2SD2102

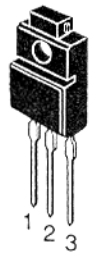
Silicon NPN Triple Diffused
Low Frequency Power Amplifier

Absolute Maximum Ratings (Ta = 25°C)

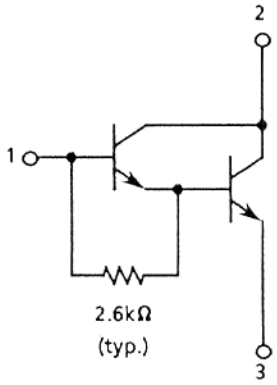
Item	Symbol	Rating	Unit
Collector to base voltage	V_{CBO}	60	V
Collector to emitter voltage	V_{CEO}	60	V
Emitter to base voltage	V_{EBO}	7	V
Collector current	I_C	4	A
Collector peak current	$i_{C(peak)}$	8	A
Collector power dissipation	P_C	2	W
	P_C*1	25	
Junction temperature	Tj	150	°C
Storage temperature	Tstg	–55 to +150	°C

Note: 1. Value at T_C = 25°C.

TO-220FM



1. Base
2. Collector
3. Emitter



Electrical Characteristics (Ta = 25°C)

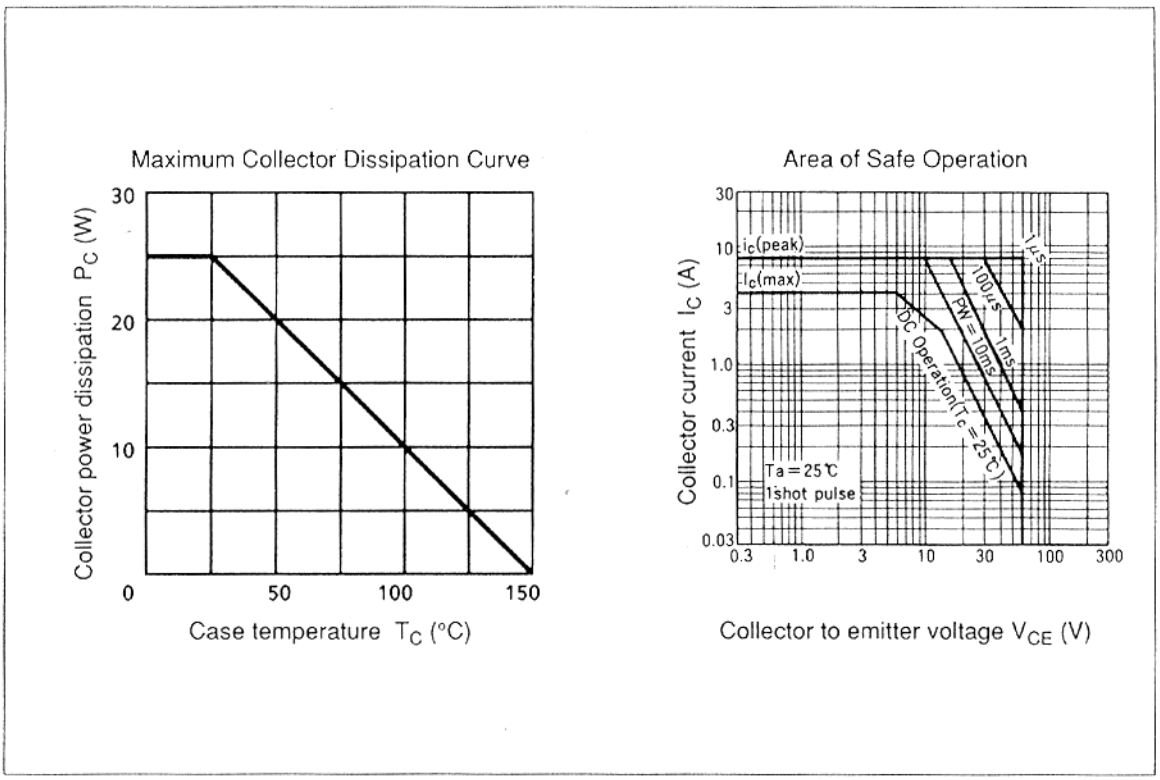
Item	Symbol	Min	Typ	Max	Unit	Test condition
Collector to base breakdown voltage	$V_{(BR)CBO}$	60	—	—	V	I_C = 0.1 mA, I_E = 0
Collector to emitter breakdown voltage	$V_{(BR)CEO}$	60	—	—	V	I_C = 25 mA, R_{BE} = ∞
Emitter to base breakdown voltage	$V_{(BR)EBO}$	7	—	—	V	I_E = 50 mA, I_C = 0
Collector cutoff current	I_{CBO}	—	—	10	μA	V_{CB} = 50 V, I_E = 0
	I_{CEO}	—	—	10		V_{CE} = 50 V, R_{BE} = ∞
DC current transfer ratio	h_{FE}	1000	—	20000		V_{CE} = 3 V, I_C = 2 A*1
Collector to emitter saturation voltage	$V_{CE(sat)1}$	—	—	1.5	V	I_C = 2 A, I_B = 4 mA*1
	$V_{CE(sat)2}$	—	—	3.0		I_C = 4 A, I_B = 40 mA*1

