

TOSHIBA Transistor Silicon NPN Triple Diffused Type

2SD2414(SM)

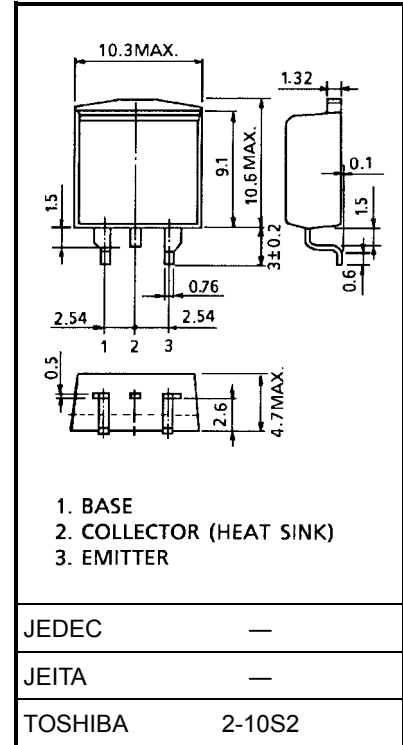
High Current Switching Applications
Power Amplifier Applications

- Low collector saturation voltage: $V_{CE(sat)} = 0.5 \text{ V (max)}$ (at $I_C = 4 \text{ A}$)

Maximum Ratings (Ta = 25°C)

Characteristics	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	Ta = 25°C	1.5
		Tc = 25°C	40
Junction temperature	T_j	150	°C
Storage temperature range	T_{stg}	-55 to 150	°C

Unit: mm

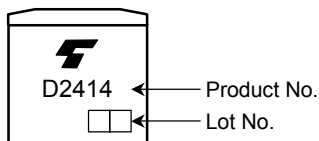


Weight: 1.4 g (typ.)

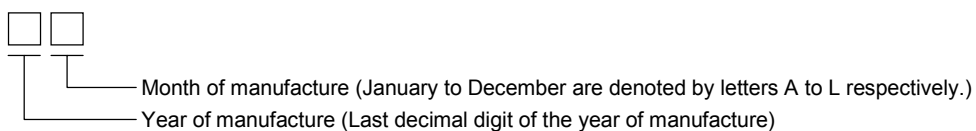
Electrical Characteristics (Ta = 25°C)

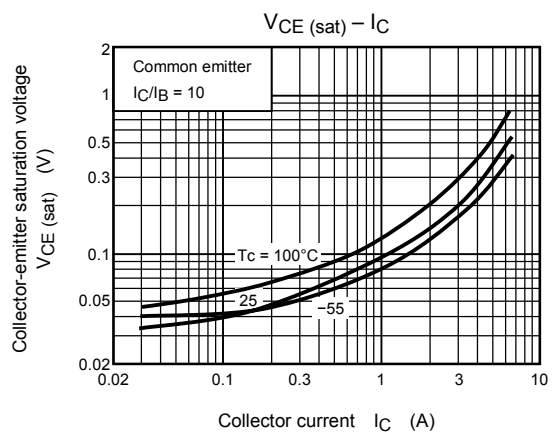
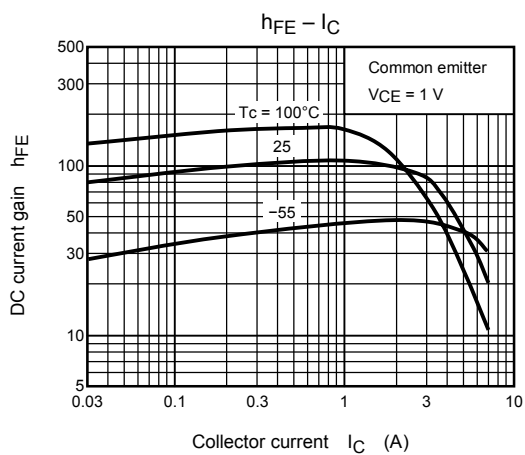
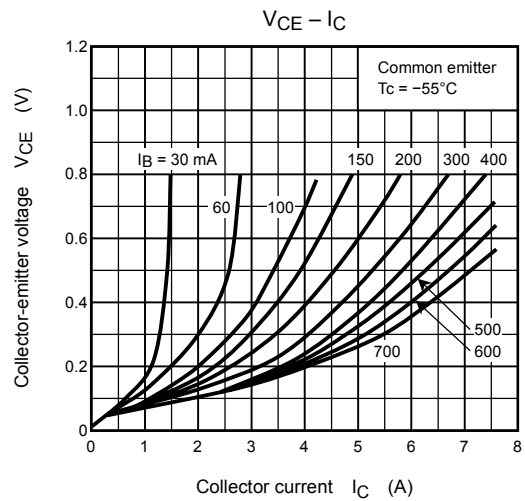
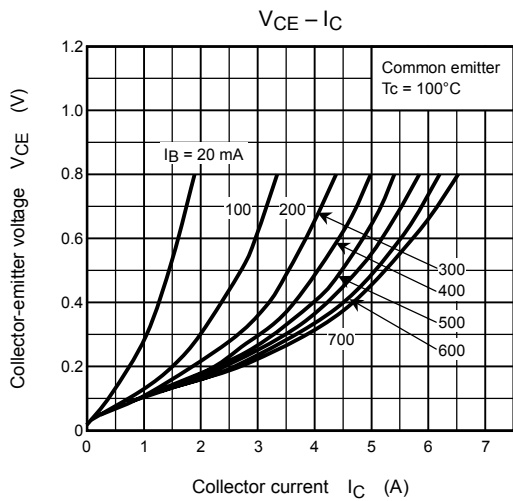
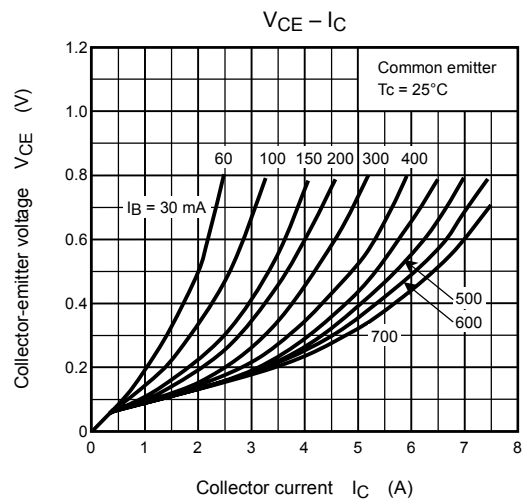
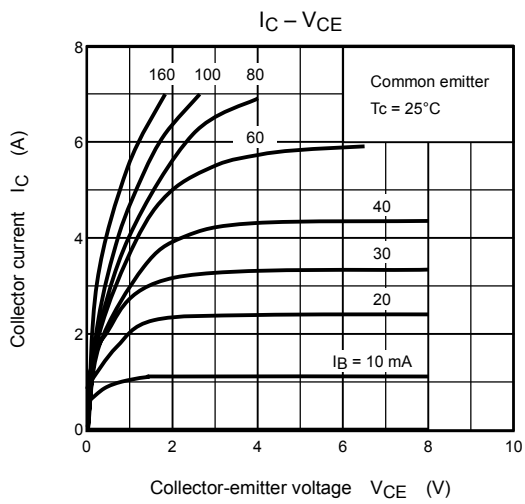
Characteristics		Symbol	Test Condition	Min	Typ.	Max	Unit
Collector cut-off current		I_{CBO}	$V_{CB} = 100\text{ V}, I_E = 0$	—	—	5	μA
Emitter cut-off current		I_{EBO}	$V_{EB} = 5\text{ V}, I_C = 0$	—	—	5	μA
Collector-emitter breakdown voltage		$V_{(BR)CEO}$	$I_C = 50\text{ mA}, I_B = 0$	80	—	—	V
DC current 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	—	—	
Collector-emitter saturation voltage		$V_{CE(sat)}$	$I_C = 4\text{ A}, I_B = 0.4\text{ A}$	—	0.25	0.5	V
Base-emitter saturation voltage		$V_{BE(sat)}$	$I_C = 4\text{ A}, I_B = 0.4\text{ A}$	—	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}	<p>$I_{B1} = -I_{B2} = 0.3\text{ A}, \text{duty cycle} \leq 1\%$</p>	—	0.4	—	μs
	Storage time	t_{stg}		—	2.5	—	
	Fall time	t_f		—	0.5	—	

