

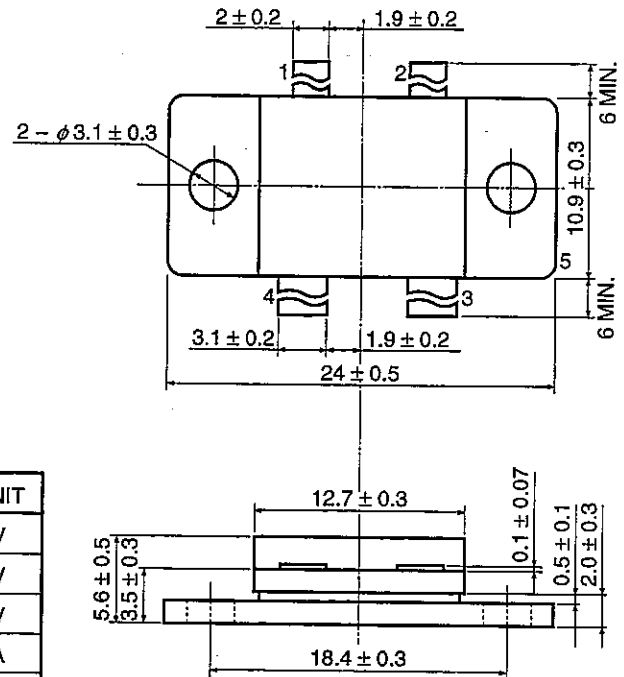
SILICON POWER TRANSISTOR
2SC3286-M

NPN SILICON EPITAXIAL TRANSISTOR
FOR 230-MHz WIDEBAND POWER AMPLIFIER
INDUSTRIAL USE

FEATURES

- High gain and high power output at 230 MHz
 $P_{out} = 140\text{ W}$ @ $V_{CC} = 28\text{ V}$, $P_{in} = 10\text{ W}$, class AB
- Push-pull structure allows easy design of wideband amplifier
- Internal emitter balance resistor
- Withstand up to $VSWR = \infty$
- Internal impedance matching circuit
- High reliability due to gold electrodes

PACKAGE DIMENSIONS (in millimeters)



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

PARAMETER	SYMBOL	RATINGS	UNIT
Collector to Base Voltage	V_{CBO}	55	V
Collector to Emitter Voltage	V_{CEO}	32	V
Emitter to Base Voltage	V_{EBO}	3	V
Collector Current	I_C	24	A
Thermal Resistance (junction to case)	$R_{th(j-c)}$	0.63	$^\circ\text{C/W}$
Total Power Dissipation	$P_T (T_C = 25\text{ }^\circ\text{C})$	280	W
Junction Temperature	T_j	200	$^\circ\text{C}$
Storage Temperature	T_{stg}	-65 to +150	$^\circ\text{C}$

PIN CONNECTIONS

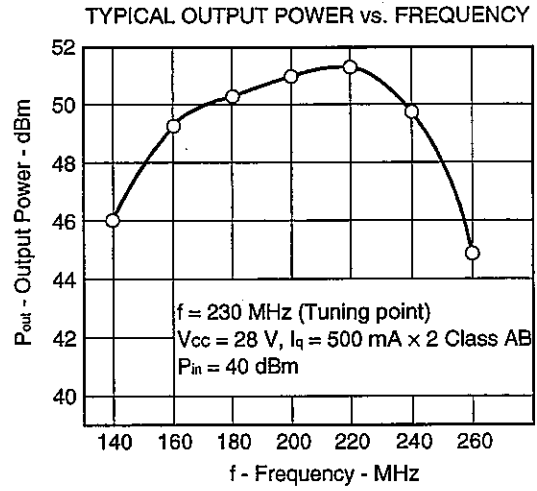
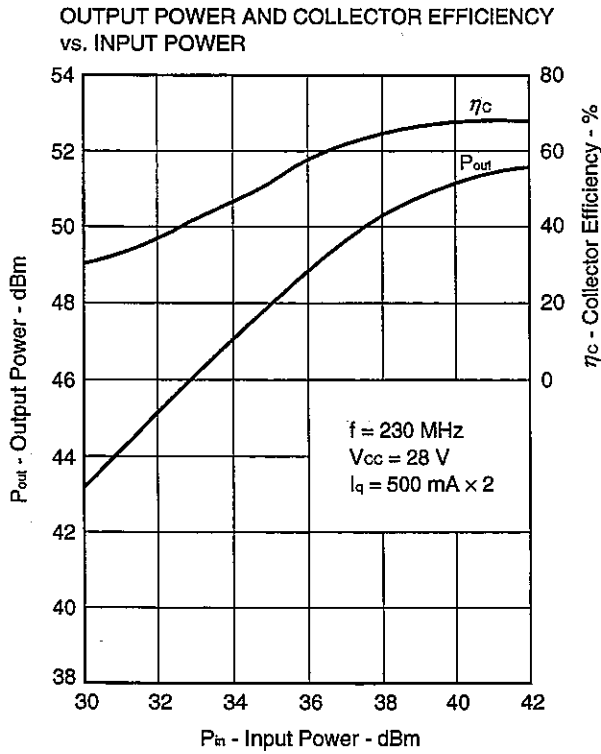
1. Collector
2. Collector
3. Base
4. Base
5. Emitter (heat sink)

