

TOSHIBA Transistor Silicon NPN Epitaxial Type

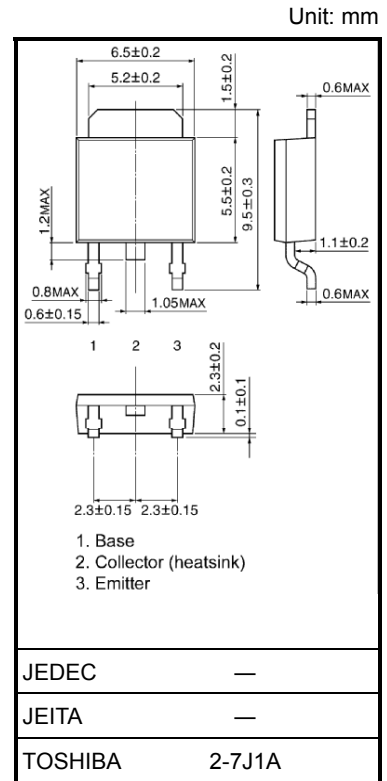
# 2SC5886A

High-Speed Switching Applications  
DC/DC Converter Applications

- High DC current gain:  $h_{FE} = 400$  to  $1000$  ( $I_C = 0.5$  A)
- Low collector-emitter saturation:  $V_{CE(sat)} = 0.22$  V (max)
- High-speed switching:  $t_f = 95$  ns (typ.)

### Maximum Ratings (Ta = 25°C)

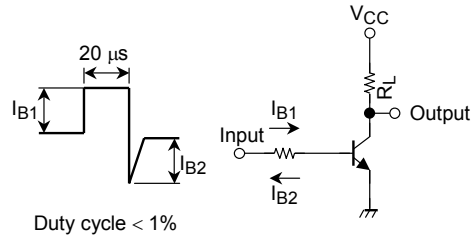
Characteristic	Symbol	Rating	Unit	
Collector-base voltage	$V_{CBO}$	120	V	
Collector-emitter voltage	$V_{CEX}$	100	V	
	$V_{CEO}$	50		
Emitter-base voltage	$V_{EBO}$	9	V	
Collector current	DC	$I_C$	5	A
	Pulse	$I_{CP}$	10	
Base current	$I_B$	0.5	A	
Collector power dissipation	Ta = 25°C	$P_C$	1	W
	Tc = 25°C		20	
Junction temperature	$T_j$	150	°C	
Storage temperature range	$T_{stg}$	-55 to 150	°C	



Weight: 0.36 g (typ.)

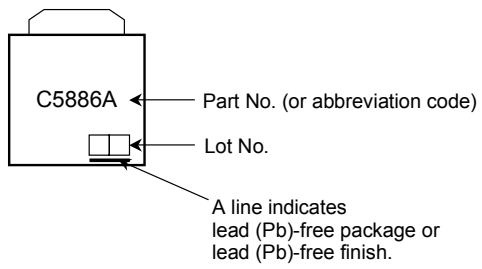
### Electrical Characteristics (Ta = 25°C)

