

2SD2193

Silicon NPN Epitaxial
Low Frequency Power Amplifier

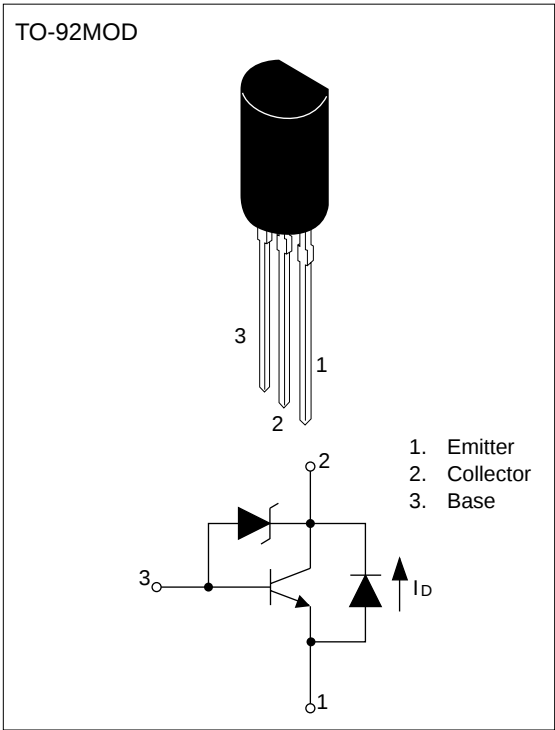
Table 1 Absolute Maximum Ratings
(Ta = 25°C)

Item	Symbol	Rating	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	$i_{C(peak)}$	1.5	A
C to E diode forward current	I_D	0.8	A
Collector power dissipation	P_C	0.9	W
Junction temperature	T_j	150	°C
Storage temperature	T_{stg}	-55 to +150	°C

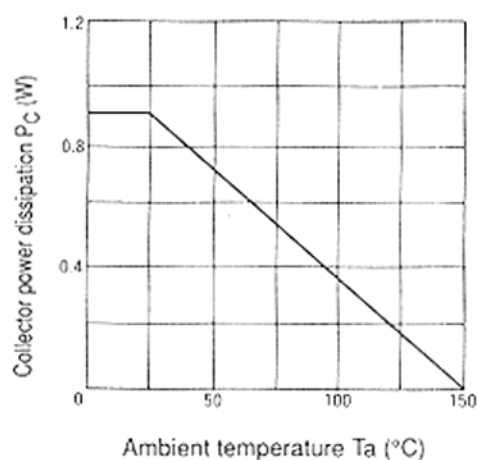
Table 2 Electrical Characteristics (Ta = 25°C)

Item	Symbol	Min	Typ	Max	Unit	Test condition
Collector to base breakdown voltage (Zener breakdown voltage)	$V_{(BR)CBO}$ (V_Z)	25	—	—	V	$I_C = 10\ \mu A, I_E = 0$
Collector to emitter breakdown voltage	$V_{(BR)CEO}$	25	—	35	V	$I_C = 1\ mA, R_{BE} = \infty$
Collector to emitter sustaining voltage	$V_{CEO(sus)}$	26	—	—	V	$I_C = 0.8\ A, R_{BE} = \infty,$ $L = 20\ mH$
Emitter to base breakdown voltage	$V_{(BR)EBO}$	6	—	—	V	$I_E = 10\ \mu A, I_C = 0$
Collector cutoff current	I_{CBO}	—	—	0.2	μA	$V_{CB} = 20\ V, I_E = 0$
Collector cutoff current	I_{CEO}	—	—	0.5	μA	$V_{CE} = 20\ V, R_{BE} = \infty$
Emitter cutoff current	I_{EBO}	—	—	0.2	μA	$V_{EB} = 5\ V, I_C = 0$
DC current transfer ratio	h_{FE}	800	—	—	—	$V_{CE} = 2\ V, I_C = 0.1\ A^*$
Collector to emitter saturation voltage	$V_{CE(sat)}$	—	—	0.3	V	$I_C = 0.8\ A, I_B = 80\ mA^*$
E to C diode forward voltage	V_D	—	—	1.1	V	$I_D = 0.8\ A^*$

