SILICON TRANSISTOR
2SA1385-Z

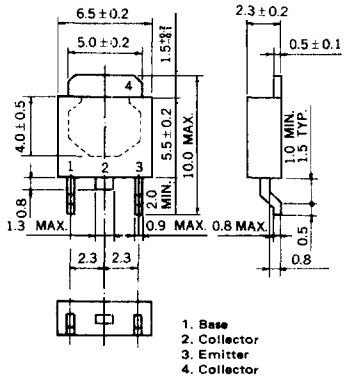
PNP SILICON EPITAXIAL TRANSISTOR
MP-3

DESCRIPTION

2SA1385-Z is designed for Audio Frequency Amplifier and Switching, especially in Hybrid Integrated Circuits.

PACKAGE DIMENSIONS

in millimeters



FEATURES

- Low $V_{CE(sat)}$: $V_{CE(sat)}$ = −0.18 V TYP.
- Complement to 2SC3518-Z

ABSOLUTE MAXIMUM RATINGS

Maximum Voltages and Currents (T_a = 25 °C)			
Collector to Base Voltage	V_{CBO}	−60	V
Collector to Emitter Voltage	V_{CEO}	−60	V
Emitter to Base Voltage	V_{EBO}	−7	V
Collector Current (DC)	I_C	−5	A
Collector Current (Pulse)*	I_C	−7	A
Maximum Power Dissipation			
Total Power Dissipation at T_C = 25 °C	P_T	10	W
Maximum Temperatures			
Junction Temperature	T_j	150	°C
Storage Temperature Range	T_{stg}	−55 to +150	°C

*PW ≤ 10 ms, Duty Cycle ≤ 50 %

ELECTRICAL CHARACTERISTICS (T_a = 25 °C)

CHARACTERISTIC	SYMBOL	MIN.	TYP.	MAX.	UNIT	TEST CONDITIONS
Collector Cutoff Current	I_{CBO}			−10	μA	V_{CB} = −50 V, I_E = 0
Emitter Cutoff Current	I_{EBO}			−10	μA	V_{EB} = −7.0 V, I_C = 0
DC Current Gain	h_{FE1}**	100	200	400		V_{CE} = −1.0 V, I_C = −2.0 A
DC Current Gain	h_{FE2}**	50	100			V_{CE} = −1.0 V, I_C = −5.0 A
Collector Saturation Voltage	$V_{CE(sat)}$**		−0.18	−0.3	V	I_C = −2.0 A, I_B = −0.2 A
Base Saturation Voltage	$V_{BE(sat)}$**			−1.2	V	I_C = −2.0 A, I_B = −0.2 A
Gain Bandwidth Product	f_T		140		MHz	V_{CE} = −10 V, I_C = −0.5 A
Turn-on Time	t_{on}		0.08	1.0	μs	I_C = −2.0 A, V_{CC} ≒ −10 V
Storage Time	t_{stg}		0.55	2.5	μs	R_L = 50 Ω
Fall time	t_f		0.18	1.0	μs	I_{B1} = −I_{B2} = −0.2 A

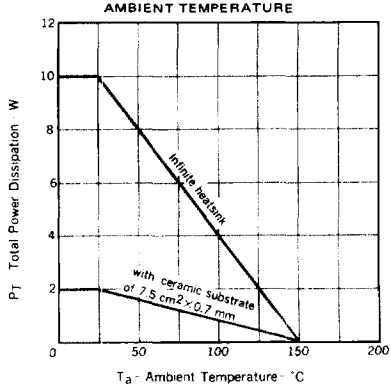
** Pulsed: PW ≤ 350 μs, Duty Cycle ≤ 2 %

h_{FE} Classification

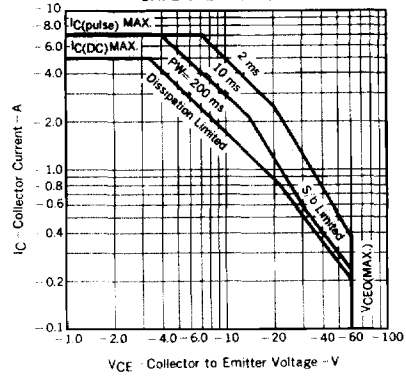
Marking	M	L	K
h_{FE1}	100 to 200	160 to 320	200 to 400

TYPICAL CHARACTERISTICS (T_a = 25 °C)

