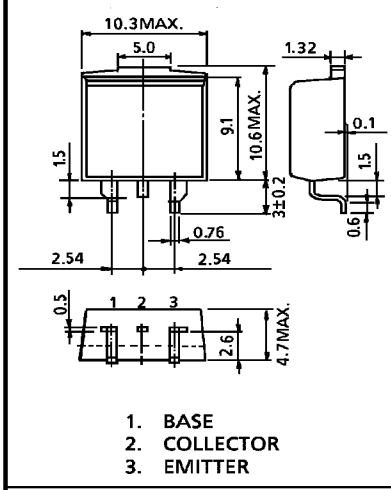
TOSHIBA TRANSISTOR SILICON PNP TRIPLE DIFFUSED TYPE

2SB1667(SM)

AUDIO FREQUENCY POWER AMPLIFIER APPLICATIONS

Unit in mm

- Low Collector Saturation Voltage
  : $V_{CE\,(sat)} = -1.7$ V (Max.) ($I_C = -3$ A, $I_B = -0.3$ A)



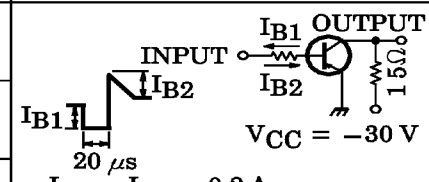
1. BASE
2. COLLECTOR
3. EMITTER

JEDEC	—
EIAJ	—
TOSHIBA	2-10S2

MAXIMUM RATINGS (Ta = 25°C)

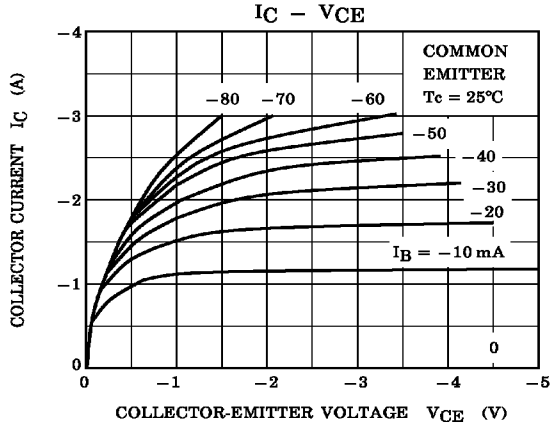
CHARACTERISTIC		SYMBOL	RATING	UNIT
Collector-Base Voltage		V_{CBO}	−60	V
Collector-Emitter Voltage		V_{CEO}	−60	V
Emitter-Base Voltage		V_{EBO}	−7	V
Collector Current		I_C	−3	A
Base Current		I_B	−0.5	A
Collector Power Dissipation	Ta = 25°C	P_C	1.5	W
	Tc = 25°C		25	
Junction Temperature		T_j	150	°C
Storage Temperature Range		T_{stg}	−55~150	°C

ELECTRICAL CHARACTERISTICS (Ta = 25°C)

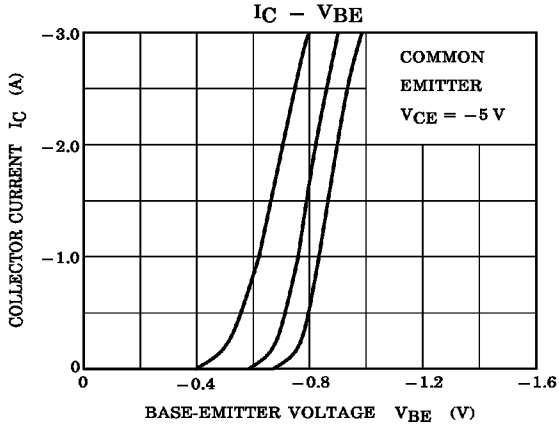
CHARACTERISTIC		SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current		I_{CBO}	$V_{CB} = -60$ V, $I_E = 0$	—	—	−100	μA
Emitter Cut-off Current		I_{EBO}	$V_{EB} = -7$ V, $I_C = 0$	—	—	−100	μA
Collector-Emitter Breakdown Voltage		$V_{(BR)CEO}$	$I_C = -50$ mA, $I_B = 0$	−60	—	—	V
DC Current Gain		$h_{FE(1)}$ (Note)	$V_{CE} = -5$ V, $I_C = -0.5$ A	60	—	300	
		$h_{FE(2)}$	$V_{CE} = -5$ V, $I_C = -3$ A	20	—	—	
Collector-Emitter Saturation Voltage		$V_{CE(sat)}$	$I_C = -3$ A, $I_B = -0.3$ A	—	−0.5	−1.7	V
Base-Emitter Voltage		V_{BE}	$V_{CE} = -5$ A, $I_C = -0.5$ A	—	−0.7	−1.0	V
Transition Frequency		f_T	$V_{CE} = -5$ V, $I_C = -0.5$ A	—	9	—	MHz
Collector Output Capacitance		C_{ob}	$V_{CB} = -10$ V, $I_E = 0$, f = 1 MHz	—	150	—	pF
Switching Time	Turn-on Time	t_{on}	 $-I_{B1} = I_{B2} = 0.2$ A, DUTY CYCLE ≦ 1%	—	0.4	—	μs
	Storage Time	t_{stg}		—	1.7	—	
	Fall Time	t_f		—	0.5	—	

(Note) : $h_{FE(1)}$ Classification O : 60~120, Y : 100~200

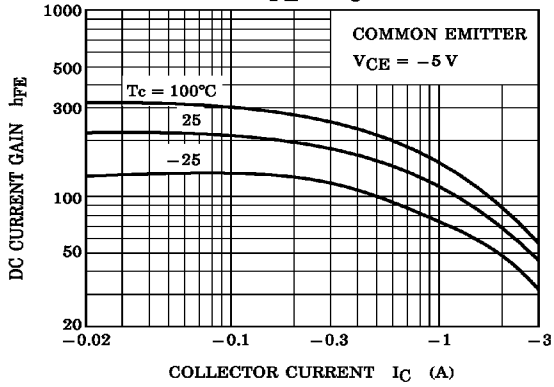
I_C – V_{CE}



I_C – V_{BE}



h_{FE} – I_C



$V_{CE\,(sat)}$ – I_C