

TOSHIBA Transistor Silicon NPN Epitaxial Type

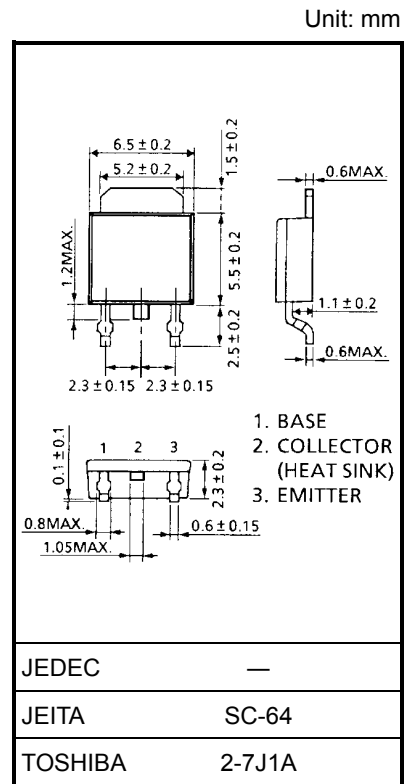
# 2SC5886

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:  $t_f = 55$  ns (typ.)

### Maximum Ratings ( $T_a = 25^\circ\text{C}$ )

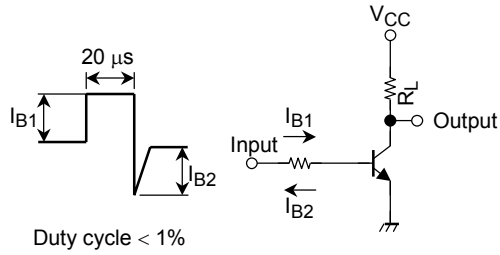
Characteristics		Symbol	Rating	Unit
Collector-base voltage		$V_{CBO}$	100	V
Collector-emitter voltage		$V_{CEX}$	80	V
		$V_{CEO}$	50	
Emitter-base voltage		$V_{EBO}$	7	V
Collector current	DC	$I_C$	5	A
	Pulse	$I_{CP}$	10	
Base current		$I_B$	0.5	A
Collector power dissipation	$T_a = 25^\circ\text{C}$	$P_c$	1	W
	$T_c = 25^\circ\text{C}$		20	
Junction temperature		$T_j$	150	$^\circ\text{C}$
Storage temperature range		$T_{stg}$	-55 to 150	$^\circ\text{C}$



Weight: 0.36 g (typ.)

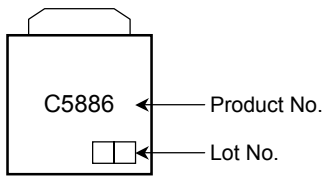
### Electrical Characteristics ( $T_a = 25^\circ\text{C}$ )

Characteristics		Symbol	Test Condition	Min	Typ.	Max	Unit
Collector cut-off current		$I_{CBO}$	$V_{CB} = 100$ V, $I_E = 0$	—	—	100	nA
Emitter cut-off current		$I_{EBO}$	$V_{EB} = 7$ V, $I_C = 0$	—	—	100	nA
Collector-emitter brakedown voltage		$V_{(BR)CEO}$	$I_C = 10$ mA, $I_B = 0$	50	—	—	V
DC current gain	$h_{FE(1)}$	$h_{FE}$	$V_{CE} = 2$ 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	$t_r$	See Figure 1 circuit diagram $V_{CC} \approx 24$ V, $R_L = 15 \Omega$ $I_{B1} = 32$ mA, $I_{B2} = -53$ mA	—	63	—	ns
	Storage time	$t_{stg}$		—	560	—	
	Fall time	$t_f$		—	55	—	

