

TOSHIBA Transistor Silicon NPN Triple Diffused Type

# 2SD2414(SM)

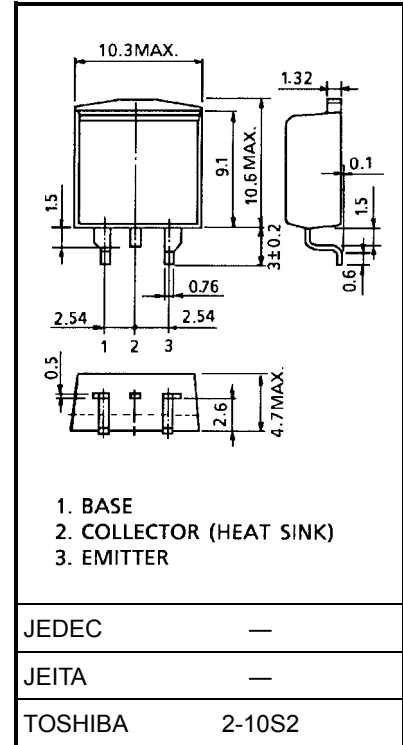
High Current Switching Applications  
Power Amplifier Applications

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

Unit: mm

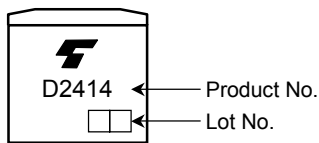


Weight: 1.4 g (typ.)

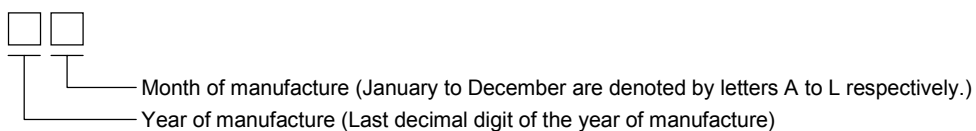
## Electrical Characteristics (Ta = 25°C)

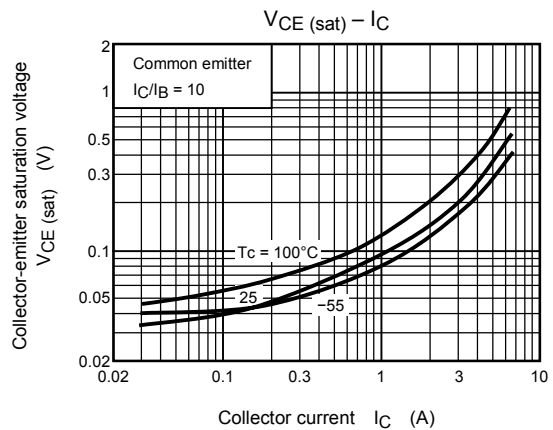
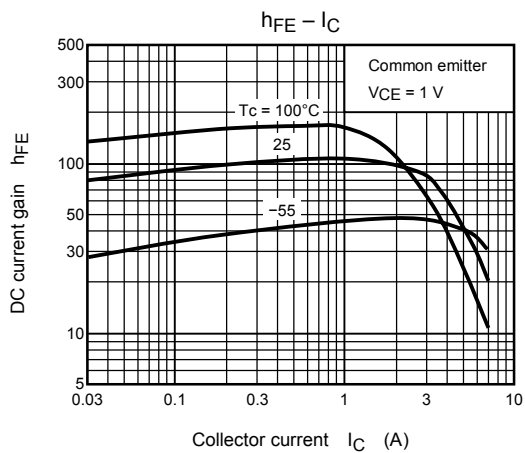
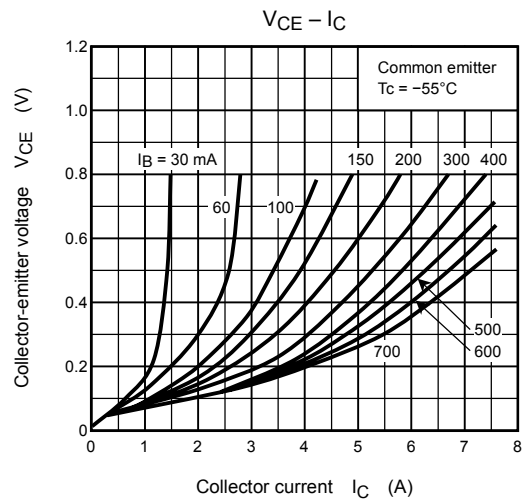
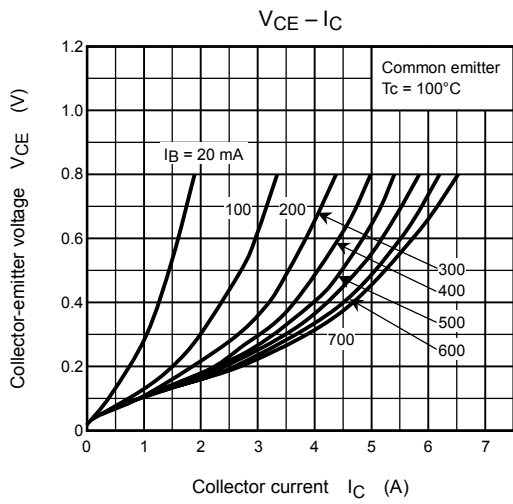
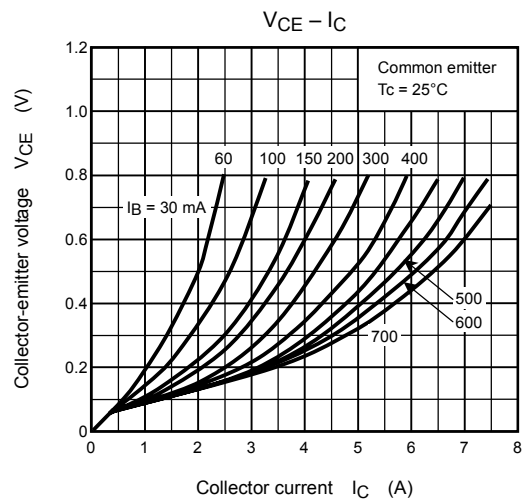
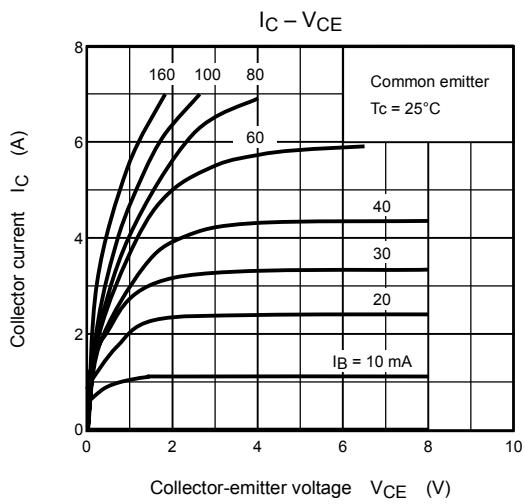
Characteristics		Symbol	Test Condition	Min	Typ.	Max	Unit
Collector cut-off current		$I_{CBO}$	$V_{CB} = 100\text{ V}, I_E = 0$	—	—	5	$\mu\text{A}$
Emitter cut-off current		$I_{EBO}$	$V_{EB} = 5\text{ V}, I_C = 0$	—	—	5	$\mu\text{A}$
Collector-emitter breakdown voltage		$V_{(BR)CEO}$	$I_C = 50\text{ mA},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

