

TOSHIBA TRANSISTOR SILICON NPN TRIPLE DIFFUSED TYPE

2SD1412A

HIGH CURRENT SWITCHING APPLICATIONS

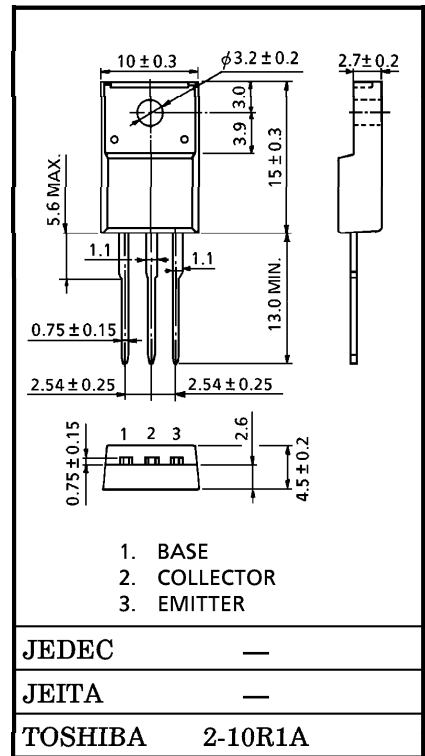
POWER AMPLIFIER APPLICATIONS

- Low Saturation Voltage : $V_{CE(sat)} = 0.4V$ (Max.) at $I_C = 4A$

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

CHARACTERISTIC		SYMBOL	RATING	UNIT
Collector-Base Voltage		V_{CBO}	70	V
Collector-Emitter Voltage		V_{CEO}	50	V
Emitter-Base Voltage		V_{EBO}	5	V
Collector Current		I_C	7	A
Base Current		I_B	1	A
Collector Power Dissipation	$T_a = 25^\circ C$	P_C	2.0	W
	$T_c = 25^\circ C$		30	
Junction Temperature		T_j	150	$^\circ C$
Storage Temperature Range		T_{stg}	-55~150	$^\circ C$