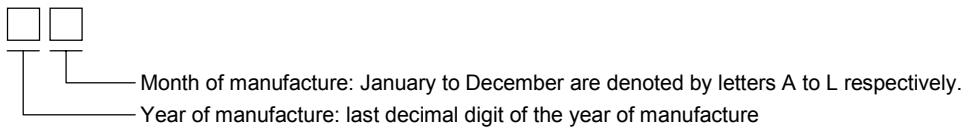


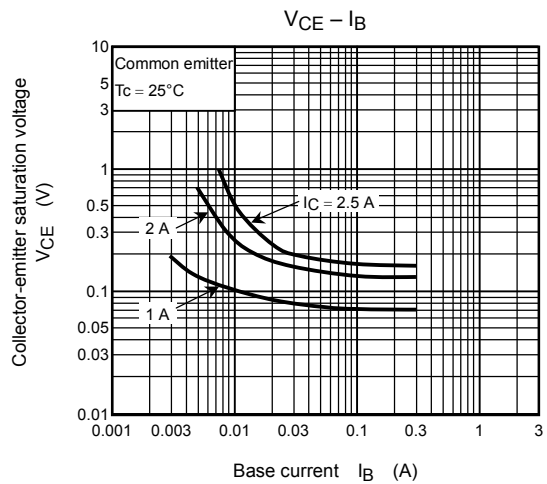
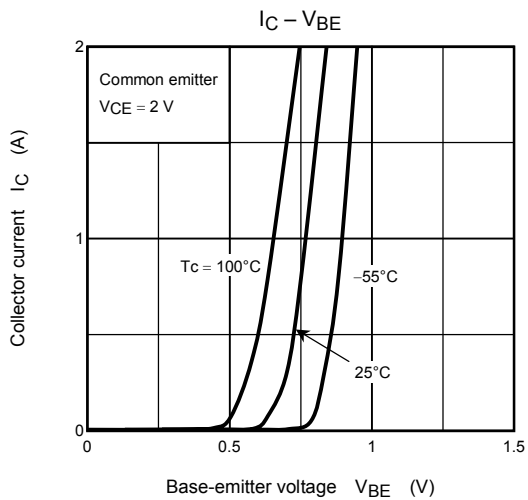
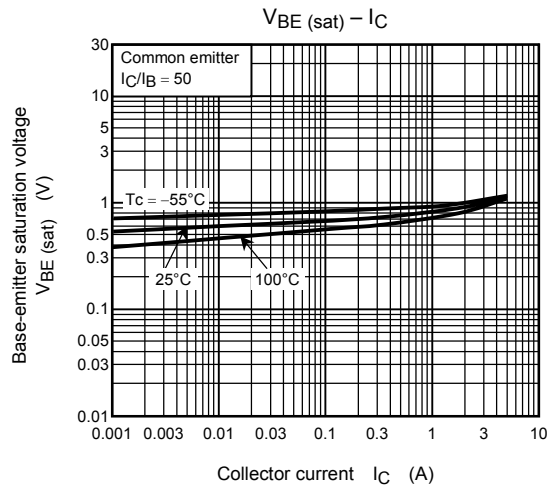
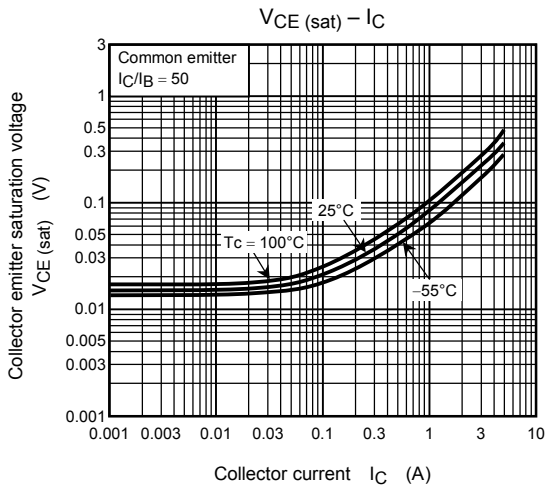
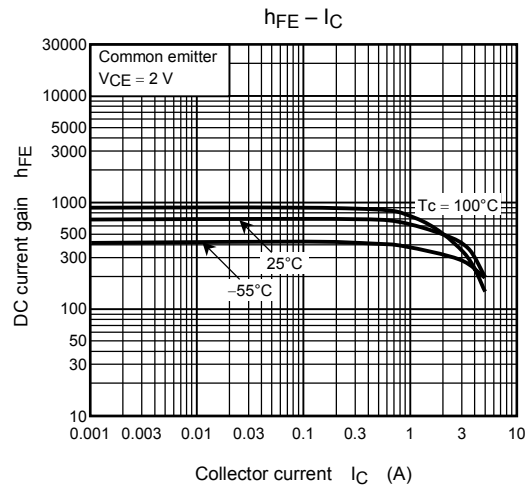
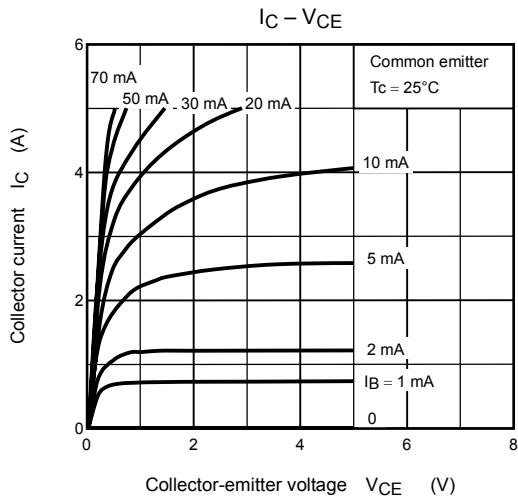
**Figure 1 Switching Time Test Circuit & Timing Chart**

