

FEATURES

- Withstands full load mismatch
- Emitter ballasting resistors for an optimum temperature profile
- Gold metallization ensures excellent reliability.

APPLICATIONS

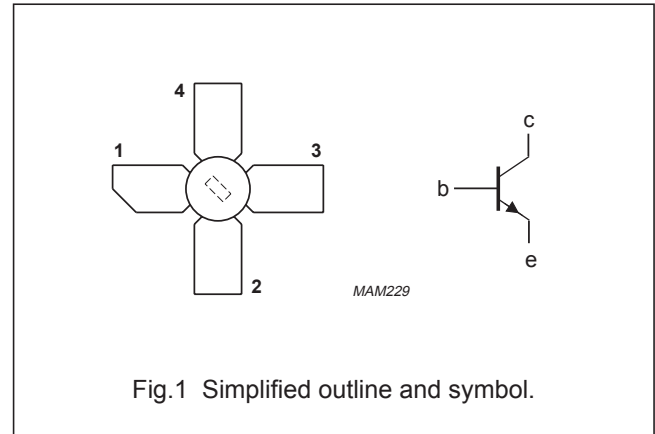
- Transmitting applications in the UHF range with a nominal supply voltage up to 28 V.

PINNING - SOT122A

PIN	SYMBOL	DESCRIPTION
1	c	collector
2	e	emitter
3	b	base
4	e	emitter

DESCRIPTION

NPN silicon planar epitaxial transistor primarily intended for class-A, B or C operation. The transistor is encapsulated in a 4-lead SOT122A stud envelope with a ceramic cap.



QUICK REFERENCE DATA

RF performance at $T_h = 25^\circ\text{C}$ in a common emitter test circuit.

MODE OF OPERATION	f (MHz)	V_{CE} (V)	P_L (W)	G_p (dB)	η_c (%)
CW, class-B	470	28	25	>6.5	>55

WARNING
Product and environmental safety - toxic materials
This product contains beryllium oxide. The product is entirely safe provided that the BeO disc is not damaged. All persons who handle, use or dispose of this product should be aware of its nature and of the necessary safety precautions. After use, dispose of as chemical or special waste according to the regulations applying at the location of the user. It must never be thrown out with the general or domestic waste.

Note : Above parameters , ratings , limits and conditions are subject to change.

LIMITING VALUES

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
V_{CESM}	collector-emitter voltage (peak value)	$V_{BE} = 0$	–	65	V
V_{CEO}	collector-emitter voltage	open base	–	30	V
V_{EBO}	emitter-base voltage	open collector	–	4	V
I_C	collector current (DC)		–	2.5	A
$I_{C(AV)}$	average collector current		–	2.5	A
I_{CM}	peak collector current	$f > 1$ MHz	–	6	A
P_{tot}	total power dissipation	$\leq T_{mb} = 25$ °C	–	60	W
T_{stg}	storage temperature		–65	+150	°C
T_j	operating junction temperature		–	200	°C

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
$R_{th\ j-mb}$	thermal resistance from junction to mounting base (DC dissipation)	$P_{tot} = 20$ W; $T_{mb} = 82$ °C; $T_h = 70$ °C	4	K/W
$R_{th\ j-mb}$	thermal resistance from junction to mounting base (RF dissipation)	$P_{tot} = 20$ W; $T_{mb} = 82$ °C; $T_h = 70$ °C	2.7	K/W
$R_{th\ mb-h}$	thermal resistance from mounting base to heatsink	$P_{tot} = 20$ W; $T_{mb} = 82$ °C; $T_h = 70$ °C	0.6	K/W

CHARACTERISTICS

$T_j = 25$ °C unless otherwise specified.

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
$V_{(BR)CES}$	collector-emitter breakdown voltage	$V_{BE} = 0$; $I_C = 25$ mA	65	–	–	V
$V_{(BR)CEO}$	collector-emitter breakdown voltage	open base; $I_C = 100$ mA	30	–	–	V
$V_{(BR)EBO}$	emitter-base breakdown voltage	open collector; $I_E = 10$ mA	4	–	–	V
V_{CEsat}	collector-emitter saturation voltage	$I_C = 4$ A; $I_B = 0.8$ A; note 1	–	1.5	–	V
I_{CES}	collector cut-off current	$V_{BE} = 0$; $V_{CE} = 30$ V	–	–	10	mA
E_{SBR}	second breakdown energy	open base; $L = 25$ mH; $f = 50$ Hz	3	–	–	mJ
		$R_{BE} = 10$ Ω ; $L = 25$ mH; $f = 50$ Hz	3	–	–	mJ
h_{FE}	DC current gain	$V_{CE} = 5$ V; $I_C = 1.5$ A; note 1	15	50	–	
f_T	transition frequency	$V_{CB} = 28$ V; $I_E = -1.5$ A; $f = 500$ MHz; note 1	–	1.1	–	f_T
		$V_{CB} = 28$ V; $I_E = -4$ A; $f = 500$ MHz; note 1	–	0.75	–	f_T
C_c	collector capacitance	$V_{CB} = 28$ V; $I_E = I_e = 0$; $f = 1$ MHz	–	33	–	pF
C_{re}	feedback capacitance	$V_{CE} = 28$ V; $I_C = 20$ mA; $f = 1$ MHz;	–	18	–	pF
C_{c-s}	collector-stud capacitance		–	1.2	–	pF

Note : Above parameters , ratings , limits and conditions are subject to change .