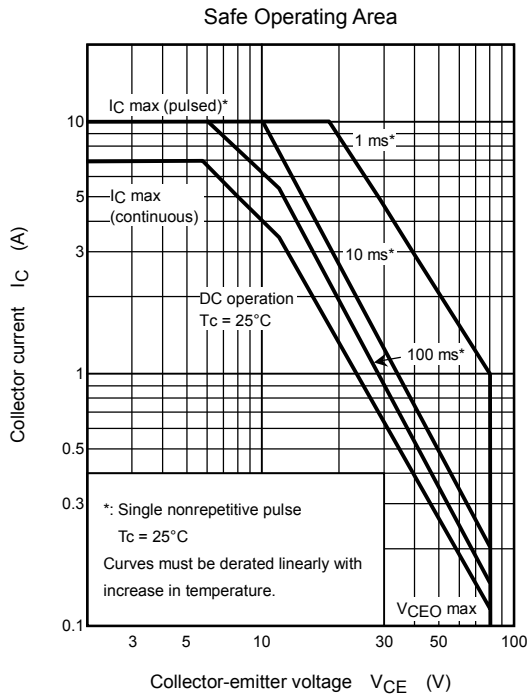
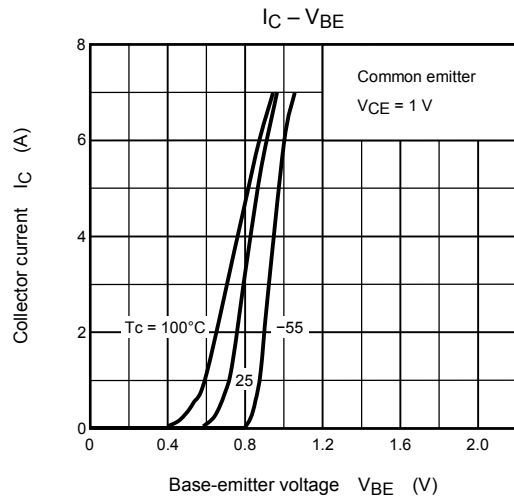
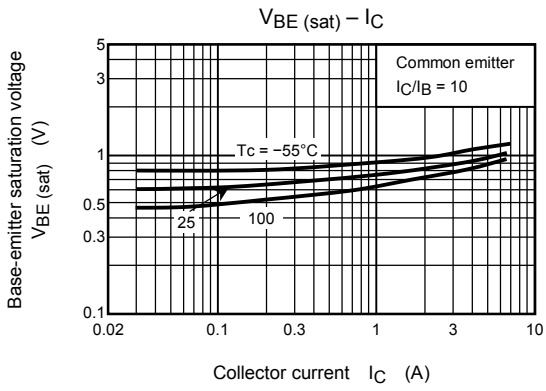
Marking



Explanation of Lot No.







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