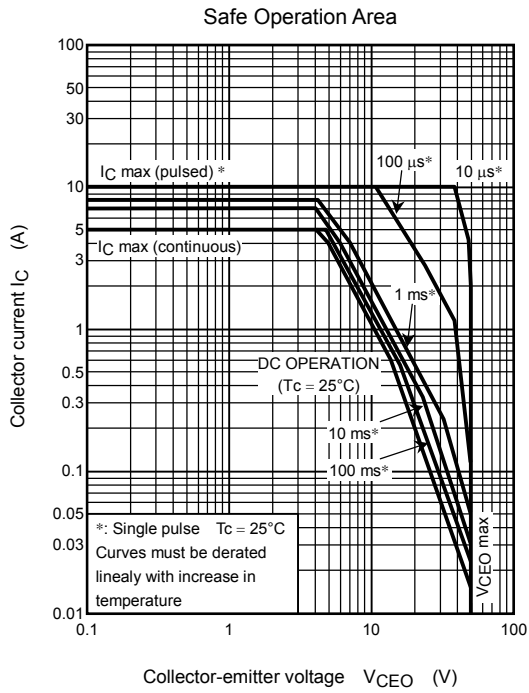
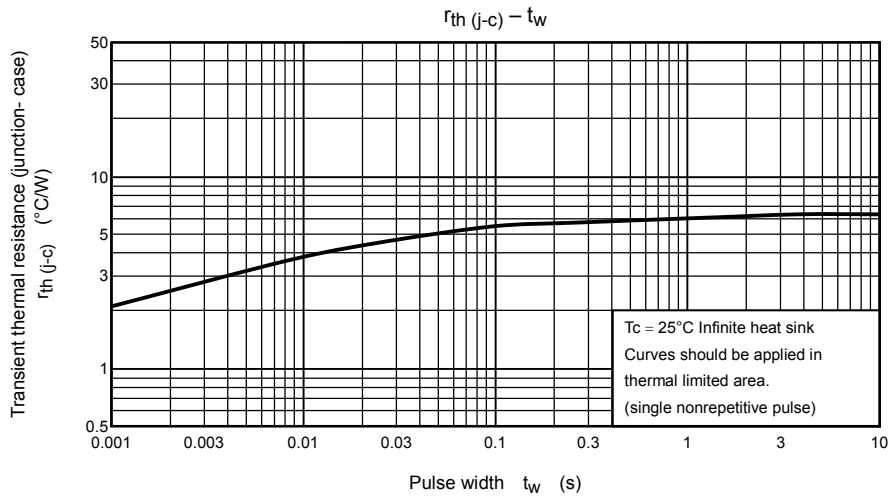
**Marking**



**Explanation of Lot No.**







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