

TOSHIBA TRANSISTOR SILICON NPN TRIPLE DIFFUSED TYPE

# 2SD2012

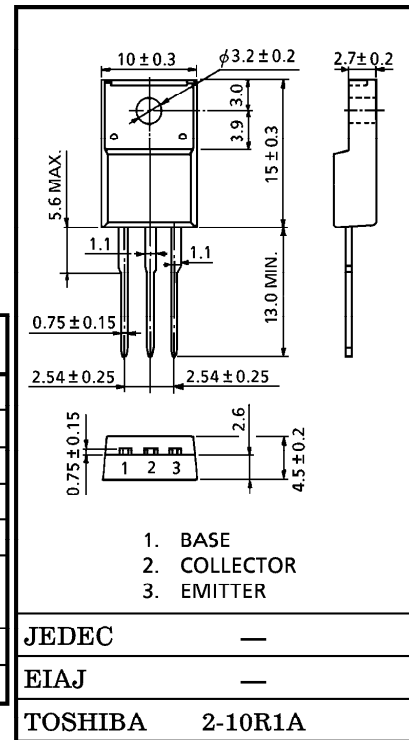
AUDIO FREQUENCY POWER AMPLIFIER APPLICATIONS

Unit in mm

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

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

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		$I_C$	3	A
Base Current		$I_B$	0.5	A
Collector Power Dissipation	$T_a = 25^\circ C$	$P_C$	2.0	W
	$T_c = 25^\circ C$		25	
Junction Temperature		$T_j$	150	$^\circ C$
Storage Temperature Range		$T_{stg}$	-55~150	$^\circ C$



Weight : 1.7g (Typ.)

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

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current	$I_{CB0}$	$V_{CB} = 60V, I_E = 0$	—	—	100	$\mu A$
Emitter Cut-off Current	$I_{EBO}$	$V_{EB} = 7V, I_C = 0$	—	—	100	$\mu A$
Collector-Emitter Breakdown Voltage	$V_{(BR) CEO}$	$I_C = 50mA, I_E = 0$	60	—	—	V
DC Current Gain	$h_{FE(1)}$	$V_{CE} = 5V, I_C = 0.5A$	100	—	320	
	$h_{FE(2)}$	$V_{CE} = 5V, I_C = 2A$	20	—	—	
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = 2A, I_B = 0.2A$	—	0.4	1.0	V
Base-Emitter Voltage	$V_{BE}$	$V_{CE} = 5V, I_C = 0.5A$	—	0.75	1.0	V
Transition Frequency	$f_T$	$V_{CE} = 5V, I_C = 0.5A$	—	3	—	MHz
Collector Output Capacitance	$C_{ob}$	$V_{CB} = 10V, I_E = 0, f = 1MHz$	—	35	—	pF

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