

SILICON POWER TRANSISTOR

2SC3817

NPN SILICON EPITAXIAL TRANSISTOR FOR 1500-MHz BAND POWER AMPLIFIER INDUSTRIAL USE

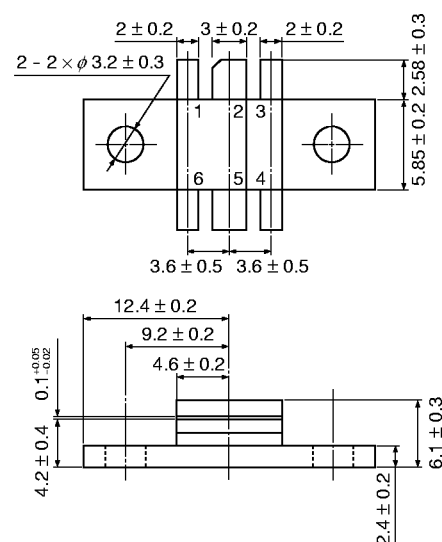
FEATURES

- High efficiency, high power output and excellent linearity obtainable at 1500-MHz band
 $P_{out} = 1.0 \text{ W}$, Gain = 8.0 dB TYP.
 @ $V_{CC} = 13.5 \text{ V}$, $I_q = 5 \text{ mA}$, class AB
- Internal emitter balance resistor

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

PARAMETER	SYMBOL	RATINGS	UNIT
Collector to Base Voltage	V_{CBO}	35	V
Collector to Emitter Voltage	V_{CEO}	18	V
Emitter to Base Voltage	V_{EBO}	2.5	V
Collector Current	I_C	0.5	A
Thermal Resistance (junction to case)	$R_{th(j-c)}$	21	$^\circ\text{C/W}$
Total Power Dissipation	$P_T (T_C = 25^\circ\text{C})$	8.3	W
Junction Temperature	T_j	200	$^\circ\text{C}$
Storage Temperature	T_{stg}	-65 to +150	$^\circ\text{C}$

PACKAGE DIMENSIONS (in millimeters)



PIN CONNECTIONS

- | | |
|------------|--------------|
| 1. Emitter | 4. Emitter |
| 2. Base | 5. Collector |
| 3. Emitter | 6. Emitter |

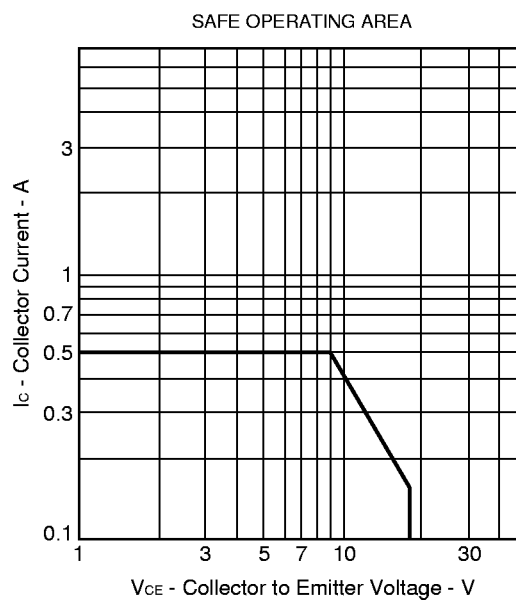
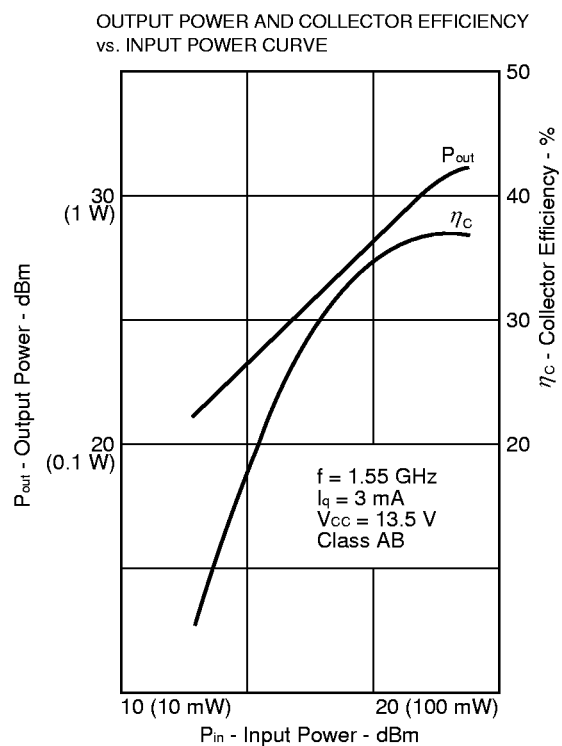
Flange is connected to the emitter

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

PARAMETER	SYMBOL	TEST CONDITIONS	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current	I_{CBO}	$V_{CB} = 20 \text{ V}$, $I_E = 0$			0.1	mA
Emitter Cut-off Current	I_{EBO}	$V_{EB} = 1.5 \text{ V}$, $I_C = 0$			0.1	mA
DC Current Gain	h_{FE}	$V_{CE} = 10 \text{ V}$, $I_C = 0.1 \text{ A}$ (pulse)	20	60	200	—
Output Capacitance	C_{ob} ^{Note}	$V_{CB} = 10 \text{ V}$, $I_E = 0$, $f = 1 \text{ MHz}$			5	pF
Output Power	P_{out}	$V_{CC} = 13.5 \text{ V}$, $I_q = 3 \text{ mA}$ $f = 1\,550 \text{ MHz}$	29.4	30		dBm
Collector Efficiency	η_C	$P_{in} = 22 \text{ dBm}$ (0.16 W)	0.87	1.0		W
			30	36		%

Note Emitter and case are grounded

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



INPUT AND OUTPUT IMPEDANCE DATA

