

RF POWER TRANSISTOR
2SC3102

NPN EPITAXIAL PLANAR TYPE

DESCRIPTION

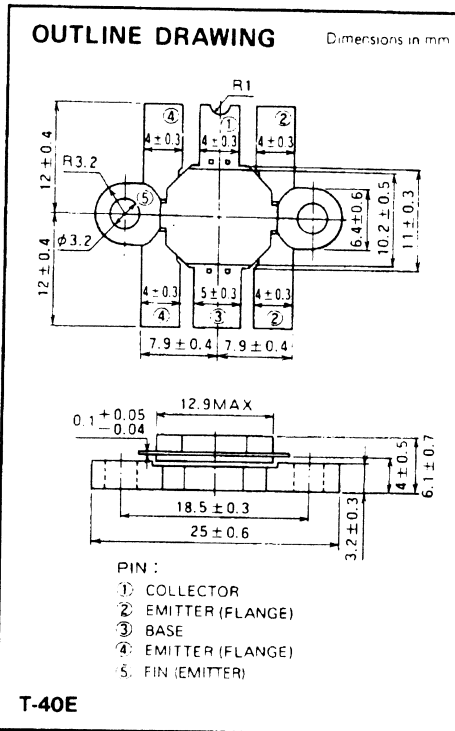
2SC3102 is a silicon NPN epitaxial planar type transistor specifically designed for high power amplifiers applications in UHF band.

FEATURES

- High power output and high gain: $P_O \geq 60W$, $G_{pe} \geq 4.8dB$
@ $V_{CC} = 12.5V$, $f = 520MHz$, $P_{in} = 20W$.
- Emitter ballasted construction.
- High ruggedness: Ability to withstand more than 20:1 load VSWR when operated at $V_{CC} = 15.2V$, $P_O = 60W$, $f = 520MHz$.
- High reliability due to gold metalization die
- Flange type ceramic package
- $Z_{in} = 1.0 + j1.0\Omega$, $Z_{out} = 1.1 + j1.0\Omega$
@ $V_{CC} = 12.5V$, $f = 520MHz$, $P_O = 60W$.

APPLICATION

For output stage of 50W power amplifiers in UHF band.



ABSOLUTE MAXIMUM RATINGS ($T_C = 25^\circ C$)

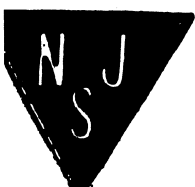
Symbol	Parameter	Conditions	Ratings	Unit
V_{CBO}	Collector to base voltage		35	V
V_{EBO}	Emitter to base voltage		4	V
V_{CEO}	Collector to emitter voltage	$R_{BE} = \infty$	17	V
I_C	Collector current		18	A
P_C	Collector dissipation	$T_C = 25^\circ C$	170	W
T_J	Junction temperature		175	$^\circ C$
T_{stg}	Storage temperature		-55 to 175	$^\circ C$

Note: Above parameters are guaranteed independently.

ELECTRICAL CHARACTERISTICS ($T_C = 25^\circ C$)

Symbol	Parameter	Test conditions	Limits			Unit
			Min	Typ	Max	
$V_{BR(E)BO}$	Emitter to base breakdown voltage	$I_E = 20mA$, $I_C = 0$	4			V
$V_{BR(C)BO}$	Collector to base breakdown voltage	$I_C = 20mA$, $I_E = 0$	35			V
$V_{BR(CE)O}$	Collector to emitter breakdown voltage	$I_C = 0.2A$, $R_{BE} = \infty$	17			V
I_{CBO}	Collector cut off current	$V_{CB} = 15V$, $I_E = 0$			5	mA
I_{EBO}	Emitter cut off current	$V_{EB} = 3V$, $I_C = 0$			5	mA
h_{FE}	DC forward current gain *	$V_{CE} = 10V$, $I_C = 2A$	10	50	180	-
P_O	Power Output	$V_{CC} = 12.5V$, $P_{in} = 20W$, $f = 520MHz$	60	65		W
η_C	Collector efficiency		60	65		%

Note: * Pulse test. $P_{av} = 150\mu s$, duty = 5%
Above parameters, ratings, limits and conditions are subject to change



NJ Semi-Conductors reserves the right to change test conditions, parameter limits and package dimensions without notice. Information furnished by NJ Semi-Conductors is believed to be both accurate and reliable at the time of going to press. However, NJ Semi-Conductors assumes no responsibility for any errors or omissions discovered in its use. NJ Semi-Conductors encourages customers to verify that datasheets are current before placing orders.