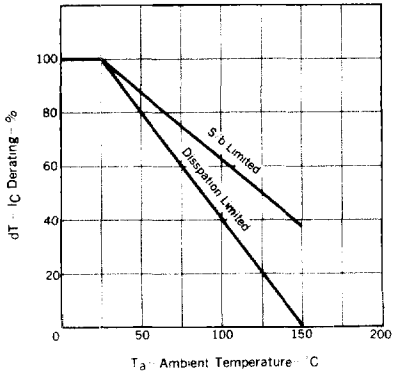
TOTAL POWER DISSIPATION vs. AMBIENT TEMPERATURE



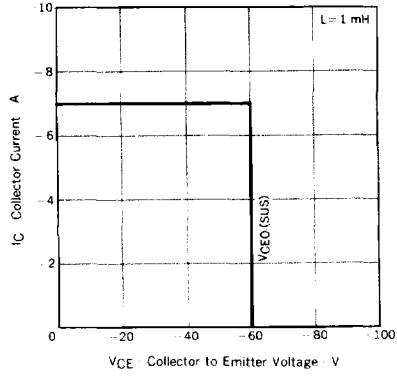
SAFE OPERATING AREA



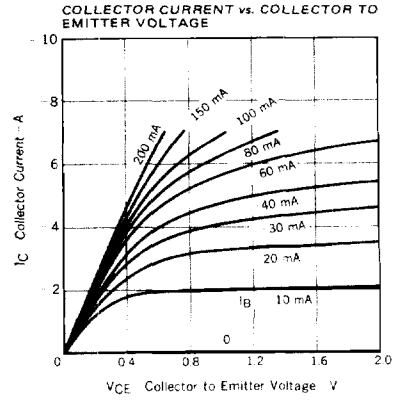
DERATING CURVE OF SAFE OPERATING AREA



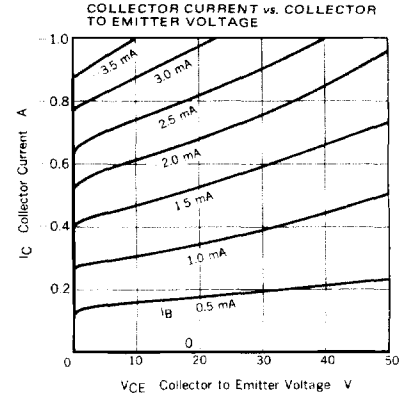
REVERSE BIAS SAFE OPERATING AREA



COLLECTOR CURRENT vs. COLLECTOR TO EMITTER VOLTAGE



COLLECTOR CURRENT vs. COLLECTOR TO EMITTER VOLTAGE



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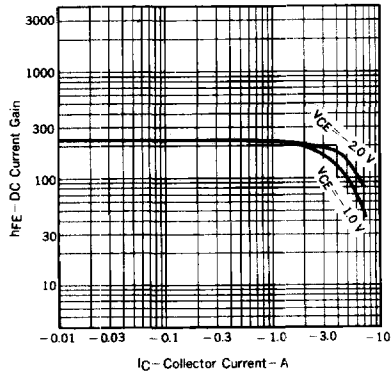
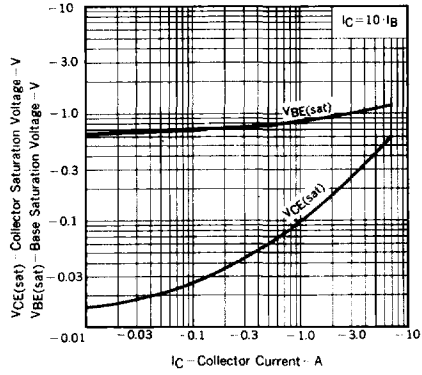
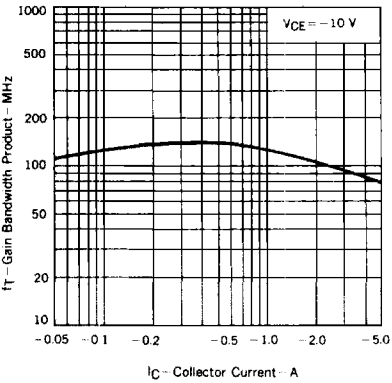
DC CURRENT GAIN vs.
COLLECTOR CURRENT



COLLECTOR AND BASE SATURATION
VOLTAGE vs. COLLECTOR CURRENT



GAIN BANDWIDTH PRODUCT vs.
COLLECTOR CURRENT



SWITCHING TIME vs.
COLLECTOR CURRENT