

TOSHIBA Transistor Silicon NPN Triple Diffused Type

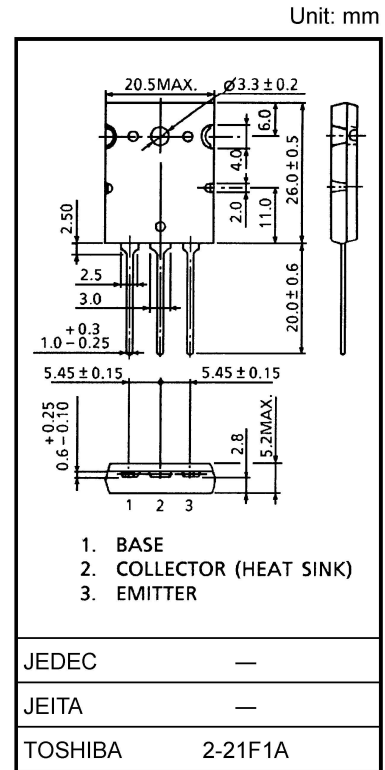
2SC5200

Power Amplifier Applications

- High breakdown voltage: $V_{CEO} = 230 \text{ V (min)}$
- Complementary to 2SA1943
- Suitable for use in 100-W high fidelity audio amplifier's output stage

Maximum Ratings ($T_c = 25^\circ\text{C}$)

Characteristics	Symbol	Rating	Unit
Collector-base voltage	V_{CBO}	230	V
Collector-emitter voltage	V_{CEO}	230	V
Emitter-base voltage	V_{EBO}	5	V
Collector current	I_C	15	A
Base current	I_B	1.5	A
Collector power dissipation ($T_c = 25^\circ\text{C}$)	P_C	150	W
Junction temperature	T_j	150	$^\circ\text{C}$
Storage temperature range	T_{stg}	-55 to 150	$^\circ\text{C}$

