

TOSHIBA TRANSISTOR SILICON NPN TRIPLE DIFFUSED TYPE

2SD2414(SM)

HIGH CURRENT SWITCHING APPLICATIONS

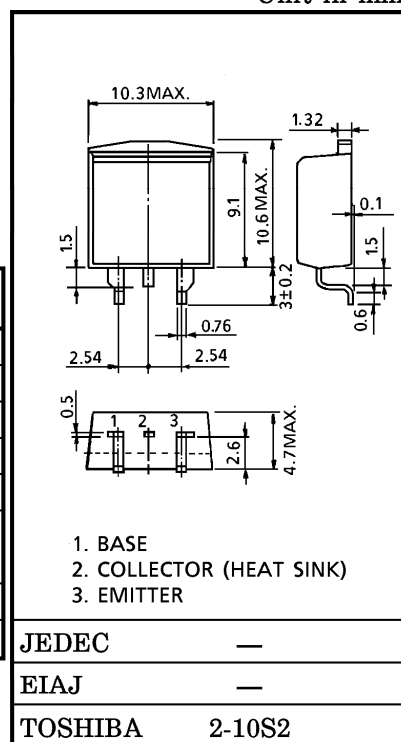
POWER AMPLIFIER APPLICATIONS

Unit in mm

- Low Saturation Voltage
: $V_{CE(sat)} = 0.5 \text{ V (Max.) (at } I_C = 4 \text{ A)}$

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

CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector-Base Voltage	V_{CBO}	100	V
Collector-Emitter Voltage	V_{CEO}	80	V
Emitter-Base Voltage	V_{EBO}	5	V
Collector Current	I_C	7	A
Base Current	I_B	1	A
Collector Power Dissipation	P_C	1.5	W
		40	
Junction Temperature	T_j	150	$^\circ\text{C}$
Storage Temperature Range	T_{stg}	$-55 \sim 150$	$^\circ\text{C}$

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

Weight : 1.4 g

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current	I_{CBO}	$V_{CB} = 100 \text{ V}, I_E = 0$	—	—	5	μA
Emitter Cut-off Current	I_{EBO}	$V_{EB} = 5 \text{ V}, I_C = 0$	—	—	5	μA
Collector-Emitter Breakdown Voltage	$V_{(BR) CEO}$	$I_C = 50 \text{ mA}, I_B = 0$	80	—	—	V
DC Current Gain	$h_{FE(1)}$	$V_{CE} = 1 \text{ V}, I_C = 1 \text{ A}$	100	—	320	
	$h_{FE(2)}$	$V_{CE} = 1 \text{ V}, I_C = 4 \text{ A}$	30	—	—	
Saturation Voltage	Collector-Emitter	$V_{CE(sat)}$	—	0.25	0.5	V
	Base-Emitter	$V_{BE(sat)}$	—	0.9	1.4	V
Transition Frequency	f_T	$V_{CE} = 4 \text{ V}, I_C = 1 \text{ A}$	—	10	—	MHz
Collector Output Capacitance	C_{ob}	$V_{CB} = 10 \text{ V}, I_E = 0, f = 1 \text{ MHz}$	—	200	—	pF
Switching Time	Turn-on Time	t_{on}	—	0.4	—	μs
	Storage Time	t_{stg}	—	2.5	—	
	Fall Time	t_f	—	0.5	—	

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