

SILICON POWER TRANSISTOR 2SB1261-Z

PNP SILICON EPITAXIAL TRANSISTOR

DESCRIPTION

The 2SB1261-Z is designed for Audio Frequency Amplifier and Switching, especially in Hybrid Integrated Circuits.

FEATURES

- High h_{FE} $h_{FE} = 100$ to 400
- Low $V_{CE(sat)}$ $V_{CE(sat)} \leq 0.3$ V

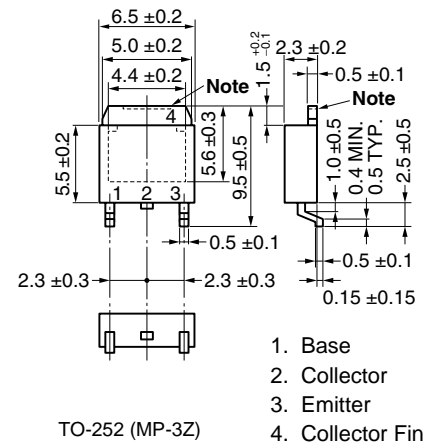
ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$)

Collector to Base Voltage	V_{CBO}	-60	V
Collector to Emitter Voltage	V_{CEO}	-60	V
Emitter to Base Voltage	V_{EBO}	-7.0	V
Collector Current (DC)	$I_{C(DC)}$	-3.0	A
Collector Current (pulse) ^{Note 1}	$I_{C(pulse)}$	-5.0	A
Base Current (DC)	$I_{B(DC)}$	-0.5	A
Total Power Dissipation ($T_A = 25^\circ\text{C}$) ^{Note 2}	P_{T1}	2.0	W
Total Power Dissipation ($T_C = 25^\circ\text{C}$)	P_{T2}	10	W
Junction Temperature	T_j	150	$^\circ\text{C}$
Storage Temperature	T_{stg}	-55 to +150	$^\circ\text{C}$

Notes 1. $PW \leq 10$ ms, Duty Cycle $\leq 50\%$

2. When mounted on ceramic substrate of $7.5\text{ cm}^2 \times 0.7$ mm

PACKAGE DRAWING (Unit: mm)



Note The depth of notch at the top of the fin is from 0 to 0.2 mm.

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ELECTRICAL CHARACTERISTICS (T_a = 25 °C)

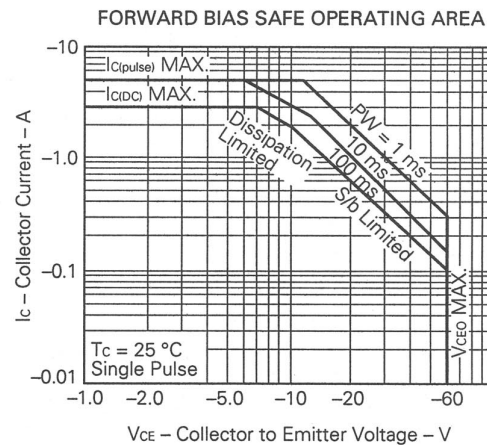
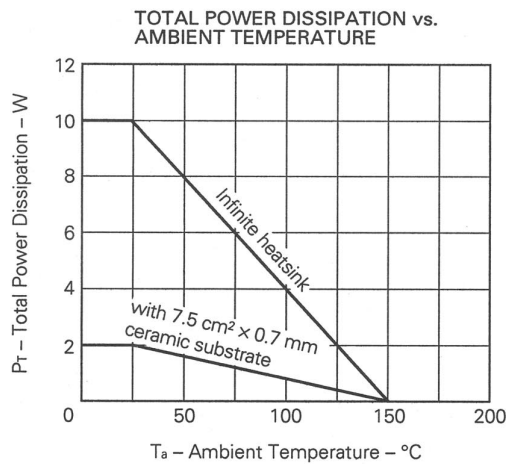
CHARACTERISTIC	SYMBOL	MIN.	TYP.	MAX.	UNIT	TEST CONDITIONS
Collector Cutoff Current	I _{CSO}			-10	μA	V _{CB} = -60 V, I _E = 0
Emitter Cutoff Current	I _{ES0}			-10	μA	V _{EB} = -7.0 V, I _C = 0
DC Current Gain	h _{FE1} *	60				V _{CE} = -2.0 V, I _C = -0.2 A
DC Current Gain	h _{FE2} *	100		400		V _{CE} = -2.0 V, I _C = -0.6 A
DC Current Gain	h _{FE3} *	50				V _{CE} = -2.0 V, I _C = -2.0 A
Collector Saturation Voltage	V _{CE(sat)} *		-0.2	-0.3	V	I _C = -1.5 A, I _B = -0.15 A
Base Saturation Voltage	V _{BE(sat)} *		-0.94	-1.2	V	I _C = -1.5 A, I _B = -0.15 A
Gain Bandwidth Product	f _T		50		MHz	V _{CE} = -5.0 V, I _E = 1.5 A
Output Capacitance	C _{ob}		40		pF	V _{CB} = -10 V, I _E = 0, f = 1.0 MHz
Turn-on Time	t _{on}		0.15	0.5	μs	I _C = -1.0 A, V _{CC} = -10 V, R _L = 10 Ω, I _{B1} = -I _{B2} = -0.1 A
Storage Time	t _{stg}		0.5	2.0	μs	
Fall time	t _r		0.1	0.5	μs	

