

New Jersey Semi-Conductor Products, Inc.

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Silicon planar epitaxial overlay transistors

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2N3866; 2N4427

DESCRIPTION

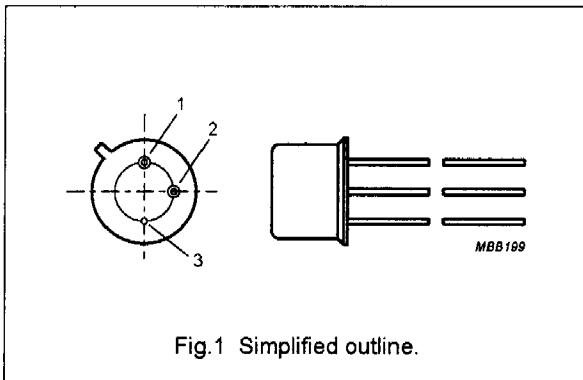
NPN overlay transistors in TO-39 metal packages with the collector connected to the case. The devices are primarily intended for class-A, B or C amplifiers, frequency multiplier and oscillator circuits.

PINNING - TO-39/1

PIN	DESCRIPTION
1	emitter
2	base
3	collector

APPLICATIONS

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



QUICK REFERENCE DATA

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
V_{CER}	collector-emitter voltage 2N3866 2N4427	$R_{BE} = 10 \Omega$	—	55	V
—	—	—	—	40	V
V_{CEO}	collector-emitter voltage 2N3866 2N4427	open base	—	30	V
—	—	—	—	20	V
V_{EBO}	emitter-base voltage 2N3866 2N4427	open collector	—	3.5	V
—	—	—	—	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 $T_{mb} = 25^\circ\text{C}$	—	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	$^\circ\text{C}$

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

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LIMITING VALUES

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
V_{CBO}	collector-base voltage 2N3866 2N4427	open emitter	— —	55 40	V
V_{CER}	collector-emitter voltage 2N3866 2N4427	$R_{BE} = 10 \Omega$	— —	55 40	V
V_{CEO}	collector-emitter voltage 2N3866 2N4427	open base	— —	30 20	V
V_{EBO}	emitter-base voltage 2N3866 2N4427	open collector	— —	3.5 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 $T_{mb} = 25^\circ\text{C}$	—	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