Unit in mm

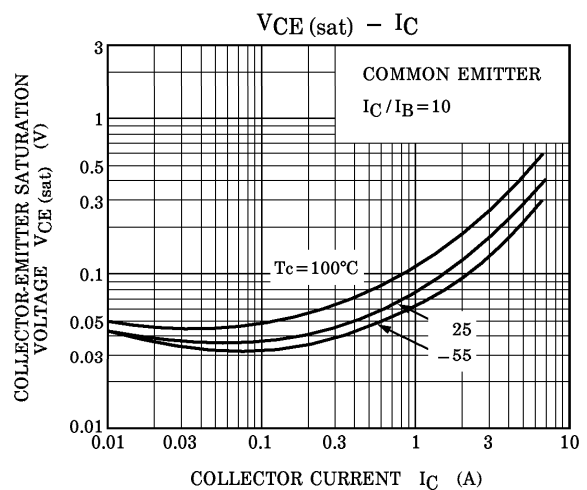
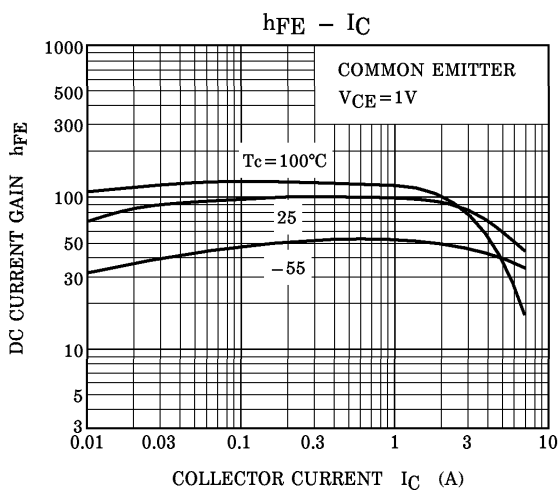
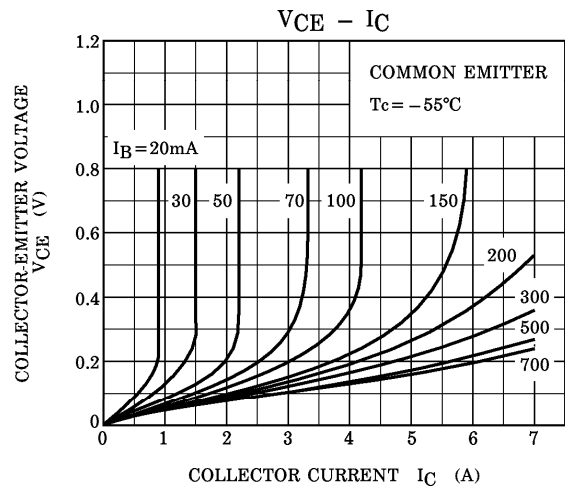
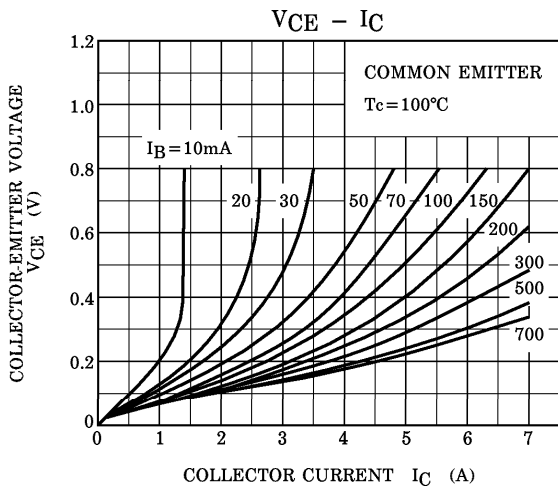
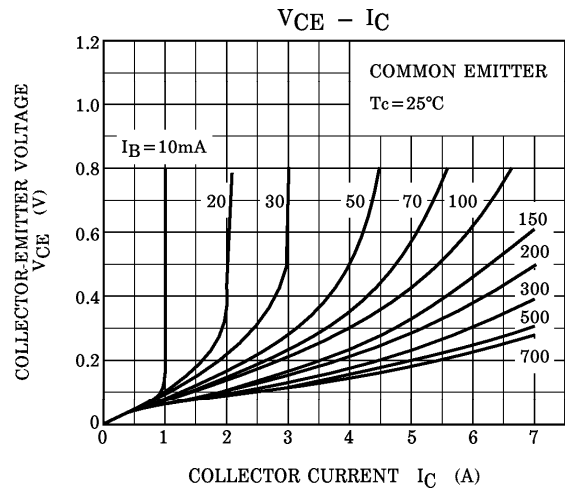
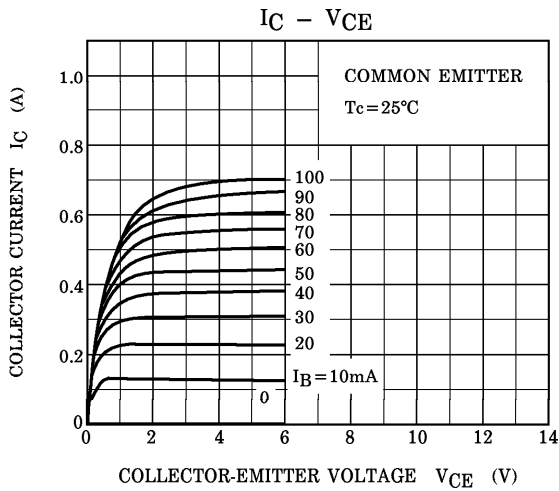


