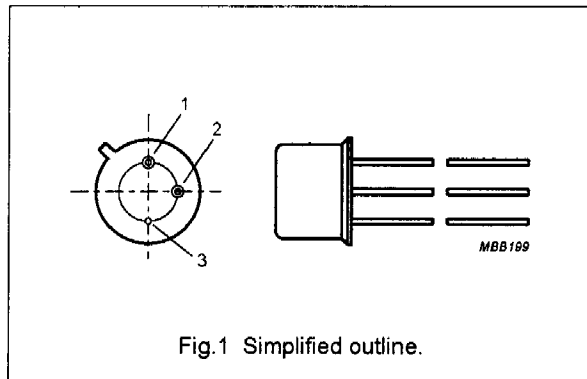


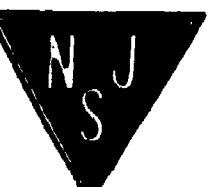
Fig.1 Simplified outline.

QUICK REFERENCE DATA

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
V_{CEr}	collector-emitter voltage	$R_{BE} = 10 \Omega$			
	2N3866 2N4427		-	55 40	V V
V_{CE0}	collector-emitter voltage	open base			
	2N3866 2N4427		-	30 20	V V
V_{EBO}	emitter-base voltage	open collector			
	2N3866 2N4427		-	3.5 2.0	V V
I_C	collector current (DC)		-	0.4	A
$I_{C(AV)}$	average collector current	measured over any 20 ms period	-	0.4	A
P_{tot}	total power dissipation	up to $T_{mb} = 25^\circ C$	-	3.5	W
f_T	transition frequency	$I_C = 50 \text{ mA}; V_{CE} = 15 \text{ V}; f = 200 \text{ MHz}$	500	-	MHz
T_j	junction temperature		-	200	$^\circ C$

RF performance

TYPE NUMBER	f (MHz)	V_{CE} (V)	P_o (W)	G_p (dB)	η (%)
2N3866	400	28	1	>10	>45
2N4427	175	12	1	>10	>50



LIMITING VALUES

In accordance with the Absolute Maximum Rating System (IEC 134).

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
V _{CBO}	collector-base voltage	open emitter	-	55	V
	2N3866			40	V
V _{CER}	collector-emitter voltage	R _{BE} = 10 Ω	-	55	V
	2N4427			40	V
V _{CEO}	collector-emitter voltage	open base	-	30	V
	2N4427			20	V
V _{EBO}	emitter-base voltage	open collector	-	3.5	V
	2N4427			2.0	V
I _C	collector current (DC)		-	0.4	A
I _{C(AV)}	average collector current	measured over any 20 ms period	-	0.4	A
I _{CM}	collector current peak value		-	0.4	A
P _{tot}	total power dissipation	up to T _{mb} = 25 °C	-	3.5	W
T _{stg}	storage temperature		-65	+200	°C
T _J	junction temperature		-	200	°C

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
R _{th j-a}	thermal resistance from junction to ambient in free air		200	K/W
R _{th j-mb}	thermal resistance from junction to mounting base		50	K/W
R _{th mb-h}	thermal resistance from mounting base to heatsink	note 1	1.0	K/W
		note 2	2.5	K/W