

9097250 TOSHIBA (DISCRETE/OPTO)

56C 07546 D T-33-09

SILICON NPN EPITAXIAL PLANAR TYPE

2SC2509

2~30MHz SSB LINEAR POWER AMPLIFIER APPLICATIONS.
(LOW SUPPLY VOLTAGE USE)

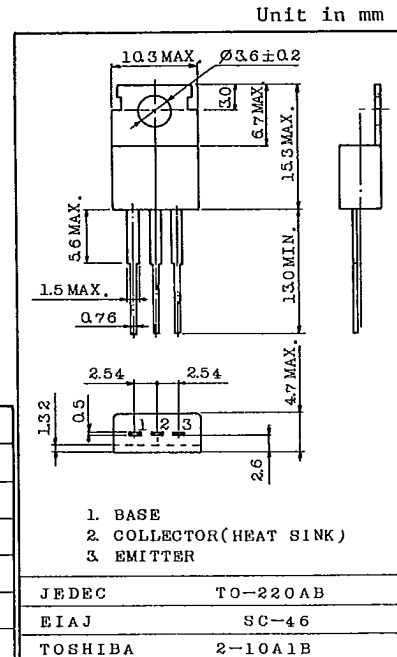
FEATURES:

- Specified 12.5V, 28MHz Characteristics

: Output Power : $P_o=10W_{PEP}$
 : Minimum Gain : $G_{pe}=14dB$
 : Efficiency : $\eta_c=35\%$ (Min.)
 : Intermodulation Distortion : $IMD=-30dB$ (Max.)

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

CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector-Base Voltage	V_{CBO}	40	V
Collector-Emitter Voltage	V_{CES}	40	V
Collector-Emitter Voltage	V_{CEO}	18	V
Emitter-Base Voltage	V_{EBO}	4	V
Collector Current	I_C	5	A
Collector Power Dissipation ($T_c=25^\circ C$)	P_C	20	W
Junction Temperature	T_j	150	$^\circ C$
Storage Temperature Range	T_{stg}	-55 ~ 150	$^\circ C$



Weight : 1.9g

Mounting Kit No. AC75

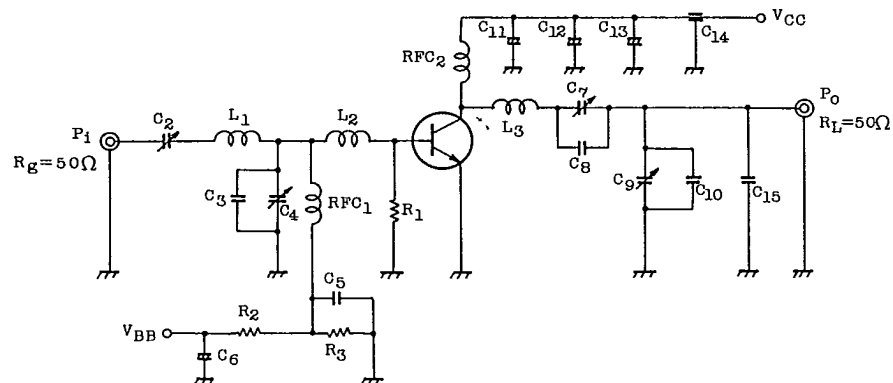
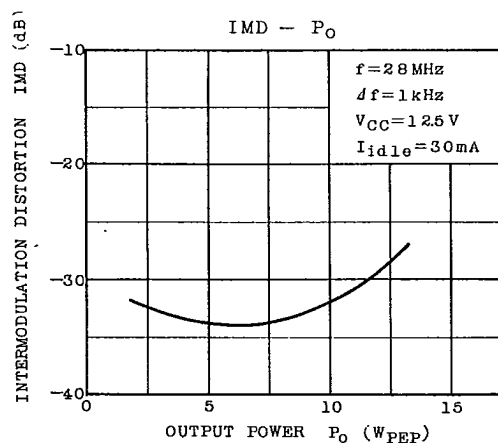
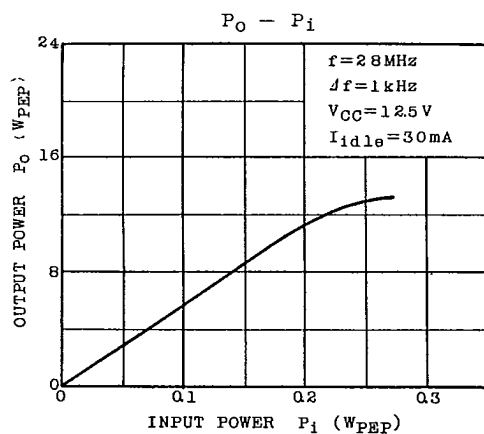
ELECTRICAL CHARACTERISTICS ($T_c=25^\circ C$)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C=10mA, I_B=0$	18	-	-	V
Collector-Emitter Breakdown Voltage	$V_{(BR)CES}$	$I_C=50mA, V_{BE}=0$	40	-	-	V
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E=1mA, I_C=0$	4	-	-	V
DC Current Gain	h_{FE}	$V_{CE}=5V, I_C=1A$	20	-	-	
Transition Frequency	f_T	$V_{CE}=5V, I_C=1A$	-	200	-	MHz
Collector Output Capacitance	C_{ob}	$V_{CB}=12.5V, I_E=0, f=1MHz$	-	-	150	pF
Power Gain	G_{pe}	$V_{CC}=12.5V, f=28MHz$	14.0	-	-	dB
Input Power	P_i	2-Tone, $\Delta f=1kHz$	-	-	0.4	WPEP
Collector Efficiency	η_c	$I_{idle}=30mA, P_o=10W_{PEP}$	35	-	-	%
Intermodulation Distortion	IMD	(Fig.)	-	-	-30	dB

TOSHIBA CORPORATION

9097250 TOSHIBA (DISCRETE/OPTO)

56C 07547 D T-33-09

2SC2509Fig. P_i TEST CIRCUIT C_2, C_4, C_7 : 7 ~ 150pF C_9 : 10 ~ 200pF C_3 : 400pF C_5, C_{13} : 0.4 μ F C_6 : 10.0 μ F 10WV C_8 : 400pF C_{10} : 200pF C_{11}, C_{12} : 22 μ F 35WV C_{14} : 1000pF
FEED THROUGH L_1 : ϕ 0.8 ENAMEL COATED COPPER WIRE, 9ID, 6T L_2 : ϕ 1 SILVER PLATED COPPER WIRE, 9ID, 2T L_3 : ϕ 1.5 ENAMEL COATED COPPER WIRE, 9ID, 5TRFC1 : ϕ 0.8 ENAMEL COATED COPPER WIRE, 9ID, 20TRFC2 : ϕ 1.5 ENAMEL COATED COPPER WIRE, 121ID, 15T R_1 : 5.6 Ω (1/2W) R_2 : 5 Ω (5W) R_3 : 1.5 Ω (10W) C_{15} : 100pF

TOSHIBA CORPORATION