

TOSHIBA TRANSISTOR SILICON NPN EPITAXIAL PLANAR TYPE

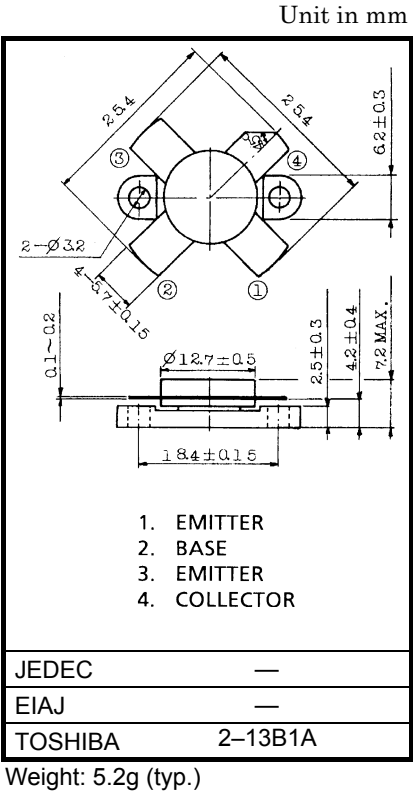
2SC2879A

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)

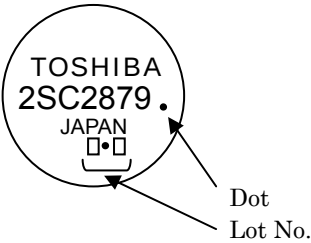
Absolute Maximum Ratings (Tc = 25°C)

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



Note: Using continuously under heavy loads (e.g. the application of high temperature/current/voltage and the significant change in temperature, etc.) may cause this product to decrease in the reliability significantly even if the operating conditions (i.e. operating temperature/current/voltage, etc.) are within the absolute maximum ratings.
Please design the appropriate reliability upon reviewing the Toshiba Semiconductor Reliability Handbook ("Handling Precautions"/"Derating Concept and Methods") and individual reliability data (i.e. reliability test report and estimated failure rate, etc).

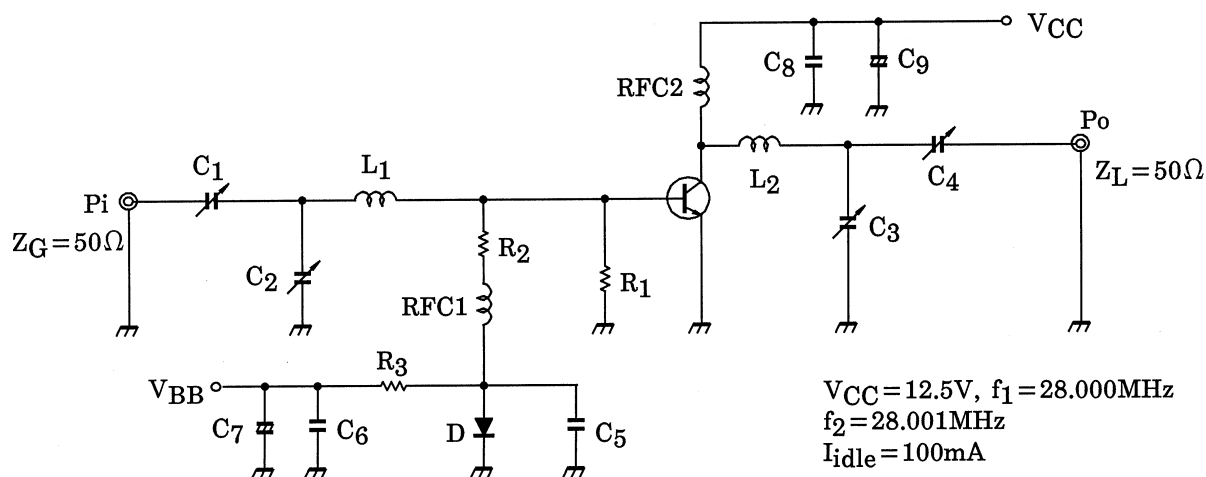
Marking



Electrical Characteristics (Tc = 25°C)

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

Fig. Pi Test Circuit



C_1, C_2 : 7~150pF

C_3, C_4 : 7~150pF 2KWV

C_5, C_6 : 0.022 μ F

C_7 : 47 μ F 10WV

C_8 : 0.044 μ F

C_9 : 100 μ F 50WV

L_1 : $\phi 0.8$ ENAMEL COATED COPPER WIRE, 14ID, 4T, 4P

L_2 : $\phi 1.2$ ENAMEL COATED COPPER WIRE, 14ID, 3 1/2T, 3P

$RFC1$: $\phi 0.8mm$ ENAMEL COATED COPPER WIRE, 10ID, 9T
(Ferrite Core TDK K2)

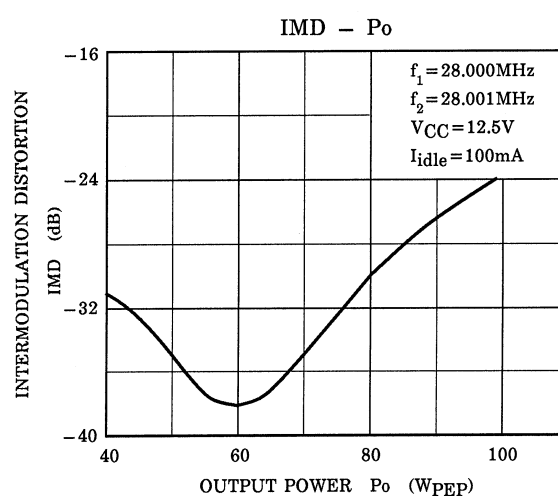
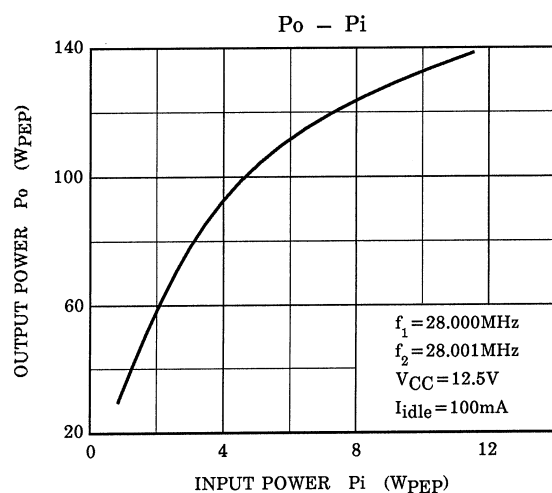
$RFC2$: $\phi 1.8mm$ ENAMEL COATED COPPER WIRE, 14ID, 20T

R_1 : 10 Ω (1W)

R_2 : 2 Ω (1/2W)

R_3 : 10 Ω (5W)

D : 1S1555



Caution

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

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