

TOSHIBA TRANSISTOR SILICON NPN EPITAXIAL TYPE

# 2SC5171

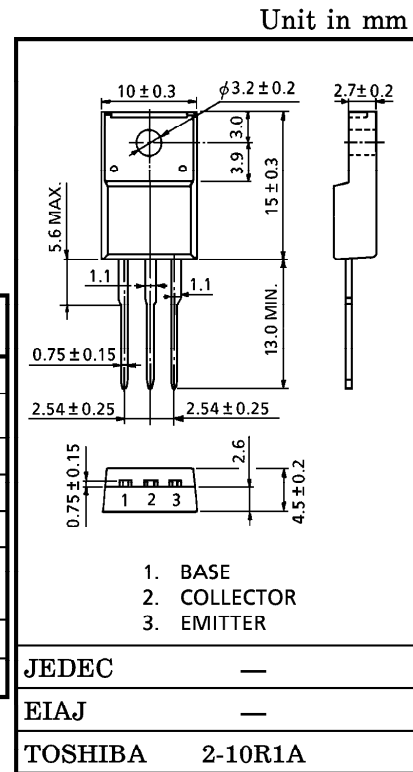
POWER AMPLIFIER APPLICATIONS

DRIVER STAGE AMPLIFIER APPLICATIONS

- High Transition Frequency :  $f_T=200\text{MHz}$  (Typ.)
- Complementary to 2SA1930

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

CHARACTERISTIC		SYMBOL	RATING	UNIT
Collector-Base Voltage		$V_{CB0}$	180	V
Collector-Emitter Voltage		$V_{CEO}$	180	V
Emitter-Base Voltage		$V_{EB0}$	5	V
Collector Current		$I_C$	2	A
Base Current		$I_B$	1	A
Collector Power Dissipation	$T_a = 25^\circ\text{C}$	$P_C$	2.0	W
	$T_c = 25^\circ\text{C}$		20	
Junction Temperature		$T_j$	150	$^\circ\text{C}$
Storage Temperature Range		$T_{stg}$	-55~150	$^\circ\text{C}$



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

Weight : 1.7g (Typ.)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current	$I_{CBO}$	$V_{CB} = 180\text{V}, I_E = 0$	—	—	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	$V_{(BR) CEO}$	$I_C = 10\text{mA}, I_B = 0$	180	—	—	V
DC Current Gain	$h_{FE} (1)$	$V_{CE} = 5\text{V}, I_C = 0.1\text{A}$	100	—	320	
	$h_{FE} (2)$	$V_{CE} = 5\text{V}, I_C = 1\text{A}$	50	—	—	
Collector-Emitter Saturation Voltage	$V_{CE} (\text{sat})$	$I_C = 1\text{A}, I_B = 0.1\text{A}$	—	0.16	1.0	V
Base-Emitter Voltage	$V_{BE}$	$V_{CE} = 5\text{V}, I_C = 1\text{A}$	—	0.68	1.5	V
Transition Frequency	$f_T$	$V_{CE} = 5\text{V}, I_C = 0.3\text{A}$	—	200	—	MHz
Collector Output Capacitance	$C_{ob}$	$V_{CB} = 10\text{V}, I_E = 0, f = 1\text{MHz}$	—	16	—	pF

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