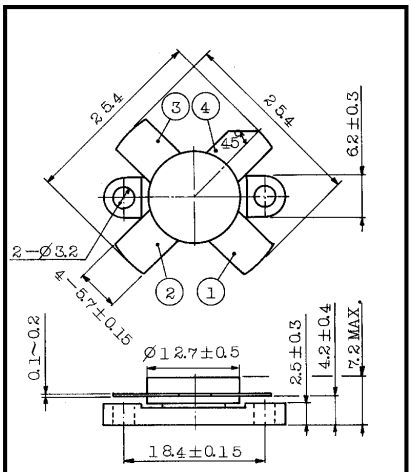
TOSHIBA TRANSISTOR SILICON NPN EPITAXIAL PLANAR TYPE

2SC2879

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

- Specified 12.5V, 28MHz Characteristics
- Output Power : $P_O = 100W_{PEP}$
- Power Gain : $G_p = 13dB$
- Collector Efficiency : $\eta_C = 35\%$ (Min.)
- Intermodulation Distortion : IMD = −24dB(Max.) (MIL Standard)

Unit in mm



1. EMITTER
2. BASE
3. EMITTER
4. COLLECTOR

JEDEC	—
EIAJ	—
TOSHIBA	2-13B1A

Weight : 5.2g

MAXIMUM RATINGS (Tc = 25°C)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector-Base Voltage	V_{CBO}	45	V
Collector-Emitter Voltage	V_{CES}	45	V
Collector-Emitter Voltage	V_{CEO}	18	V
Emitter-Base Voltage	V_{EBO}	4	V
Collector Current	I_C	25	A
Collector Power Dissipation	P_C	250	W
Junction Temperature	T_j	175	°C
Storage Temperature Range	T_{stg}	−65~175	°C

ELECTRICAL CHARACTERISTICS (Tc = 25°C)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C = 100mA$, $I_B = 0$	18	—	—	V
Collector-Emitter Breakdown Voltage	$V_{(BR)CES}$	$I_C = 100mA$, $V_{EB} = 0$	45	—	—	V
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E = 1mA$, $I_C = 0$	4	—	—	V
DC Current Gain	h_{FE}	$V_{CE} = 5V$, $I_C = 10A$	10	—	150	
Collector Output Capacitance	C_{ob}	$V_{CB} = 12.5V$, $I_E = 0$, f = 1MHz	—	700	—	pF
Power Gain	G_p	$V_{CC} = 12.5V$, $f_1 = 28.000MHz$	13.0	15.2	—	dB
Input Power	Pi	$f_2 = 28.001MHz$	—	6	10	W_{PEP}
Collector Efficiency	η_C	$I_{idle} = 100mA$	35	—	—	%
Intermodulation Distortion	IMD	$P_O = 100W_{PEP}$.(Fig.)	—	—	−24	dB
Series Equivalent Input Impedance	Z_{in}	$V_{CC} = 12.5V$, f = 28MHz	—	1.45 −j0.95	—	Ω
Series Equivalent Output Impedance	Z_{out}	$\Delta f = 1kHz$, $P_O = 100W_{PEP}$	—	1.45 −j1.0	—	Ω

CAUTION

Beryllia Ceramics is used in this product. The dust or vapor can be dangerous to humans. Do not break, cut, crush or dissolve chemically. Dispose of this properly according to law. Do not intermingle with normal industrial or domestic waste.