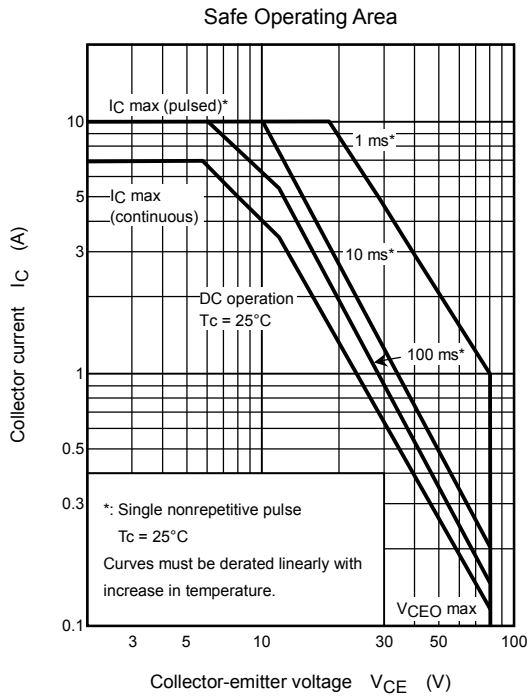
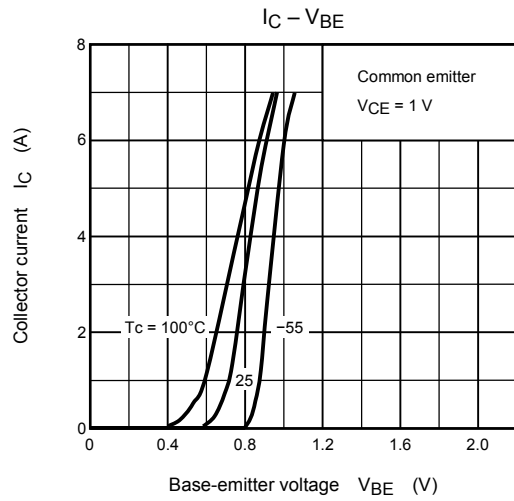
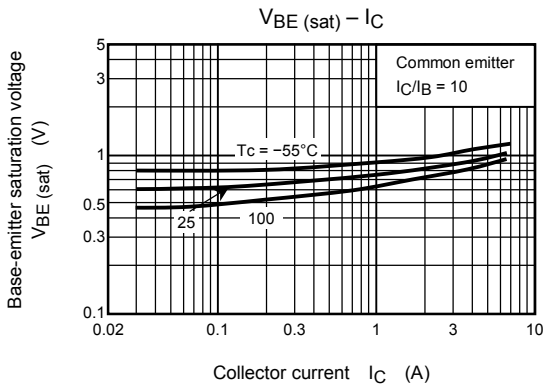
## Marking



## Explanation of Lot No.







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