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

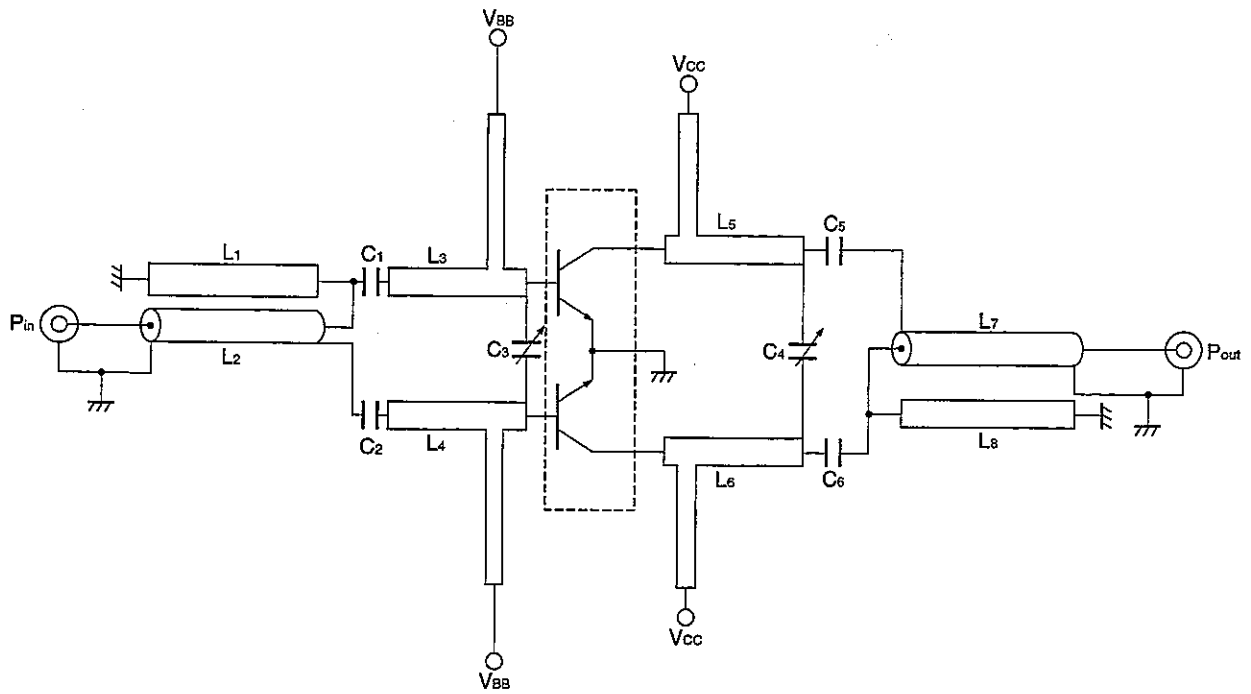
PARAMETER	SYMBOL	TEST CONDITIONS	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current	I_{CBO}	$V_{CB} = 30\text{ V}$, $I_E = 0$			4	mA
Emitter Cut-off Current	I_{EBO}	$V_{EB} = 2\text{ V}$, $I_C = 0$			4	mA
DC Current Gain	h_{FE} <small>Note</small>	$V_{CE} = 10\text{ V}$, $I_C = 2\text{ A}$ (pulse)	20	60	150	-
Output Power	P_{out}	$f = 230\text{ MHz}$, $V_{CC} = 28\text{ V}$ $P_{in} = 10\text{ W}$ (40 dBm)	50	51.4		dBm
			100	140		W
Collector Efficiency	η_C	$I_q = 500\text{ mA} \times 2$, class AB	55	65		%
Feedback Capacitance	C_{re} <small>Note</small>	$V_{CB} = 28\text{ V}$, $f = 1\text{ MHz}$		170	240	pF

Note Per unit

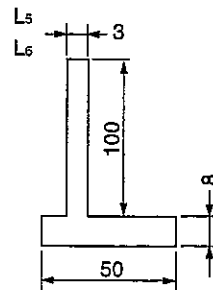
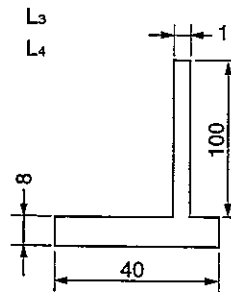
TYPICAL CHARACTERISTICS (T_A = 25 °C)



APPLICATION CIRCUIT EXAMPLE



- C₁ = C₂ = 51 pF
- C₃ = 40 pF
- C₄ = 35 pF
- C₅ = C₆ = 39 pF
- L₁ = L₈ = Micro-strip line 70 × 5 mm
- L₂ = L₇ = 50 Ω Semi-rigid cable 70 mm
- L_{3 to 6} = Micro-strip line (in millimeters)



Substrate material: Glass-epoxy t = 1.6 mm

CAUTIONS ON HANDLING DEVICES

This device employs beryllia ceramics (beryllium oxide) internally. Inhalation of beryllium oxide powder or vapor into the human respiratory system may cause hazards such as breathing difficulties and other problems.

Therefore, do not disintegrate or chemically process this device.

Moreover, when disposing of this device, be sure to separate it from general industrial waste and domestic garbage.

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Anti-radioactive design is not implemented in this product.