* Pulsed: PW ≤ 350 μs, Duty Cycle ≤ 2 %

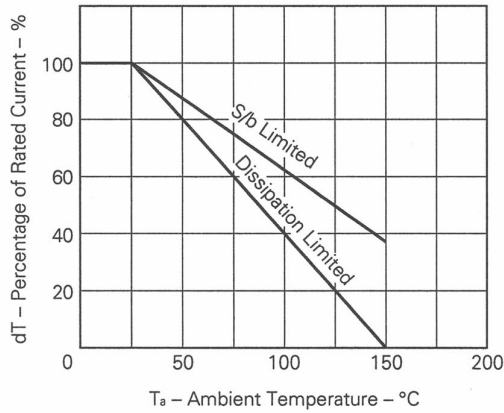
h_{FE} Classification

MARKING	M	L	K
h _{FE2}	100 to 200	160 to 320	200 to 400

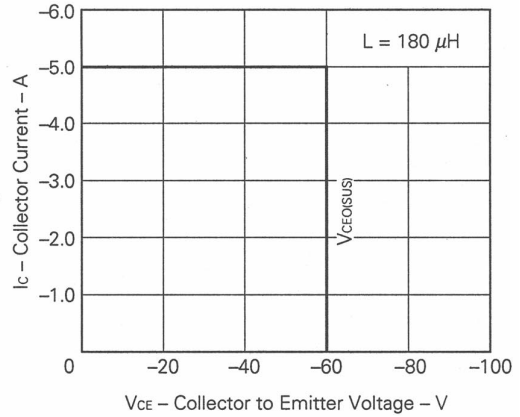
TYPICAL CHARACTERISTICS (T_a = 25 °C)



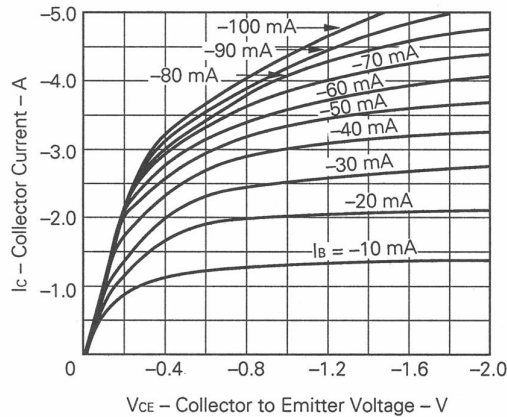
DERATING CURVE OF SAFE OPERATING AREA



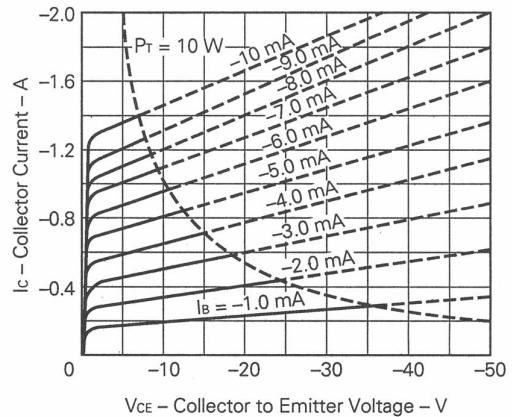
RESERVE BIAS SAFE OPERAING AREA



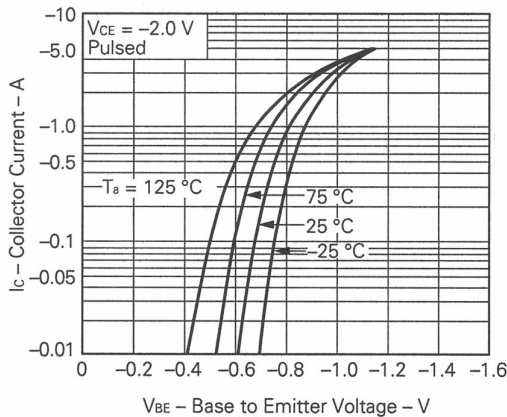
COLLECTOR CURRENT vs. COLLECTOR TO EMITTER VOLTAGE



