

TOSHIBA TRANSISTOR SILICON NPN TRIPLE DIFFUSED TYPE

2SD2012

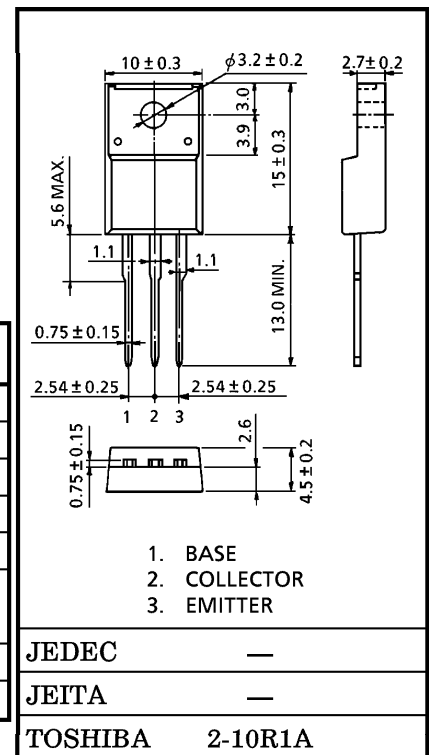
AUDIO FREQUENCY POWER AMPLIFIER APPLICATIONS

Unit in mm

- High DC Current Gain : $h_{FE(1)} = 100$ (Min.)
- Low Saturation Voltage : $V_{CE(sat)} = 1.0$ V (Max.)
- High Power Dissipation : $P_C = 25$ W ($T_c = 25^\circ\text{C}$)

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

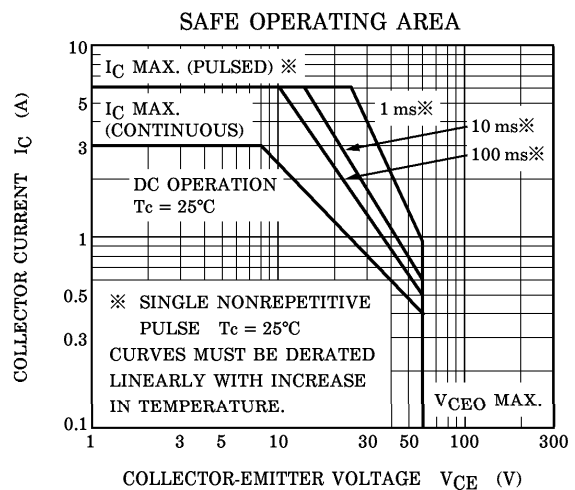
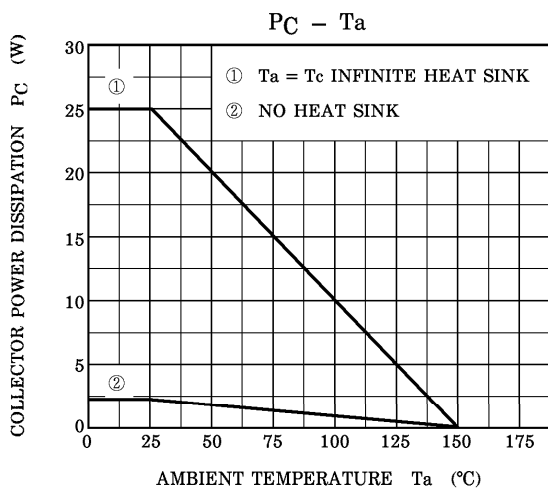
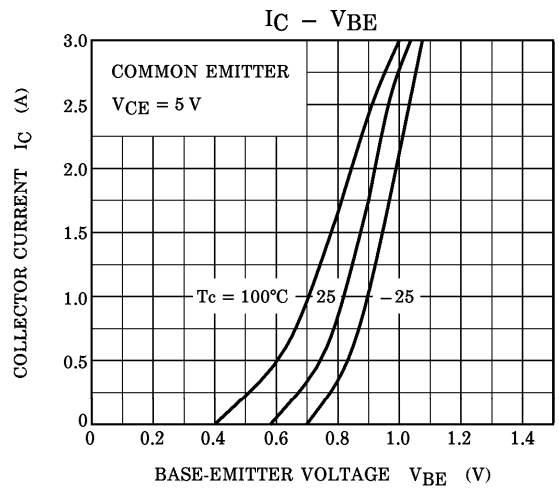
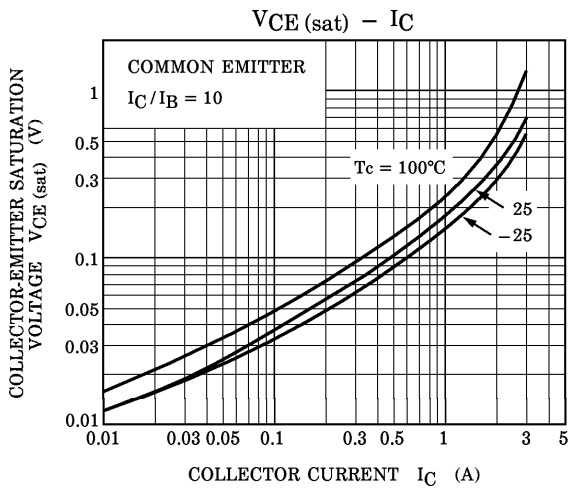
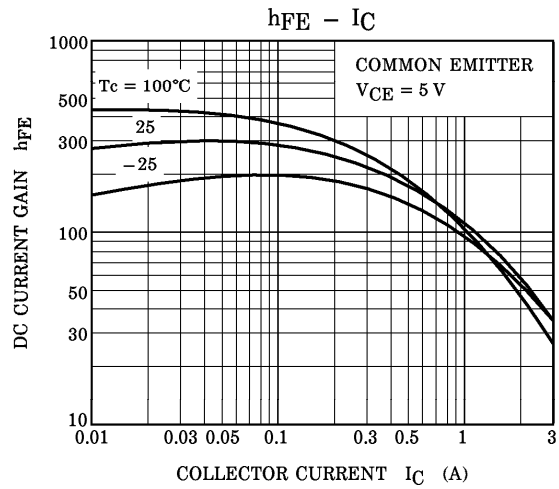
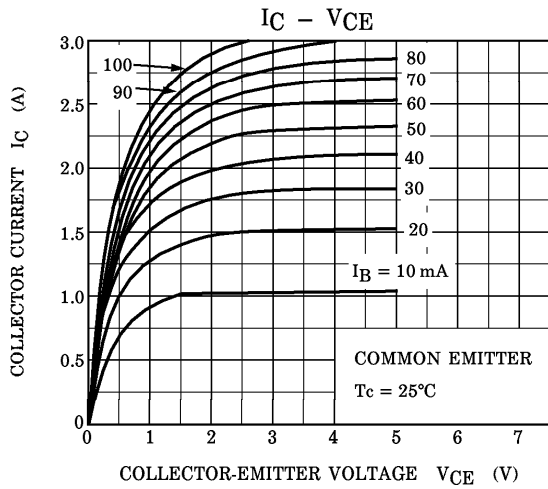
CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector-Base Voltage	V_{CBO}	60	V
Collector-Emitter Voltage	V_{CEO}	60	V
Emitter-Base Voltage	V_{EBO}	7	V
Collector Current	I_C	3	A
Base Current	I_B	0.5	A
Collector Power Dissipation	P_C	$T_a = 25^\circ\text{C}$ 2.0	W
		$T_c = 25^\circ\text{C}$ 25	
Junction Temperature	T_j	150	$^\circ\text{C}$
Storage Temperature Range	T_{stg}	-55~150	$^\circ\text{C}$

