New Jersey Semi-Conductor Products, Inc.

20 STERN AVE.
SPRINGFIELD, NEW JERSEY 07081
U.S.A.

TELEPHONE: (973) 376-2922
(212) 227-6005
FAX: (973) 376-8960

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

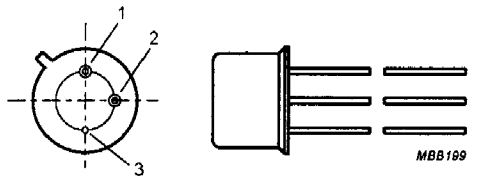

Fig.1 Simplified outline.

QUICK REFERENCE DATA

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
V_{CER}	collector-emitter voltage	R_{BE} = 10 Ω			
	2N3866		–	55	V
	2N4427		–	40	V
V_{CEO}	collector-emitter voltage	open base			
	2N3866		–	30	V
	2N4427		–	20	V
V_{EBO}	emitter-base voltage	open collector			
	2N3866		–	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
P_{tot}	total power dissipation	up to T_{mb} = 25 °C	–	3.5	W
f_T	transition frequency	I_C = 50 mA; V_{CE} = 15 V; f = 200 MHz	500	–	MHz
T_j	junction temperature		–	200	°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			
	2N3866		–	55	V
	2N4427		–	40	V
V_{CER}	collector-emitter voltage	R_{BE} = 10 Ω			
	2N3866		–	55	V
	2N4427		–	40	V
V_{CEO}	collector-emitter voltage	open base			
	2N3866		–	30	V
	2N4427		–	20	V
V_{EBO}	emitter-base voltage	open collector			
	2N3866		–	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
$R_{th\ j\text{-}a}$	thermal resistance from junction to ambient in free air		200	K/W
$R_{th\ j\text{-}mb}$	thermal resistance from junction to mounting base		50	K/W
$R_{th\ mb\text{-}h}$	thermal resistance from mounting base to heatsink	note 1	1.0	K/W
		note 2	2.5	K/W