

SILICON NPN EPITAXIAL PLANAR TYPE

# 2SC2173

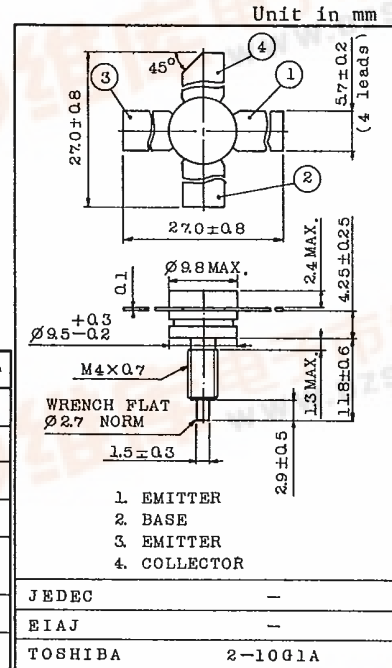
UHF BAND POWER AMPLIFIER APPLICATIONS.

FEATURES:

- . Output Power :  $P_o=25W(\text{Min.})$   
( $f=470\text{MHz}$ ,  $V_{CC}=12.6V$ ,  $P_i=10W$ )
- . 100% Tested for Load Mismatch Stress at All Phase Angles with 30:1 VSWR @  $V_{CC}=12.6V$ ,  $P_i=10W$ ,  $f=470\text{MHz}$

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

CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector-Base Voltage	$V_{CBO}$	35	V
Collector-Emitter Voltage	$V_{CEO}$	18	V
Emitter-Base Voltage	$V_{EBO}$	3.5	V
Collector Current	$I_C$	6	A
Collector Power Dissipation ( $T_c=25^\circ\text{C}$ )	$P_C$	50	W
Junction Temperature	$T_j$	175	$^\circ\text{C}$
Storage Temperature Range	$T_{stg}$	-65 ~ 175	$^\circ\text{C}$



Mounting Kit No. AC57

Weight : 3.3g

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

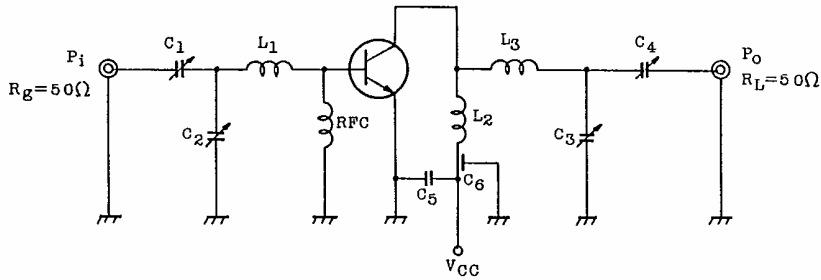
CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current	$I_{CBO}$	$V_{CB}=15V$ , $I_E=0$	-	-	1	mA
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C=10\text{mA}$ , $I_E=0$	35	-	-	V
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C=25\text{mA}$ , $I_B=0$	17	-	-	V
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E=1\text{mA}$ , $I_C=0$	3.5	-	-	V
DC Current Gain	$h_{FE}$	$V_{CE}=5V$ , $I_C=3A$	10	-	-	
Collector Output Capacitance	$C_{ob}$	$V_{CB}=10V$ , $I_E=0$ , $f=1\text{MHz}$	-	-	80	pF
Output Power	$P_o$	(Fig.)	25	28	-	W
Power Gain	$G_{pe}$	$V_{CC}=12.6V$ , $f=470\text{MHz}$ ,	3.9	4.5	-	dB
Collector Efficiency	$\eta_c$	$P_i=10W$	60	-	-	%
Series Equivalent Input Impedance	$Z_{IN}$	$V_{CC}=12.6V$ , $f=470\text{MHz}$ ,	-	$1.1+j2.6$	-	$\Omega$
Series Equivalent Output Impedance	$Z_{OUT}$	$P_o=25W$	-	$3.7+j0.8$	-	$\Omega$

TOSHIBA CORPORATION



# 2SC2173

Fig. f=470MHz P<sub>O</sub> TEST CIRCUIT



- C<sub>1</sub>, C<sub>3</sub> : 1.5 ~ 5pF
- C<sub>2</sub>, C<sub>4</sub> : 2.2~15pF
- C<sub>5</sub> : 0.01μF
- C<sub>6</sub> : 1000pF FEED THROUGH
- L<sub>1</sub>, L<sub>3</sub> : 5mm×15mm COPPER PLATE
- L<sub>2</sub> : φ1 SILVER PLATED COPPER WIRE, 10ID, 1/2T
- RFC : φ1 ENAMEL COATED COPPER WIRE, 3ID, 5T