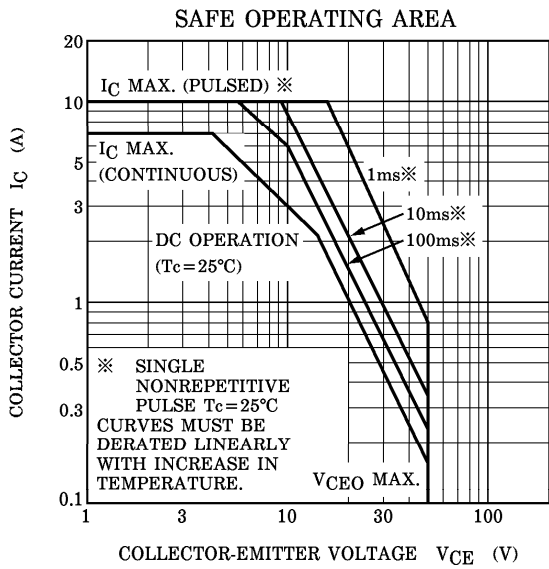
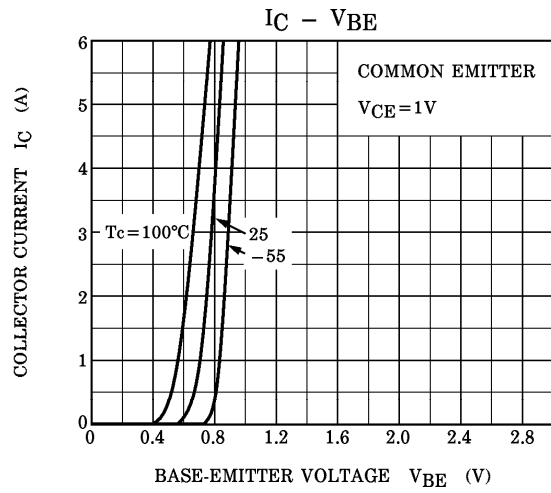
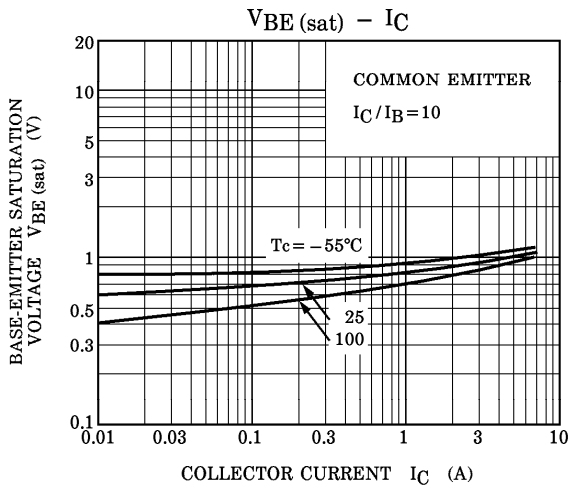
Weight : 1.7 g (Typ.)

ELECTRICAL CHARACTERISTICS (T_c = 25°C)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT	
Collector Cut-off Current	I _{CBO}	V _{CB} = 70V, I _E = 0	—	—	30	μA	
Emitter Cut-off Current	I _{EBO}	V _{EB} = 5V, I _C = 0	—	—	50	μA	
Collector-Emitter Breakdown Voltage	V (BR) CEO	I _C = 50mA, I _B = 0	50	—	—	V	
DC Current Gain	h _{FE} (1) (Note)	V _{CE} = 1V, I _C = 1A	70	—	240		
	h _{FE} (2)	V _{CE} = 1V, I _C = 4A	30	—	—		
Collector-Emitter Saturation Voltage	V _{CE} (sat)	I _C = 4A, I _B = 0.4A	—	0.2	0.4	V	
Base-Emitter Saturation Voltage	V _{BE} (sat)	I _C = 4A, I _B = 0.4A	—	0.9	1.2	V	
Transition Frequency	f _T	V _{CE} = 4V, I _C = 1A	—	10	—	MHz	
Collector Output Capacitance	C _{ob}	V _{CB} = 10V, I _E = 0, f = 1MHz	—	250	—	pF	
Switching Time	Turn-on Time	t _{on}	<p>20 μs INPUT I_{B1} OUTPUT I_{B1} I_{B2} V_{CC} = 30V</p>	—	0.2	—	μs
	Storage Time	t _{stg}		—	2.5	—	
	Fall Time	t _f		I _{B1} = -I _{B2} = 0.3A, DUTY CYCLE ≤ 1%	—	0.5	

(Note) : h_{FE} (1) Classification O : 70~140, Y : 120~240





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