

SILICON NPN EPITAXIAL PLANAR TYPE

# 2SC1169

Unit in mm

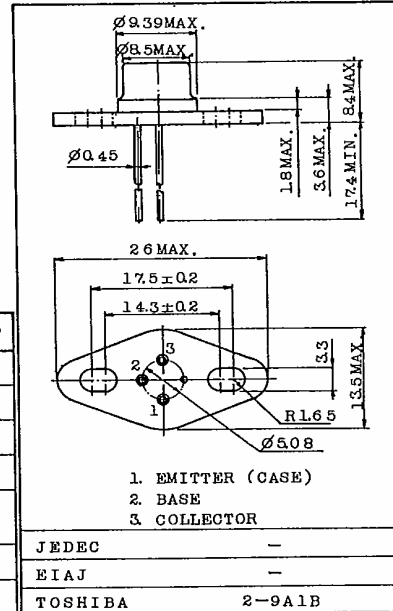
VHF BAND POWER AMPLIFIER APPLICATIONS.

FEATURES :

- Output Power :  $P_o=2.5W$  (Min.)  
(  $f=175MHz$ ,  $V_{CC}=13.5V$ ,  $P_i=0.25W$  )

MAXIMUM RATINGS ( $T_a=25^\circ C$ )

CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector-Base Voltage	$V_{CBO}$	40	V
Collector-Emitter Voltage	$V_{CEO}$	20	V
Emitter-Base Voltage	$V_{EBO}$	4	V
Collector Current	$I_C$	1	A
Collector Power Dissipation ( $T_c=25^\circ C$ )	$P_C$	10	W
Junction Temperature	$T_j$	175	$^\circ C$
Storage Temperature Range	$T_{stg}$	-65 ~ 175	$^\circ C$



Weight : 3.7g

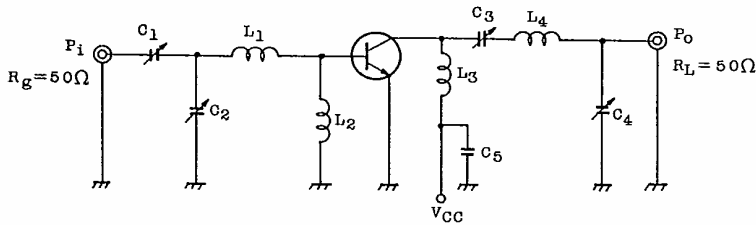
ELECTRICAL CHARACTERISTICS ( $T_a=25^\circ C$ )

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current	$I_{CBO}$	$V_{CB}=15V$ , $I_E=0$	-	-	1	$\mu A$
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C=1mA$ , $I_E=0$	40	-	-	V
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C=10mA$ , $I_B=0$	20	-	-	V
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E=1mA$ , $I_C=0$	4	-	-	V
DC Current Gain	$h_{FE}$	$V_{CE}=5V$ , $I_C=0.2A$	20	-	-	-
Collector Output Capacitance	$C_{ob}$	$V_{CB}=10V$ , $I_E=0$ , $f=1MHz$	-	6.5	10	pF
Output Power	$P_o$	(Fig.)	2.5	2.7	-	W
Power Gain	$G_{pe}$	$V_{CC}=13.5V$ , $f=175MHz$ , $P_i=0.25W$	10	10.3	-	dB
Collector Efficiency	$\eta_c$		60	73	-	%
Series Equivalent Input Impedance	$Z_{in}$	$V_{CC}=13.5V$ , $f=175MHz$ ,	-	5.0 +j2.5	-	$\Omega$
Series Equivalent Output Impedance	$Z_{OUT}$	$P_o=2.5W$	-	30 -j20	-	$\Omega$

TOSHIBA CORPORATION

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Fig. P<sub>o</sub> TEST CIRCUIT



- $C_1, C_2, C_3, C_4$  : 3.5 ~ 30pF  
 $C_5$  : 0.001 $\mu$ F FEED THROUGH AND 0.05 $\mu$ F CERAMIC CONDENSER  
 $L_1, L_3$  :  $\phi$ 1.2 SILVER PLATED COPPER WIRE, 8ID, 1T  
 $L_2$  : 1 $\mu$ H CHOLK COIL  
 $L_4$  :  $\phi$ 1.2 SILVER PLATED COPPER WIRE, 8ID, 7/4T

