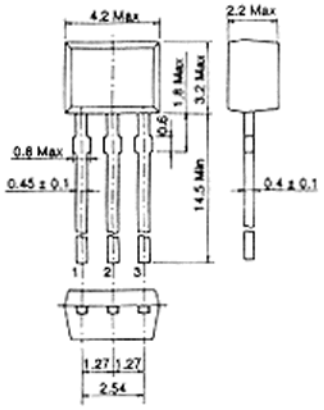
HITACHI

2SC3413

SILICON NPN EPITAXIAL

LOW FREQUENCY LOW NOISE AMPLIFIER · HF AMPLIFIER



(SPAK)

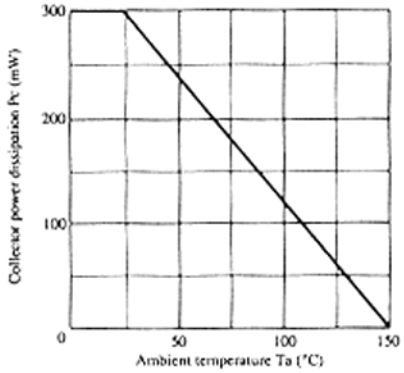
1. Emitter
2. Collector
3. Base

(Dimensions in mm)

■ ABSOLUTE MAXIMUM RATINGS (Ta=25°C)

Item	Symbol	2SC3413	Unit
Collector to base voltage	V_{CBO}	40	V
Collector to emitter voltage	V_{CEO}	30	V
Emitter to base voltage	V_{EBO}	5	V
Collector current	I_C	100	mA
Collector power dissipation	P_C	300	mW
Junction temperature	T_j	150	°C
Storage temperature	T_{stg}	−55 to +150	°C

MAXIMUM COLLECTOR DISSIPATION CURVE



■ ELECTRICAL CHARACTERISTICS (Ta=25°C)

Item	Symbol	Test Condition	min.	typ.	max.	Unit
Collector to base breakdown voltage	$V_{(BR)CBO}$	I_C = 10μA, I_E = 0	40	—	—	V
Collector to emitter breakdown voltage	$V_{(BR)CEO}$	I_C = 1mA, R_{BE} = ∞	30	—	—	V
Emitter to base breakdown voltage	$V_{(BR)EBO}$	I_E = 10μA, I_C = 0	5	—	—	V
Collector cutoff current	I_{CBO}	V_{CB} = 18V, I_E = 0	—	—	0.5	μA
Emitter cutoff current	I_{EBO}	V_{EB} = 2V, I_C = 0	—	—	0.5	μA
DC current transfer ratio	h_{FE}*	V_{CE} = 12V, I_C = 2mA	100	—	500	
Base to emitter voltage	V_{BE}	V_{CE} = 12V, I_C = 2mA	—	—	0.75	V
Collector to emitter saturation voltage	$V_{CE(sat)}$	I_C = 10mA, I_B = 1mA	—	—	0.2	V
Gain bandwidth product	f_T	V_{CE} = 12V, I_C = 2mA	—	200	—	MHz
Collector output capacitance	C_{ob}	V_{CB} = 10V, I_E = 0, f = 1MHz	—	—	3.5	pF
Noise figure	NF	V_{CE} = 6V, I_C = 0.1mA, R_g = 1kΩ, f = 1kHz,	—	1.0	5.0	dB

* The 2SC3413 is grouped by h_{FE} as follows.

B	C	D
100 to 200	160 to 320	250 to 500

■ See characteristic curves of 2SC458 (LG).