
2SD1974

Silicon NPN Epitaxial

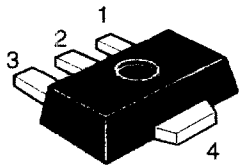
HITACHI

Application

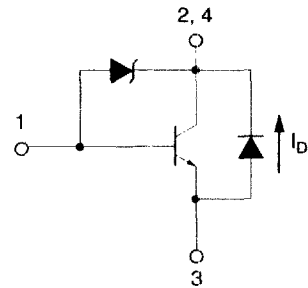
Low frequency power amplifier

Outline

UPAK



1. Base
2. Collector
3. Emitter
4. Collector (Flange)



Absolute Maximum Ratings (Ta = 25°C)

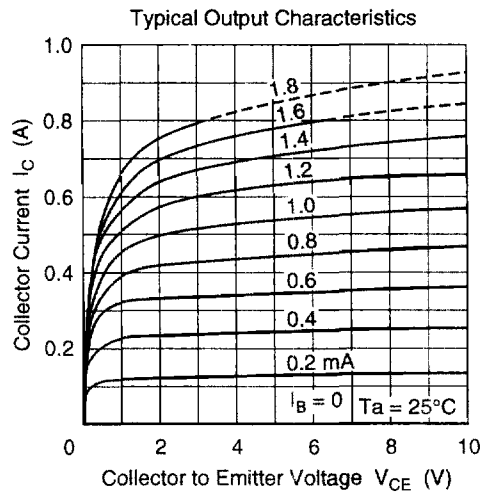
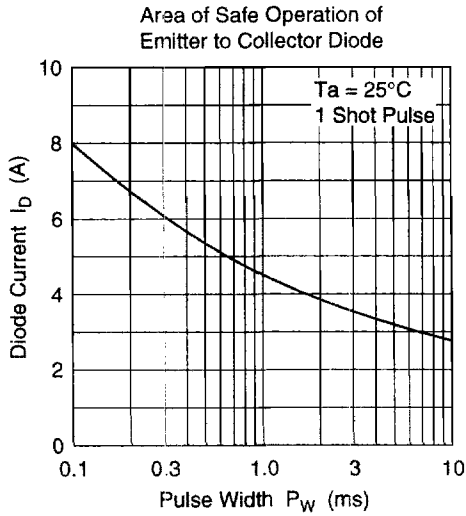
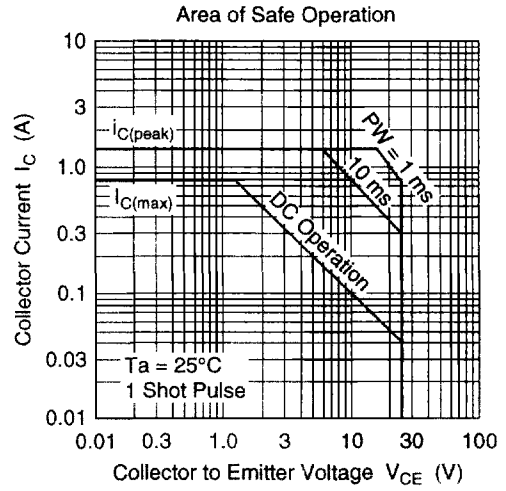
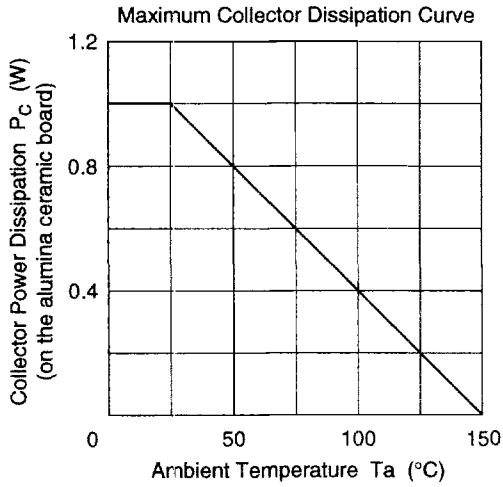
Item	Symbol	Ratings	Unit
Collector to base voltage	V_{CBO}	25	V
Collector to emitter voltage	V_{CEO}	25	V
Emitter to base voltage	V_{EBO}	6	V
Collector current	I_C	0.8	A
Collector peak current	$i_{C(\text{peak})}$	1.5	A
E to C diode forward current	I_D	0.6	A
Collector power dissipation	P_C^{*1}	1.0	W
Junction temperature	T_j	150	°C
Storage temperature	T_{stg}	-55 to +150	°C

