

TOSHIBA TRANSISTOR SILICON NPN TRIPLE DIFFUSED TYPE

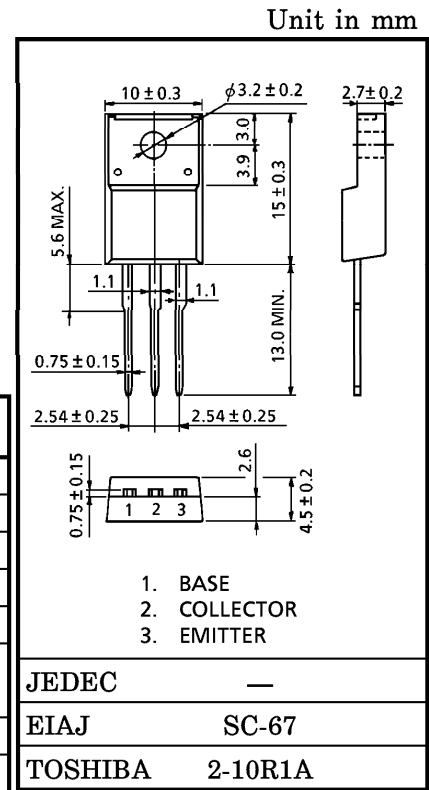
# 2SD2531

POWER AMPLIFIER APPLICATIONS

- Low Collector Saturation Voltage  
:  $V_{CE(sat)} = 0.5 \text{ V (Typ.) (} I_C = 2.5 \text{ A, } I_B = 0.25 \text{ A)}$
- High Power Dissipation  
:  $P_C = 25 \text{ W (} T_c = 25^\circ\text{C)}$

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

CHARACTERISTIC		SYMBOL	RATING	UNIT
Collector-Base Voltage		$V_{CB0}$	60	V
Collector-Emitter Voltage		$V_{CEO}$	60	V
Emitter-Base Voltage		$V_{EBO}$	7	V
Collector Current		$I_C$	4	A
Base Current		$I_B$	1	A
Collector Power Dissipation	$T_a = 25^\circ\text{C}$	$P_C$	2.0	W
	$T_c = 25^\circ\text{C}$		25	
Junction Temperature		$T_j$	150	$^\circ\text{C}$
Storage Temperature Range		$T_{stg}$	-55~150	$^\circ\text{C}$



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

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current	$I_{CB0}$	$V_{CB} = 60 \text{ V, } I_E = 0$	—	—	100	$\mu\text{A}$
Emitter Cut-off Current	$I_{EBO}$	$V_{EB} = 7 \text{ V, } I_C = 0$	—	—	100	$\mu\text{A}$
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C = 10 \text{ mA, } I_B = 0$	60	—	—	V
DC Current Gain	$h_{FE(1)}$	$V_{CE} = 5 \text{ V, } I_C = 0.5 \text{ A}$	100	—	320	
	$h_{FE(2)}$	$V_{CE} = 5 \text{ V, } I_C = 3 \text{ A}$	20	—	—	
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = 2.5 \text{ A, } I_B = 0.25 \text{ A}$	—	0.5	1.0	V
Base-Emitter Voltage	$V_{BE}$	$V_{CE} = 5 \text{ V, } I_C = 0.5 \text{ A}$	—	0.75	1.0	V
Transition Frequency	$f_T$	$V_{CE} = 5 \text{ V, } I_C = 0.5 \text{ A}$	—	3	—	MHz
Collector Output Capacitance	$C_{ob}$	$V_{CB} = 10 \text{ V, } I_E = 0, f = 1 \text{ MHz}$	—	35	—	pF

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