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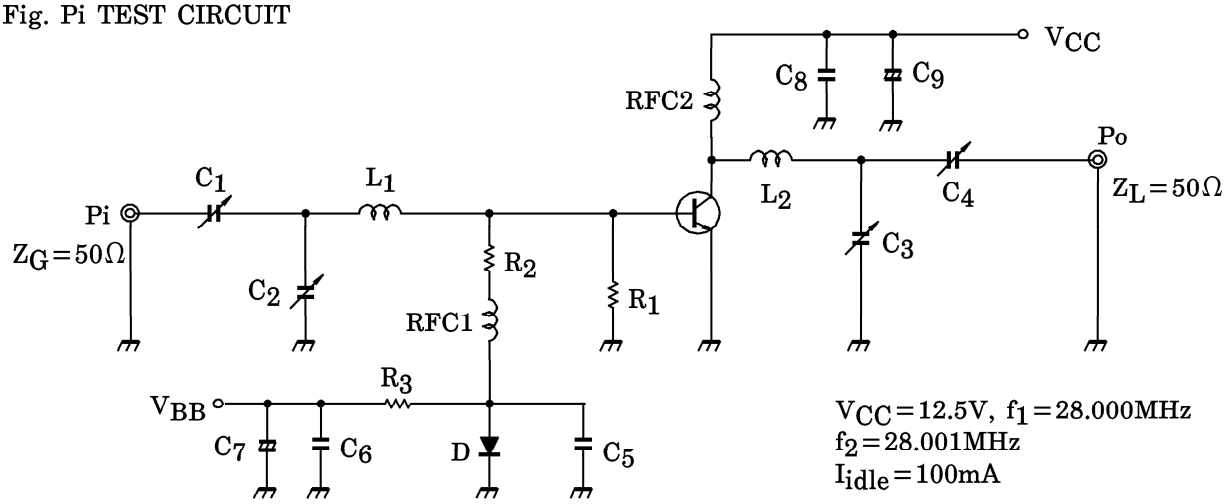
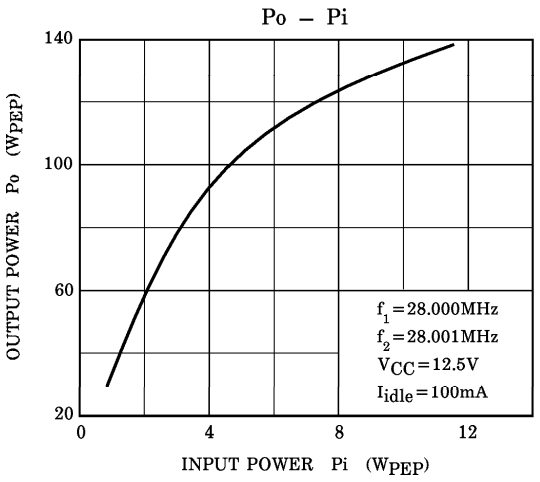
Fig. Pi TEST CIRCUIT

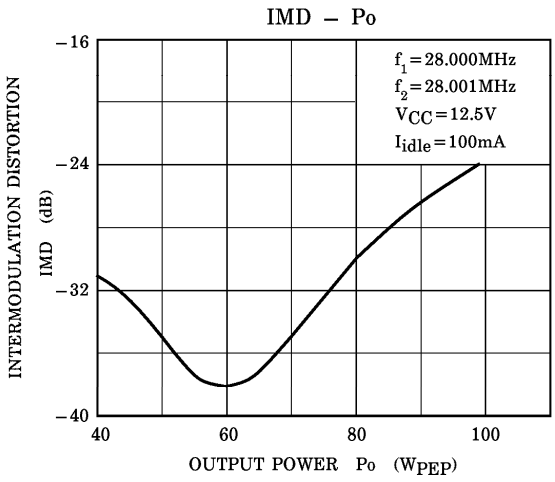


V_{CC}=12.5V, f_1=28.000MHz
f_2=28.001MHz
I_{idle}=100mA

C_1, C_2 : 7~150pF
C_3, C_4 : 7~150pF 2KWV
C_5, C_6 : 0.022μF
C_7 : 47μF 10WV
C8 : 0.044μF
C9 : 100μF 50WV

L_1 : ϕ0.8 ENAMEL COATED COPPER WIRE, 14ID, 4T, 4P
L_2 : ϕ1.2 ENAMEL COATED COPPER WIRE, 14ID, 3 1/2T, 3P
RFC1 : ϕ0.8mm EMAMEL COATED COPPER WIRE, 10ID, 9T
(Ferrite Core TDK K2)
RFC2 : ϕ1.8mm ENAMEL COATED COPPER WIRE, 14ID, 20T
R_1 : 10Ω (1W)
R_2 : 2Ω (1/2W)
R_3 : 10Ω (5W)
D : 1S1555





CAUTION
These are only typical curves and devices are not necessarily guaranteed at these curves.