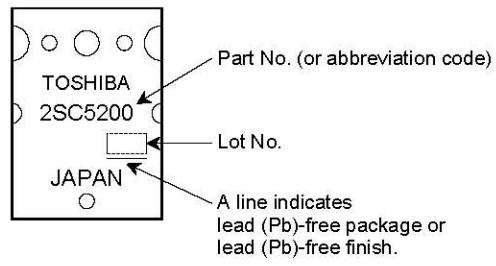


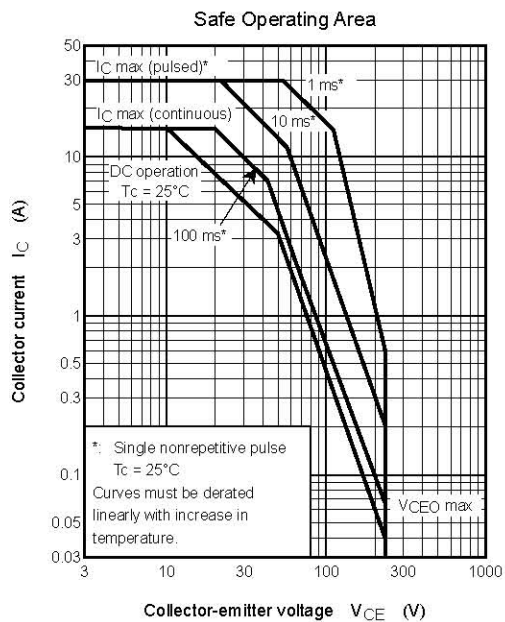
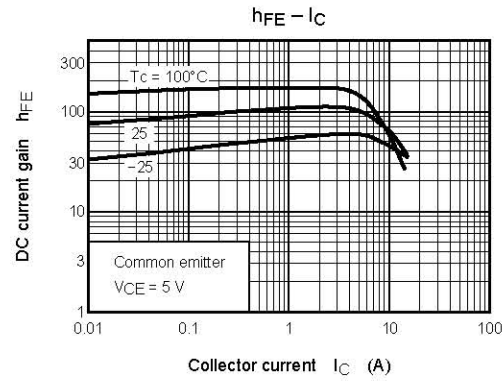
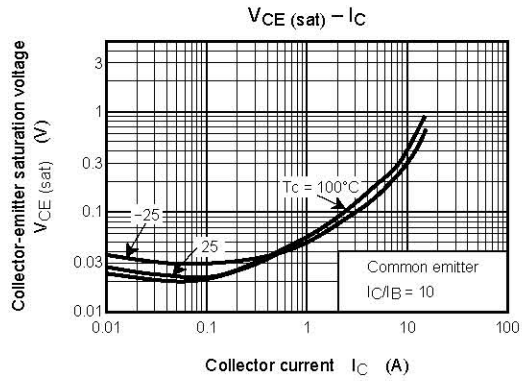
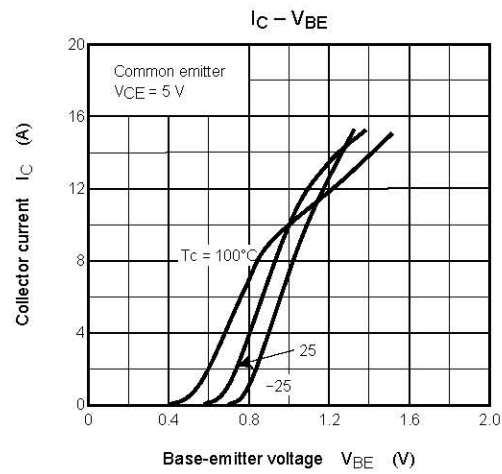
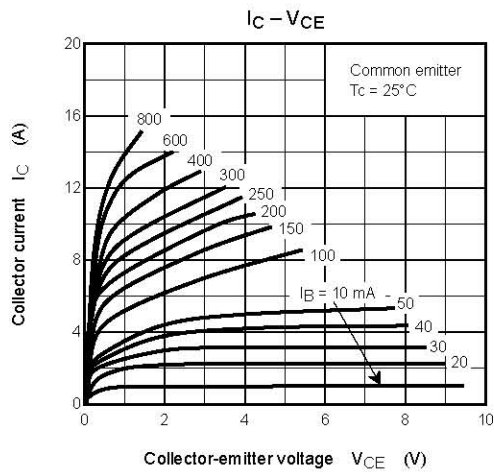
Electrical Characteristics ($T_c = 25^\circ\text{C}$)

Weight: 9.75 g (typ.)

Characteristics	Symbol	Test Condition	Min	Typ.	Max	Unit
Collector cut-off current	I_{CBO}	$V_{CB} = 230 \text{ V}, I_E = 0$	—	—	5.0	μA
Emitter cut-off current	I_{EBO}	$V_{EB} = 5 \text{ V}, I_C = 0$	—	—	5.0	μA
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C = 50 \text{ mA}, I_B = 0$	230	—	—	V
DC current gain	$h_{FE(1)}$ (Note)	$V_{CE} = 5 \text{ V}, I_C = 1 \text{ A}$	55	—	160	
	$h_{FE(2)}$	$V_{CE} = 5 \text{ V}, I_C = 7 \text{ A}$	35	60	—	
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = 8 \text{ A}, I_B = 0.8 \text{ A}$	—	0.4	3.0	V
Base-emitter voltage	V_{BE}	$V_{CE} = 5 \text{ V}, I_C = 7 \text{ A}$	—	1.0	1.5	V
Transition frequency	f_T	$V_{CE} = 5 \text{ V}, I_C = 1 \text{ A}$	—	30	—	MHz
Collector output capacitance	C_{ob}	$V_{CB} = 10 \text{ V}, I_E = 0, f = 1 \text{ MHz}$	—	200	—	pF

Note: $h_{FE(1)}$ classification R: 55 to 110, O: 80 to 160

Marking



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TOSHIBA TRANSISTOR SILICON PNP TRIPLE DIFFUSED TYPE

2SA1943

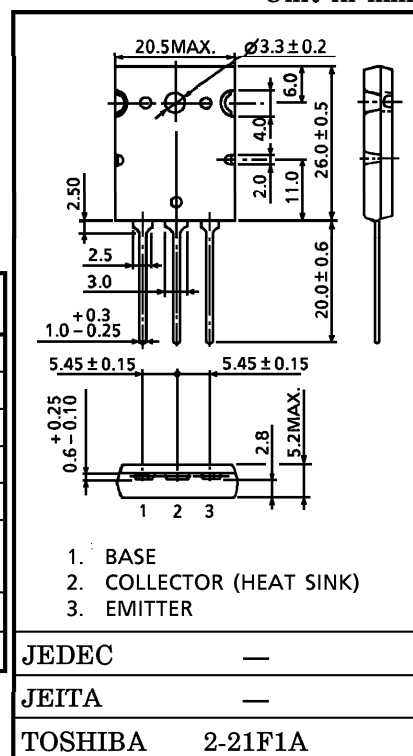
POWER AMPLIFIER APPLICATIONS

- Complementary to 2SC5200
- Recommended for 100 W High Fidelity Audio Frequency Amplifier Output Stage.

