

TOSHIBA TRANSISTOR SILICON NPN EPITAXIAL PLANAR TYPE

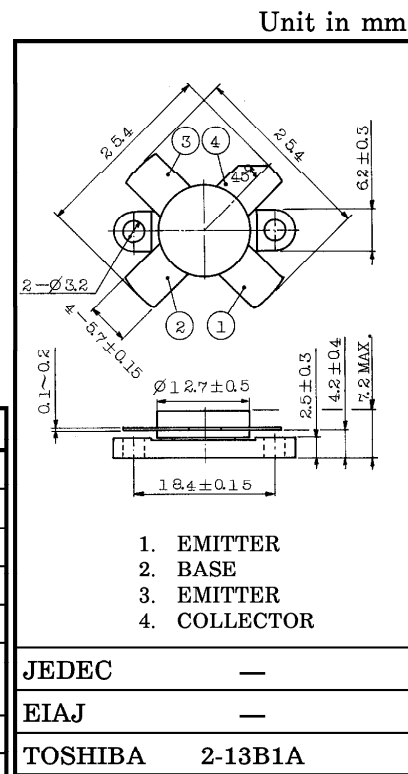
## 2SC2879

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)

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

| 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<br>( $T_c = 25^\circ C$ ) | $P_C$     | 250            | W          |
| Junction Temperature                                  | $T_j$     | 175            | $^\circ C$ |
| Storage Temperature Range                             | $T_{stg}$ | $-65 \sim 175$ | $^\circ C$ |



Weight : 5.2g

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

| 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        | $C_{ob}$      | $V_{CB} = 12.5V, I_E = 0$<br>$f = 1MHz$ | —    | 700            | —    | pF        |
| Power Gain                          | $G_p$         | $V_{CC} = 12.5V, f = 28MHz$             | 13.0 | 15.2           | —    | dB        |
| Input Power                         | $P_i$         | 2-Tone, $\Delta f = 1kHz$               | —    | 6              | 10   | $W_{PEP}$ |
| Collector Efficiency                | $\eta_C$      | $I_{idle} = 100mA$                      | 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<br>-j0.95 | —    | $\Omega$  |
| Series Equivalent Output Impedance  | $Z_{out}$     | $\Delta f = 1kHz, P_o = 100W_{PEP}$     | —    | 1.45<br>-j1.0  | —    | $\Omega$  |

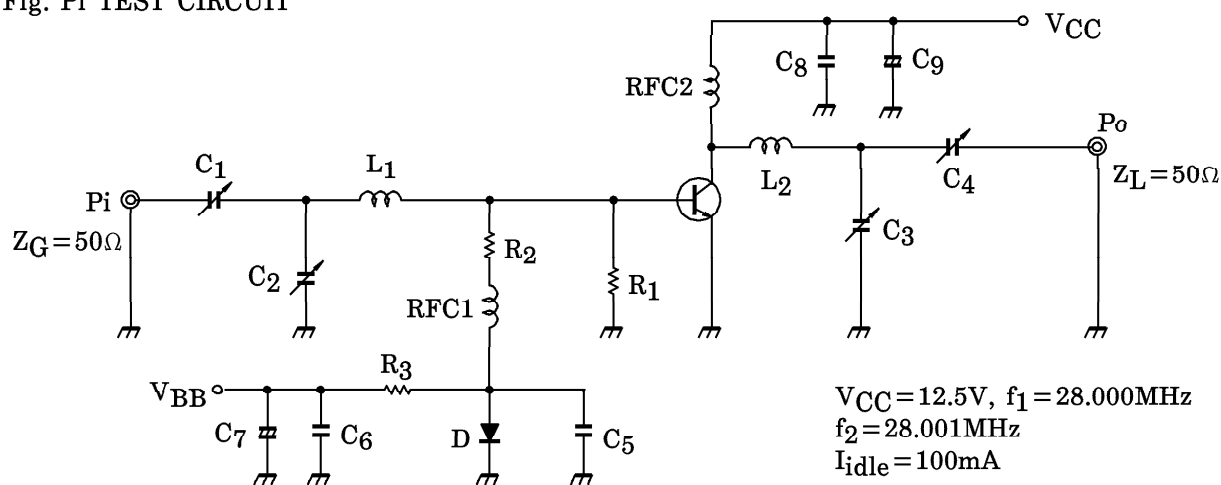
## CAUTION

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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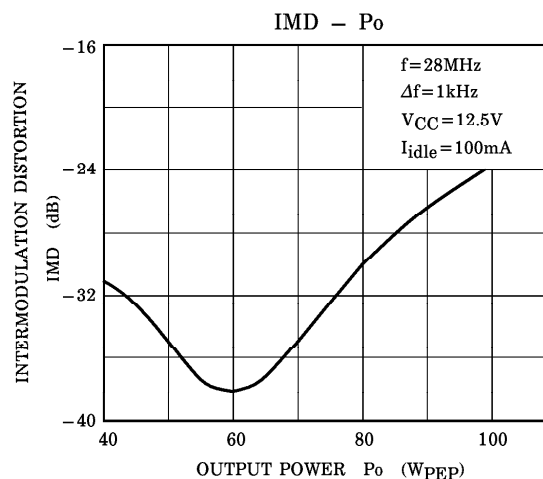
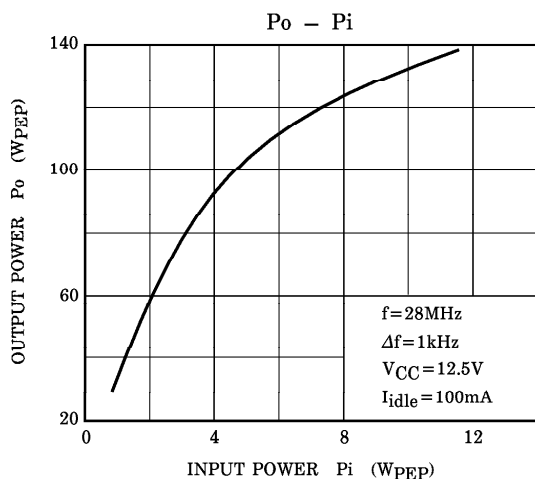
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Fig. Pi TEST CIRCUIT



$C_1, C_2$  : 7~150pF  
 $C_3, C_4$  : 7~150pF 2KWV  
 $C_5, C_6$  : 0.022 $\mu$ F  
 $C_7$  : 47 $\mu$ F 10WV  
 $C_8$  : 0.044 $\mu$ F  
 $C_9$  : 100 $\mu$ 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 $\Omega$  (1W)  
 $R_2$  : 2 $\Omega$  (1/2W)  
 $R_3$  : 10 $\Omega$  (5W)  
 $D$  : 1S1555



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