Note: 1. Value on the alumina ceramic board (12.5 x 20 x 0.7 mm)

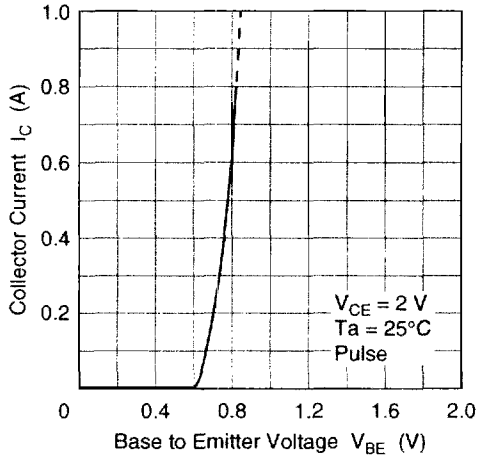
Electrical Characteristics (Ta = 25°C)

Item	Symbol	Min	Typ	Max	Unit	Test conditions
Collector to base breakdown voltage	$V_{(BR)CBO}$	25	—	—	V	$I_C = 10 \mu\text{A}$, $I_E = 0$
Collector to emitter breakdown voltage	$V_{(BR)CEO}$	25	—	35	V	$I_C = 1 \text{ mA}$, $R_{BE} = \infty$
Collector to emitter sustaining voltage	$V_{CEO(\text{sus})}$	25	—	35	V	$I_C = 0.8 \text{ A}$, $R_{BE} = \infty$, $L = 20 \text{ mH}$
Emitter to base breakdown voltage	$V_{(BR)EBO}$	6	—	—	V	$I_E = 10 \mu\text{A}$, $I_C = 0$
Collector cutoff current	I_{CBO}	—	—	0.2	μA	$V_{CB} = 20 \text{ V}$, $I_E = 0$
	I_{CEO}	—	—	0.5	μA	$V_{CE} = 20 \text{ V}$, $R_{BE} = \infty$
Emitter cutoff current	I_{EBO}	—	—	0.2	μA	$V_{EB} = 5 \text{ V}$, $I_C = 0$
DC current transfer ratio	h_{FE}	250	—	1200		$V_{CE} = 2 \text{ V}$, $I_C = 0.1 \text{ A}^{*1}$
Collector to emitter saturation voltage	$V_{CE(\text{sat})}$	—	—	0.4	V	$I_C = 0.8 \text{ A}$, $I_B = 80 \text{ mA}^{*1}$
E to C diode forward voltage	V_D	—	—	1.5	V	$I_D = 0.6 \text{ A}^{*1}$

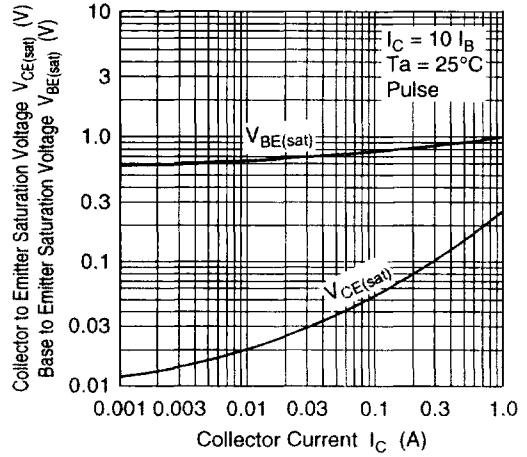
Notes: 1. Pulse test
2. Marking is 'ES'.



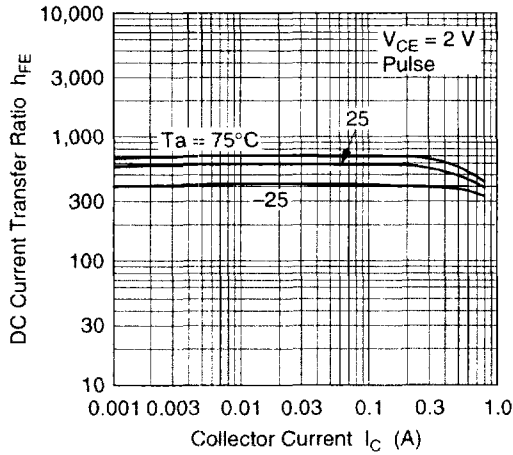
Typical Transfer Characteristics



Saturation Voltage vs. Collector Current



DC Current Transfer Ratio vs. Collector Current



Typical Characteristics of Emitter to Collector Diode

