

TOSHIBA TRANSISTOR SILICON PNP EPITAXIAL TYPE (DARLINGTON POWER TRANSISTOR)

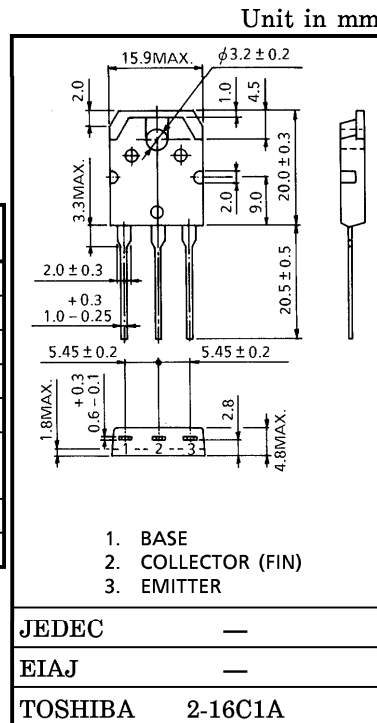
# 2SB1557

POWER AMPLIFIER APPLICATIONS

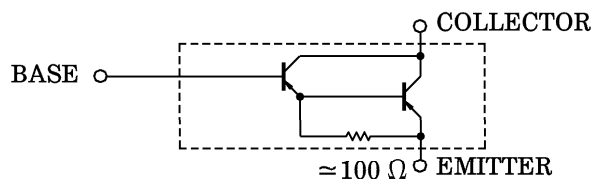
- High Breakdown Voltage :  $V_{CEO} = -140\text{ V (Min.)}$
- Complementary to 2SD2386

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

CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector-Base Voltage	$V_{CBO}$	-140	V
Collector-Emitter Voltage	$V_{CEO}$	-140	V
Emitter-Base Voltage	$V_{EBO}$	-5	V
Collector Current	$I_C$	-7	A
Base Current	$I_B$	-0.1	A
Collector Power Dissipation ( $T_c = 25^\circ\text{C}$ )	$P_C$	70	W
Junction Temperature	$T_j$	150	$^\circ\text{C}$
Storage Temperature Range	$T_{stg}$	-55~150	$^\circ\text{C}$



EQUIVALENT CIRCUIT



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

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current	$I_{CBO}$	$V_{CB} = -140\text{ V}, I_E = 0$	—	—	-5.0	$\mu\text{A}$
Emitter Cut-off Current	$I_{EBO}$	$V_{EB} = -5\text{ V}, I_C = 0$	—	—	-5.0	$\mu\text{A}$
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C = -50\text{ mA}, I_B = 0$	-140	—	—	V
DC Current Gain	$h_{FE(1)}$ (Note)	$V_{CE} = -5\text{ V}, I_C = -6\text{ A}$	5000	—	30000	
	$h_{FE(2)}$	$V_{CE} = -5\text{ V}, I_C = -10\text{ A}$	2000	—	—	
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = -6\text{ A}, I_B = -6\text{ mA}$	—	—	-2.5	V
Base-Emitter Voltage	$V_{BE}$	$V_{CE} = -5\text{ V}, I_C = -6\text{ A}$	—	—	-3.0	V
Transition Frequency	$f_T$	$V_{CE} = -5\text{ V}, I_C = -1\text{ A}$	—	30	—	MHz
Collector Output Capacitance	$C_{ob}$	$V_{CB} = -10\text{ V}, I_E = 0,$ $f = 1\text{ MHz}$	—	120	—	pF

Note :  $h_{FE(1)}$  Classification    A : 5000~12000, B : 9000~18000, C : 15000~30000

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