MAXIMUM RATINGS ($T_c = 25^\circ\text{C}$)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector-Base Voltage	V_{CB0}	-230	V
Collector-Emitter Voltage	V_{CE0}	-230	V
Emitter-Base Voltage	V_{EB0}	-5	V
Collector Current	I_C	-15	A
Base Current	I_B	-1.5	A
Collector Power Dissipation ($T_c = 25^\circ\text{C}$)	P_C	150	W
Junction Temperature	T_j	150	$^\circ\text{C}$
Storage Temperature Range	T_{stg}	-55~150	$^\circ\text{C}$

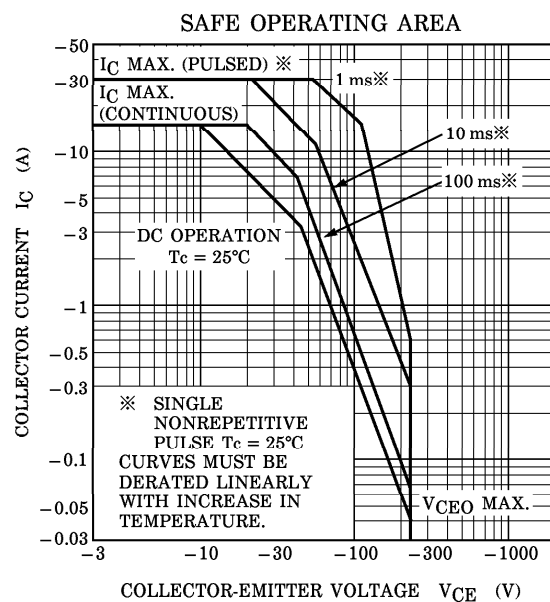
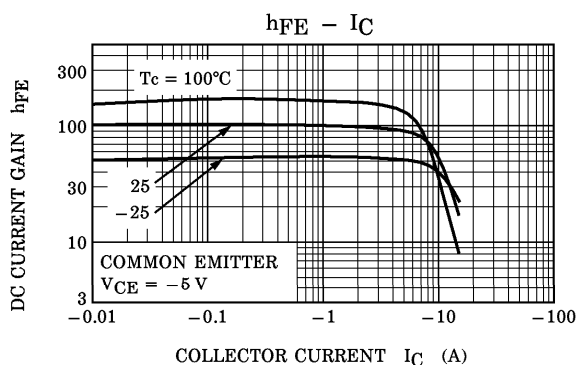
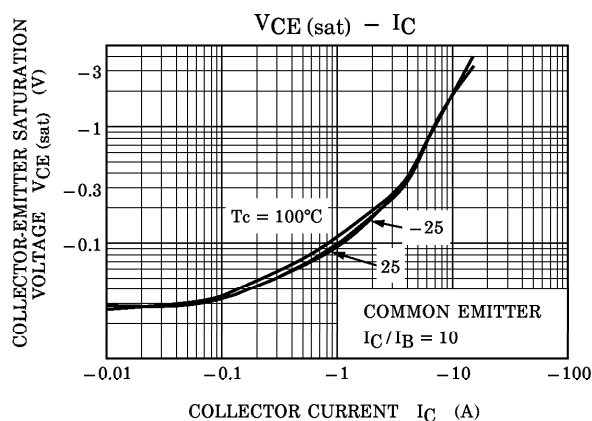
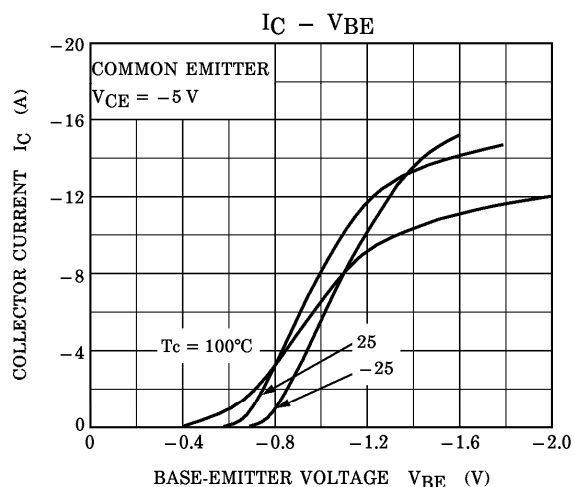
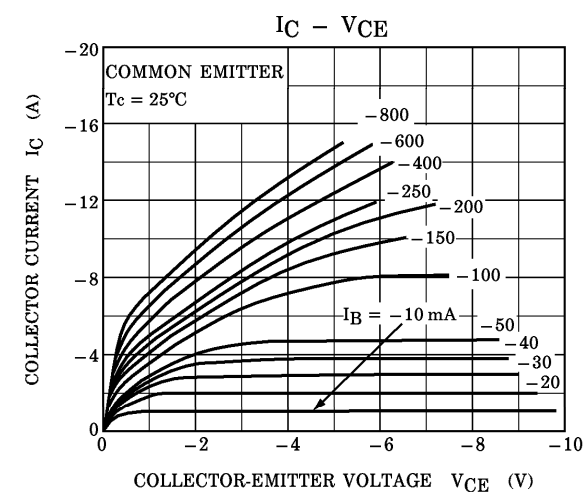
Unit in mm

