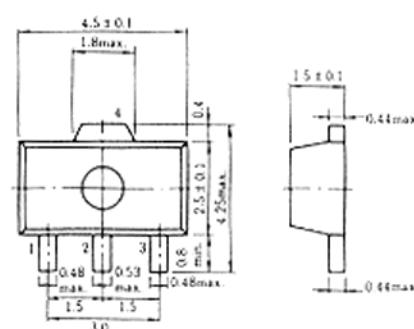


2SD1946

SILICON NPN EPITAXIAL

LOW FREQUENCY AMPLIFIER



1. Base
 2. Collector
 3. Emitter
 4. Collector
- (Dimensions in mm)

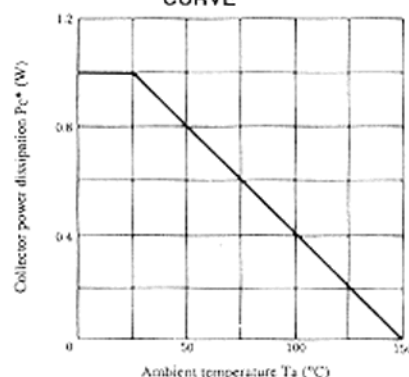
(UPAK)

■ ABSOLUTE MAXIMUM RATINGS (Ta=25°C)

Item	Symbol	2SD1946	Unit
Collector to base voltage	V_{CB0}	15	V
Collector to emitter voltage	V_{CE0}	10	V
Emitter to base voltage	V_{EB0}	5	V
Collector current	I_C	1	A
Collector peak current	$i_{C(peak)}$	2	A
Collector power dissipation	P_C^*	1	W
Junction temperature	T_j	150	°C
Storage temperature	T_{stg}	-55 to +150	°C

* Value on the alumina ceramic board (12.5 x 20 x 0.7mm)

MAXIMUM COLLECTOR DISSIPATION CURVE



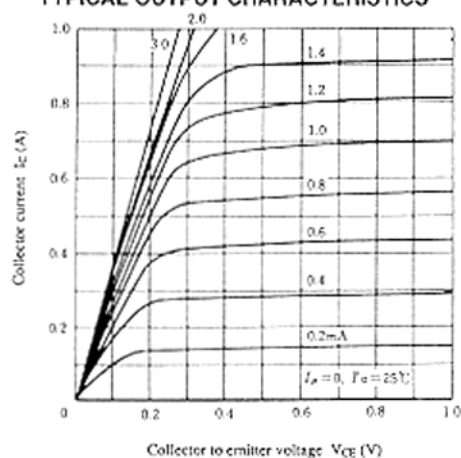
■ ELECTRICAL CHARACTERISTICS (Ta=25°C)

Item	Symbol	Test Condition	min.	typ.	max.	Unit
Collector to base breakdown voltage	$V_{(BR)CBO}$	$I_C = 10\mu A, I_E = 0$	15	—	—	V
Collector to emitter breakdown voltage	$V_{(BR)CEO}$	$I_C = 1mA, R_{BE} = \infty$	10	—	—	V
Emitter to base breakdown voltage	$V_{(BR)EBO}$	$I_E = 10\mu A, I_C = 0$	5	—	—	V
Collector cutoff current	I_{CBO}	$V_{CB} = 12V, I_E = 0$	—	—	0.1	μA
	I_{CEO}	$V_{CE} = 8V, R_{BE} = \infty$	—	—	0.5	μA
Emitter cutoff current	I_{EBO}	$V_{EB} = 4V, I_C = 0$	—	—	0.1	μA
DC current transfer ratio	h_{FE1}	$V_{CE} = 0.3V, I_C = 0.5A^*$	400	—	2000	—
	h_{FE2}	$V_{CE} = 0.3V, I_C = 1A^*$	400	—	—	—
Collector to emitter saturation voltage	$V_{CE(sat)}$	$I_C = 0.5A, I_B = 2mA^*$	—	—	0.3	V
	$V_{CE(sat)}$	$I_C = 1A, I_B = 3mA^*$	—	—	0.33	V
Base to emitter saturation voltage	$V_{BE(sat)}$	$I_C = 0.5A, I_B = 2mA^*$	—	—	1.1	V