2SD2102

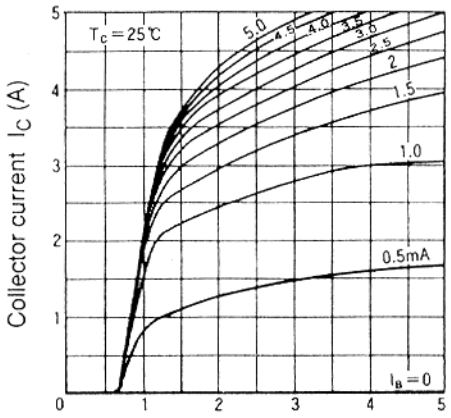
Electrical Characteristics (Ta = 25°C) (cont)

Item	Symbol	Min	Typ	Max	Unit	Test condition
Base to emitter saturation voltage	$V_{BE(sat)1}$	—	—	2.0	V	I_C = 2 A, I_B = 4 mA*1
	$V_{BE(sat)2}$	—	—	3.5		I_C = 4 A, I_B = 40 mA*1

Note: 1. Pulse Test.
See switching characteristic curve of 2SD1558.

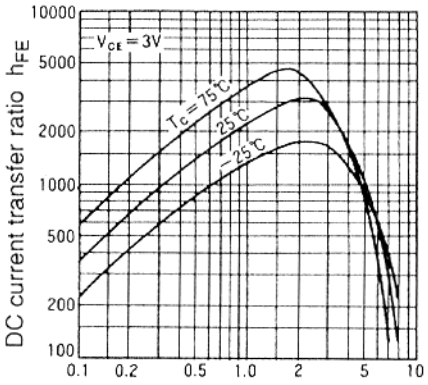


Typical Output Characteristics



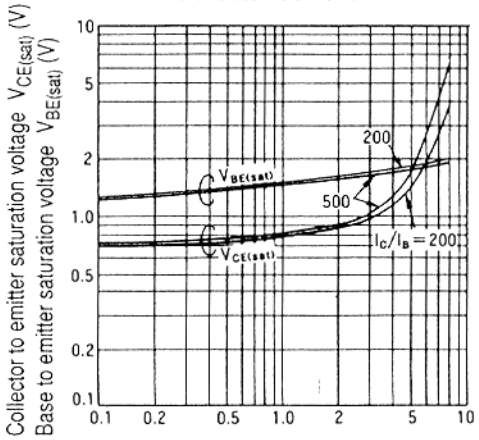
Collector to emitter voltage V_{CE} (V)

DC Current Transfer Ratio vs. Collector Current



Collector current I_C (A)

Saturation Voltage vs. Collector Current



Collector current I_C (A)

2SD2102