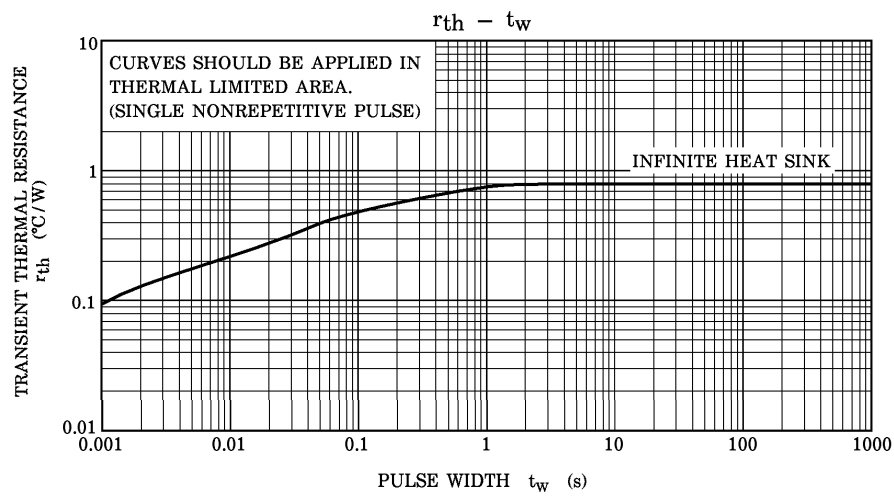
ELECTRICAL CHARACTERISTICS ($T_c = 25^\circ\text{C}$)

Weight : 9.75 g (Typ.)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current	I_{CBO}	$V_{CB} = -230\text{ V}, I_E = 0$	—	—	-5.0	μA
Emitter Cut-off Current	I_{EBO}	$V_{EB} = -5\text{ V}, I_C = 0$	—	—	-5.0	μA
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C = -50\text{ mA}, I_B = 0$	-230	—	—	V
DC Current Gain	$h_{FE(1)}$ (Note)	$V_{CE} = -5\text{ V}, I_C = -1\text{ A}$	55	—	160	
	$h_{FE(2)}$	$V_{CE} = -5\text{ V}, I_C = -7\text{ A}$	35	60	—	
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = -8\text{ A}, I_B = -0.8\text{ A}$	—	-1.5	-3.0	V
Base-Emitter Voltage	V_{BE}	$V_{CE} = -5\text{ V}, I_C = -7\text{ A}$	—	-1.0	-1.5	V
Transition Frequency	f_T	$V_{CE} = -5\text{ V}, I_C = -1\text{ A}$	—	30	—	MHz
Collector Output Capacitance	C_{ob}	$V_{CB} = -10\text{ V}, I_E = 0,$ $f = 1\text{ MHz}$	—	360	—	pF

(Note) : $h_{FE(1)}$ Classification R : 55~110, O : 80~160





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