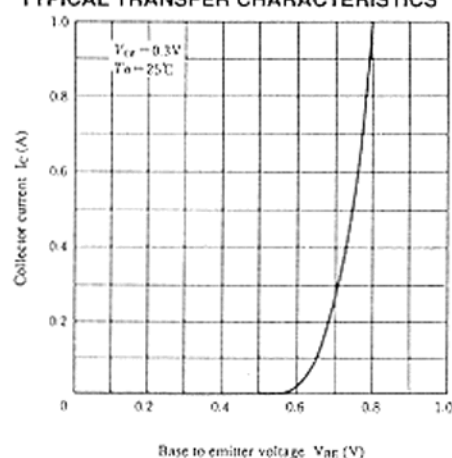
* Pulse Test

** Marking is [DS].

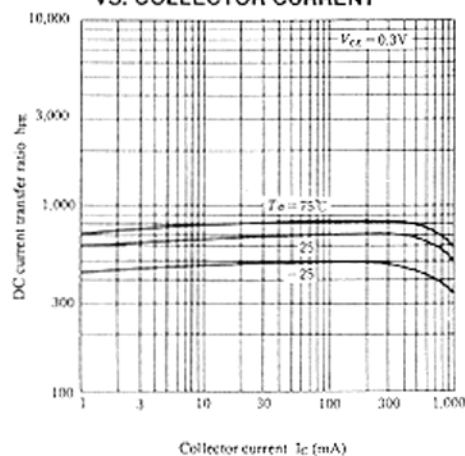
TYPICAL OUTPUT CHARACTERISTICS



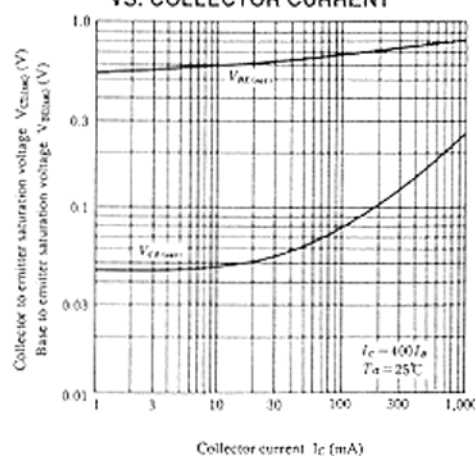
TYPICAL TRANSFER CHARACTERISTICS



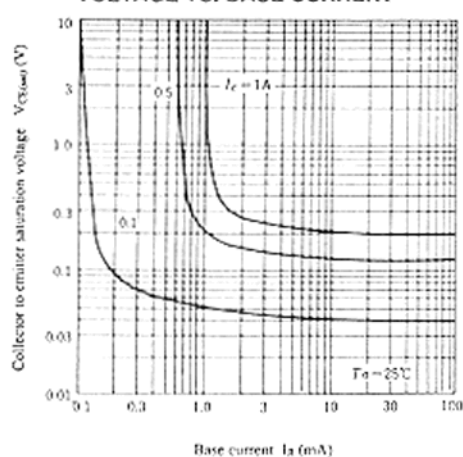
DC CURRENT TRANSFER RATIO VS. COLLECTOR CURRENT



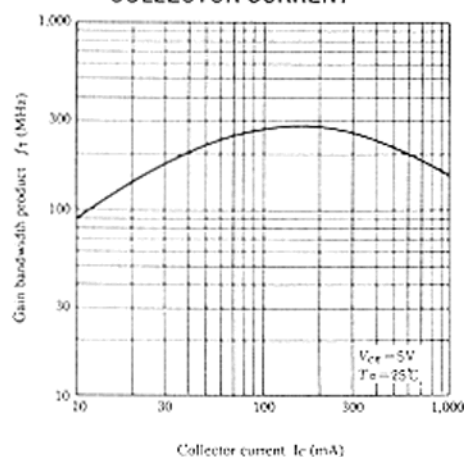
SATURATION VOLTAGE VS. COLLECTOR CURRENT



COLLECTOR TO EMITTER SATURATION VOLTAGE VS. BASE CURRENT



GAIN BANDWIDTH PRODUCT VS. COLLECTOR CURRENT



2SD1946

COLLECTOR OUTPUT CAPACITANCE VS.
COLLECTOR TO BASE VOLTAGE