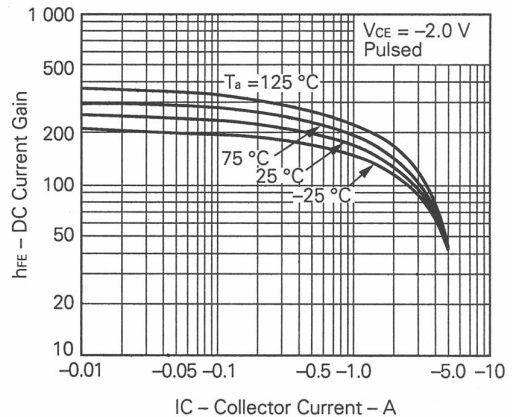
COLLECTOR CURRENT vs. COLLECTOR TO EMITTER VOLTAGE

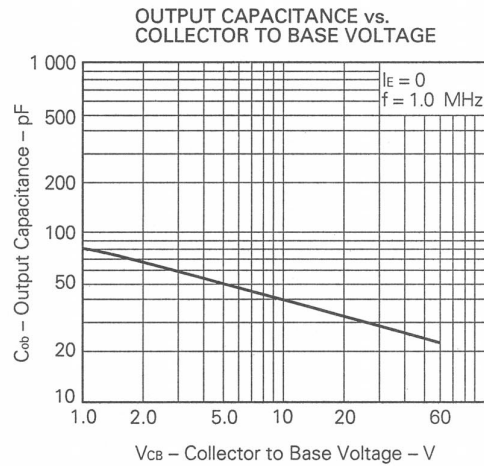
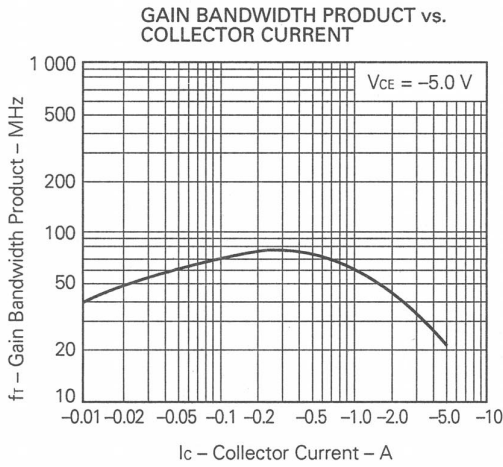
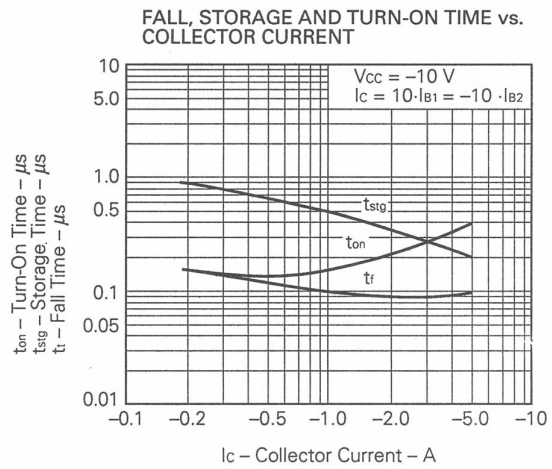
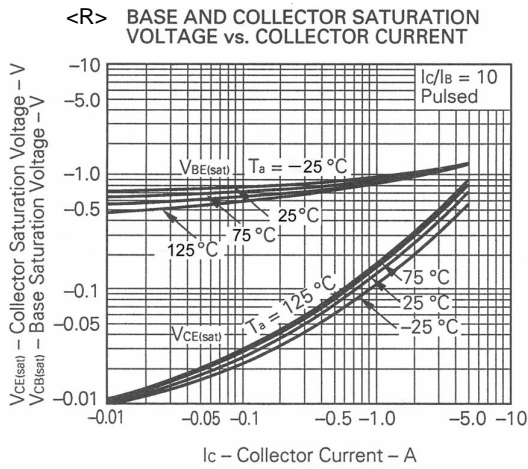


COLLECTOR CURRENT vs. BASE TO EMITTER VOLTAGE



DC CURRENT GAIN vs. COLLECTOR CURRENT





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