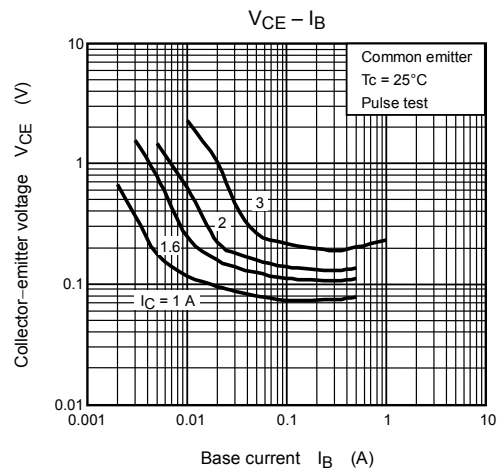
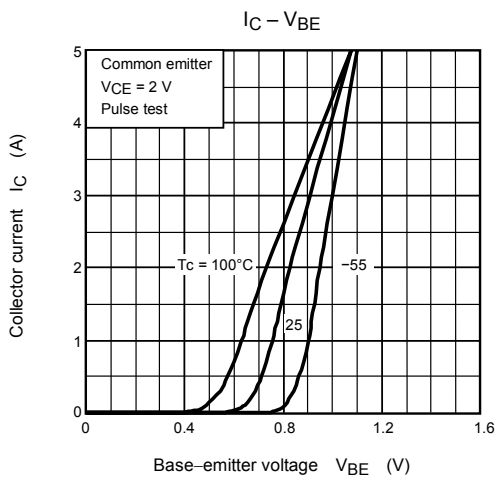
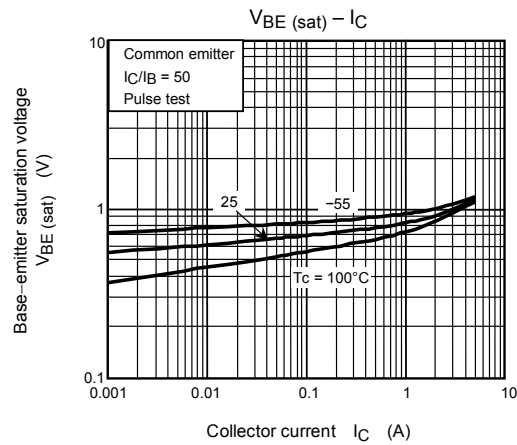
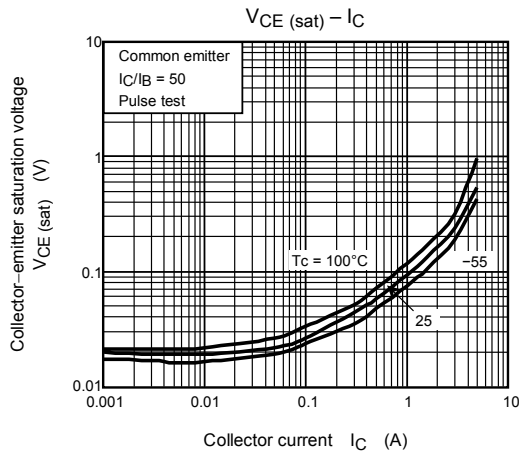
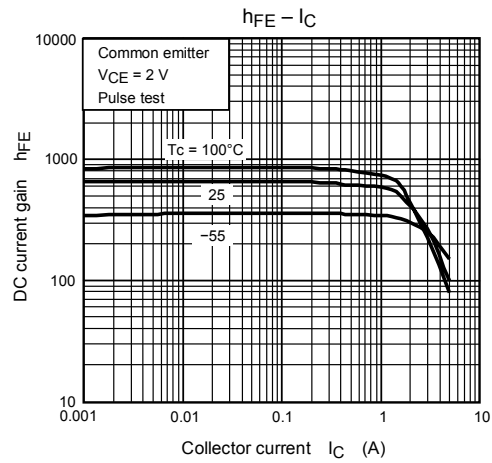
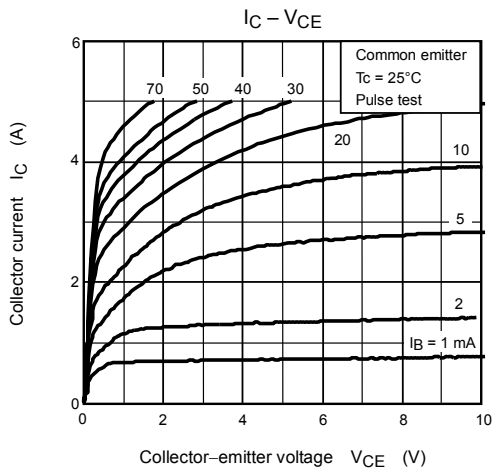
Characteristic	Symbol	Test Condition	Min	Typ.	Max	Unit
Collector cutoff current	$I_{CBO}$	$V_{CB} = 120$ V, $I_E = 0$	—	—	100	nA
Emitter cutoff current	$I_{EBO}$	$V_{EB} = 9$ V, $I_C = 0$	—	—	100	nA
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C = 10$ mA, $I_B = 0$	50	—	—	V
DC current gain	$h_{FE}(1)$	$V_{CE} = 2$ V, $I_C = 0.5$ A	400	—	1000	
	$h_{FE}(2)$	$V_{CE} = 2$ V, $I_C = 1.6$ A	200	—	—	
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = 1.6$ A, $I_B = 32$ mA	—	—	0.22	V
Base-emitter saturation voltage	$V_{BE(sat)}$	$I_C = 1.6$ A, $I_B = 32$ mA	—	—	1.10	V
Switching time	Rise time	See Figure 1. $V_{CC} \approx 24$ V, $R_L = 15 \Omega$ $I_{B1} = 32$ mA, $I_{B2} = -53$ mA	—	60	—	ns
	Storage time		—	500	—	
	Fall time		—	95	—	

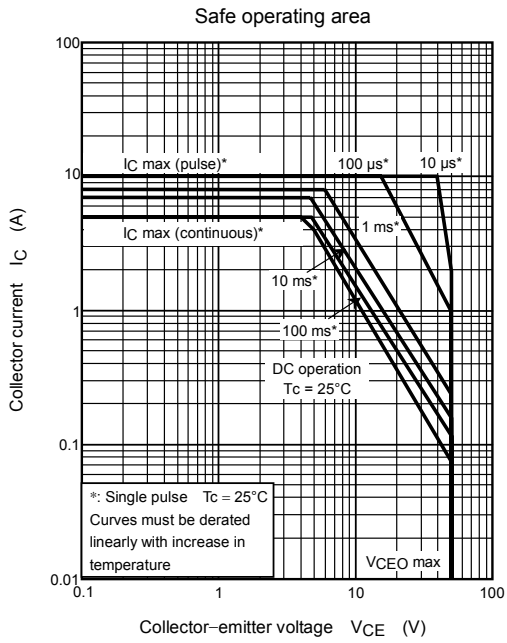
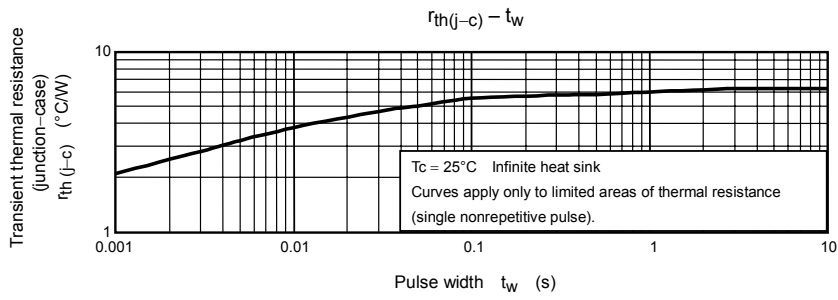


**Figure 1 Switching Time Test Circuit & Timing Chart**

### Marking







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