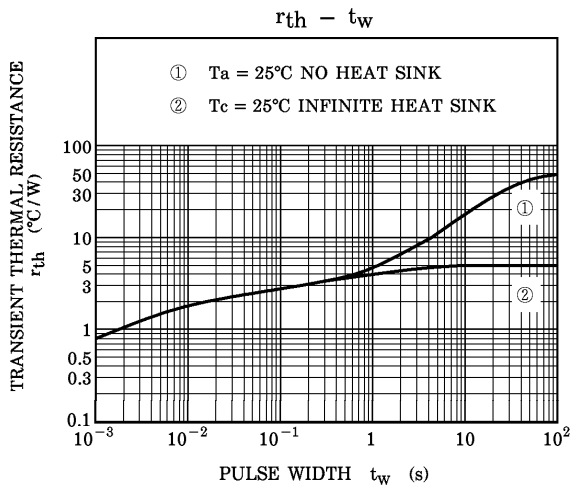


Weight : 1.7 g (Typ.)

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

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current	I_{CBO}	$V_{CB} = 60$ V, $I_E = 0$	—	—	100	μA
Emitter Cut-off Current	I_{EBO}	$V_{EB} = 7$ V, $I_C = 0$	—	—	100	μA
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C = 50$ mA, $I_B = 0$	60	—	—	V
DC Current Gain	$h_{FE(1)}$	$V_{CE} = 5$ V, $I_C = 0.5$ A	100	—	320	
	$h_{FE(2)}$	$V_{CE} = 5$ V, $I_C = 2$ A	20	—	—	
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = 2$ A, $I_B = 0.2$ A	—	0.4	1.0	V
Base-Emitter Voltage	V_{BE}	$V_{CE} = 5$ V, $I_C = 0.5$ A	—	0.75	1.0	V
Transition Frequency	f_T	$V_{CE} = 5$ V, $I_C = 0.5$ A	—	3	—	MHz
Collector Output Capacitance	C_{ob}	$V_{CB} = 10$ V, $I_E = 0$, $f = 1$ MHz	—	35	—	pF





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