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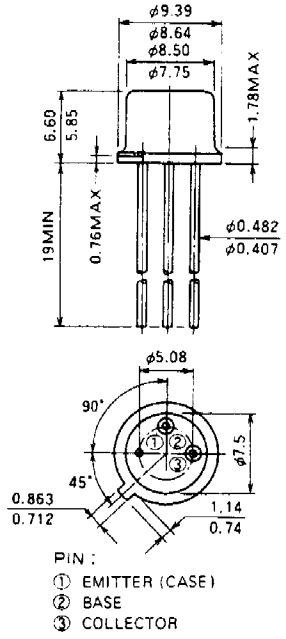
2SC2131

NPN EPITAXIAL PLANAR TYPE

OUTLINE DRAWING Dimensions in mm



PIN :
① EMITTER (CASE)
② BASE
③ COLLECTOR

DESCRIPTION

2SC2131 is a silicon NPN epitaxial planar type transistor designed for RF power amplifiers in UHF band mobile radio applications.

FEATURES

- High power gain: $G_{pe} \geqq 6.7$dB
  @V_{CC} = 13.5V, P_O = 1.4W, f = 500MHz
- TO-39 metal seeled package for high reliability.
- Emitter ballasted construction, gold metallization for good performances.
- Emitter electrode is connected electrically to the case.

APPLICATION

1 watt power amplifiers in UHF band mobile radio applications and driver amplifiers in general.

ABSOLUTE MAXIMUM RATINGS (T_C = 25°C unless otherwise specified)

Symbol	Parameter	Conditions	Ratings	Unit
V_{CBO}	Collector to base voltage		40	V
V_{EBO}	Emitter to base voltage		4	V
V_{CEO}	Collector to emitter voltage	$R_{BE} = \infty$	18	V
I_C	Collector current		0.6	A
P_C	Collector dissipation	T_a = 25°C	0.8	W
		T_C = 25°C	4	W
T_j	Junction temperature		175	°C
T_{stg}	Storage temperature		−55 to 175	°C
$R_{th\text{-}a}$	Thermal resistance	Junction to ambient	187.5	°C/W
$R_{th\text{-}c}$		Junction to case	37.5	°C/W

Note Above parameters are guaranteed independently.

ELECTRICAL CHARACTERISTICS (T_C = 25°C unless otherwise specified)

Symbol	Parameter	Test conditions	Limits			Unit
			Min	Typ	Max	
$V_{(BR)EBO}$	Emitter to base breakdown voltage	I_E = 1mA, I_C = 0	4			V
$V_{(BR)CBO}$	Collector to base breakdown voltage	I_C = 5mA, I_E = 0	40			V
$V_{(BR)CEO}$	Collector to emitter breakdown voltage	I_C = 50mA, $R_{BE} = \infty$	18			V
I_{CBO}	Collector cutoff current	V_{CB} = 25V, I_E = 0			100	μA
I_{EBO}	Emitter cutoff current	V_{EB} = 3V, I_C = 0			100	μA
h_{FE}	DC forward current gain*	V_{CE} = 10V, I_C = 0.1A	10	50	180	—
* P_O	Output power	V_{CC} = 13.5V, P_{in} = 0.3W, f = 500MHz	1.4	1.6		W
η_C	Collector efficiency		50	60		%

Note. * Pulse test, P_W = 150μs, duty = 5%.
Above parameters, ratings, limits and conditions are subject to change.