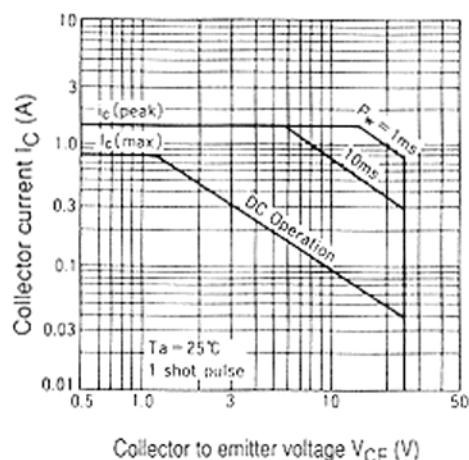
* Pulse test



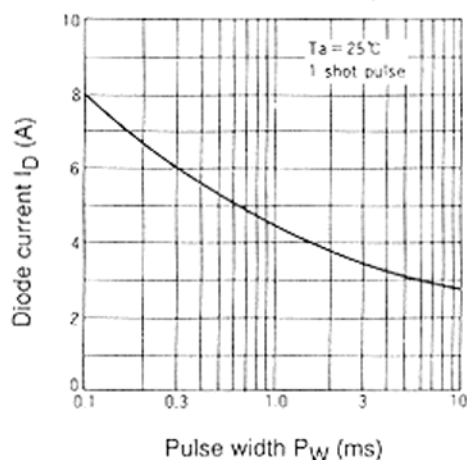
Maximum collector dissipation curve



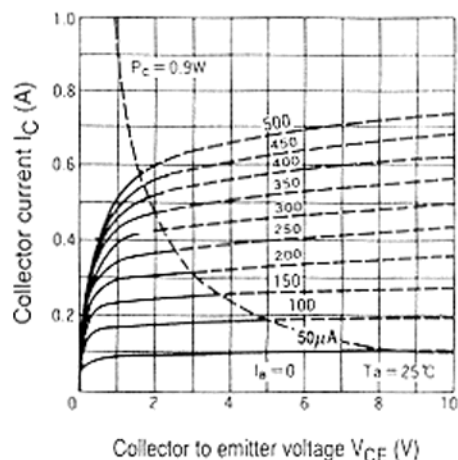
Area of safe operation



Area of safe operation of emitter to collector diode

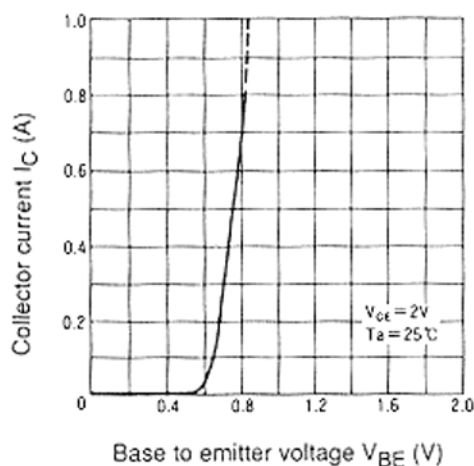


Typical output characteristics

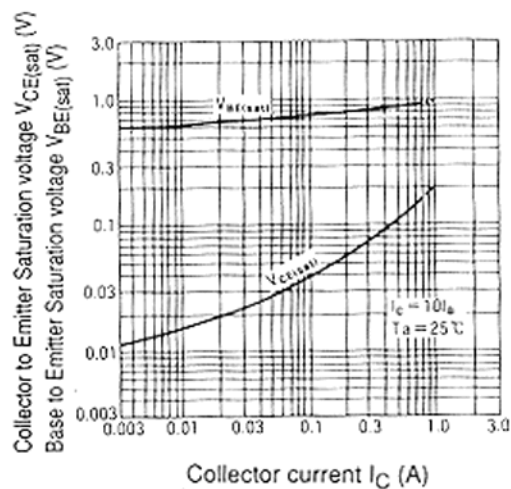


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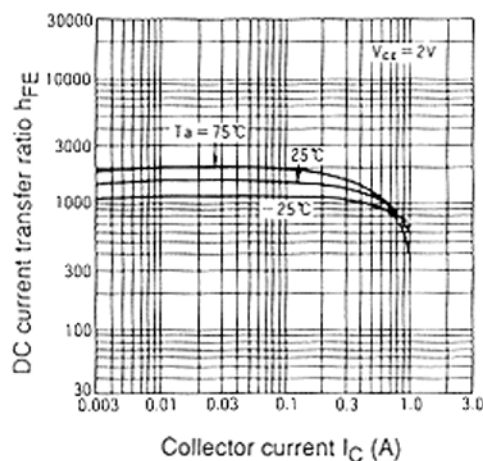
Typical transfer characteristics



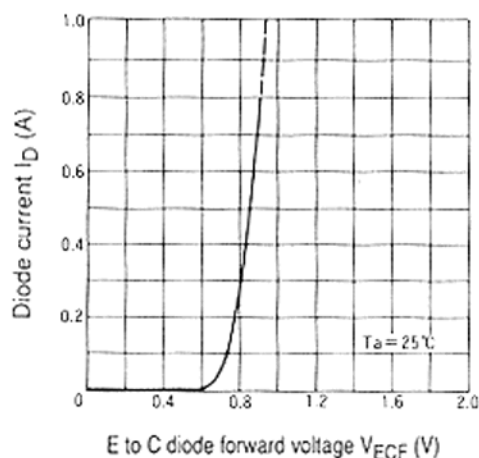
Saturation voltage vs. collector current



DC current transfer ratio vs. collector current



Typical characteristics of emitter to collector diode



Collector output capacitance
vs. collector to base voltage

