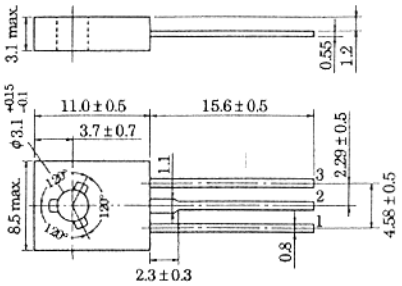
HITACHI

2SD2019

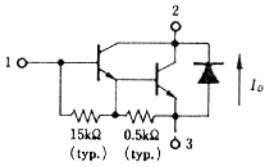
SILICON NPN EPITAXIAL

LOW FREQUENCY POWER AMPLIFIER



1. Emitter
2. Collector
3. Base

(Dimensions in mm)



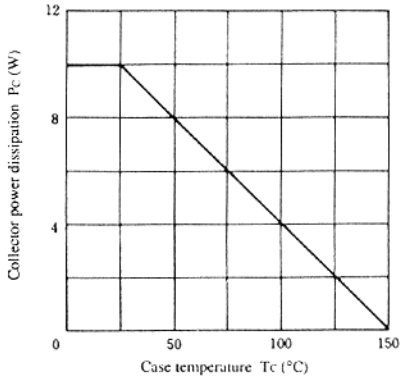
(JEDEC TO-126 MOD.)

■ ABSOLUTE MAXIMUM RATINGS (Ta=25°C)

Item	Symbol	2SD2019	Unit
Collector to base voltage	V_{CBO}	150	V
Collector to emitter voltage	V_{CEO}	80	V
Emitter to base voltage	V_{EBO}	8	V
Collector current	I_C	1.5	A
Collector peak current	$i_{C(peak)}$	3	A
Collector power dissipation	P_C*	10	W
Junction temperature	T_j	150	°C
Storage temperature	T_{stg}	−55 to +150	°C
C to E diode forward current	I_D*	1.5	A

* Value at T_C = 25°C.

MAXIMUM COLLECTOR DISSIPATION CURVE



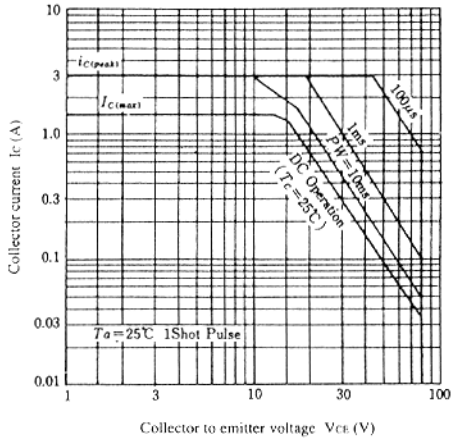
■ ELECTRICAL CHARACTERISTICS (Ta=25°C)

Item	Symbol	Test Condition	min.	typ.	max.	Unit
Collector to base breakdown voltage	$V_{(BR)CBO}$	I_C = 1mA, I_E = 0	150	—	—	V
Collector to emitter breakdown voltage	$V_{(BR)CEO}$	I_C = 10mA, R_{BE} = ∞	80	—	—	V
Emitter to base breakdown voltage	$V_{(BR)EBO}$	I_E = 50mA, I_C = 0	7	—	—	V
Collector cutoff current	I_{CBO}	V_{CB} = 120V, I_E = 0	—	—	5	μA
	I_{CEO}	V_{CE} = 65V, R_{BE} = ∞	—	—	5	μA
DC current transfer ratio	h_{FE}	V_{CE} = 2V, I_C = 0.15A*	2000	—	—	
	h_{FE}	V_{CE} = 2V, I_C = 1A*	5000	—	30000	
	h_{FE}	V_{CE} = 2V, I_C = 1.5A*	1000	—	—	
Collector to emitter saturation voltage	$V_{CE(sat)}$	I_C = 1A, I_B = 1mA*	—	—	1.5	V
Base to emitter saturation voltage	$V_{BE(sat)}$	I_C = 1A, I_B = 1mA*	—	—	2.0	V
C to E diode forward voltage	V_D	I_D = 1.5A*	—	—	3.0	V

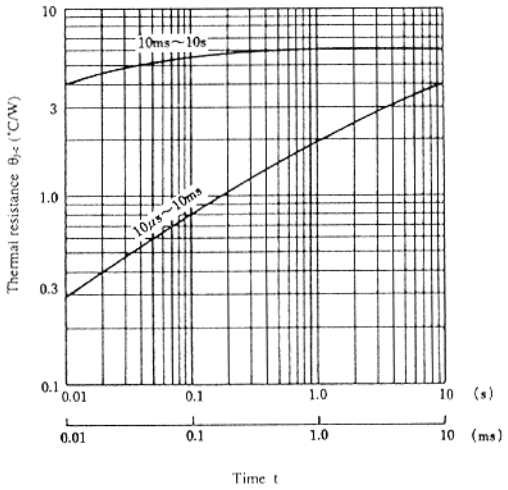
* Pulse Test.

2SD2019

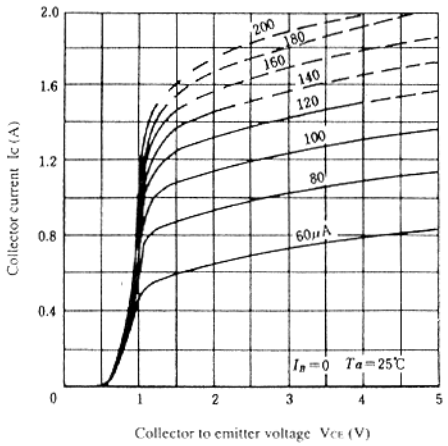
AREA OF SAFE OPERATION



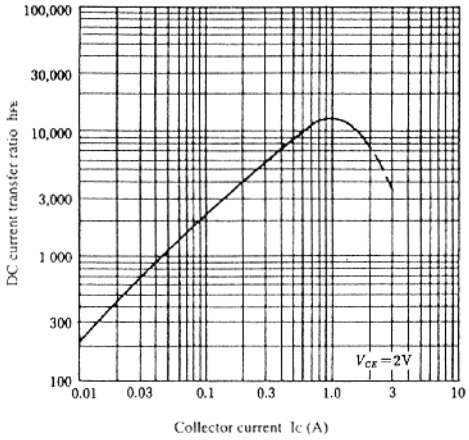
TRANSIENT THERMAL RESISTANCE



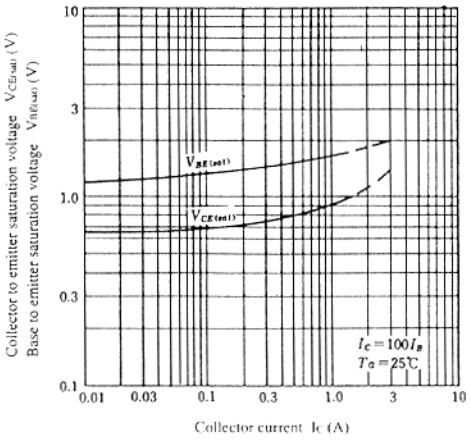
TYPICAL OUTPUT CHARACTERISTICS



DC CURRENT TRANSFER RATIO VS. COLLECTOR CURRENT



SATURATION VOLTAGE VS. COLLECTOR CURRENT



TYPICAL CHARACTERISTICS OF EMITTER TO COLLECTOR DIODE