

TOSHIBA Transistor Silicon PNP Epitaxial Type (PCT PROCESS)

2SA1931

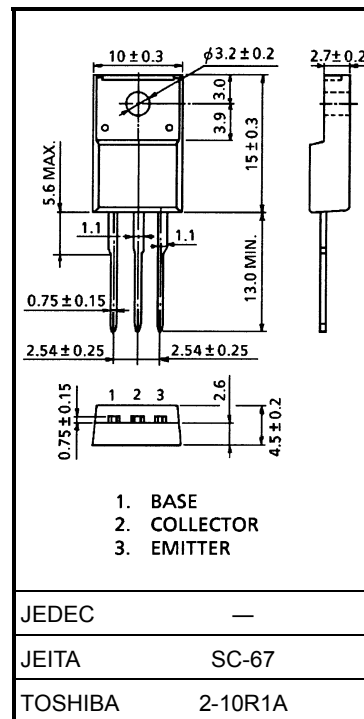
High-Current Switching Applications

Unit: mm

- Low saturation voltage: $V_{CE(sat)} = -0.4$ V (max)
- High-speed switching time: $t_{stg} = 1.0$ μ s (typ.)
- Complementary to 2SC4881

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

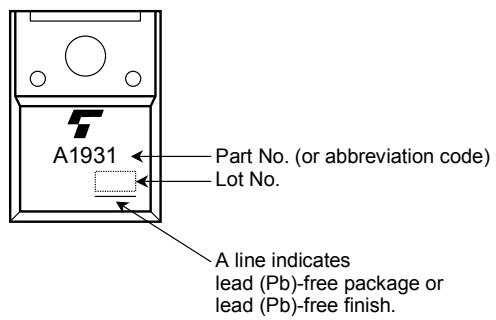
Characteristic	Symbol	Rating	Unit
Collector-base voltage	V_{CBO}	-60	V
Collector-emitter voltage	V_{CEO}	-50	V
Emitter-base voltage	V_{EBO}	-7	V
Collector current	I_C	-5	A
Base current	I_B	-1	A
Collector power dissipation	P_C	$T_a = 25^\circ\text{C}$	2.0
		$T_c = 25^\circ\text{C}$	20
Junction temperature	T_j	150	$^\circ\text{C}$
Storage temperature range	T_{stg}	-55 to 150	$^\circ\text{C}$

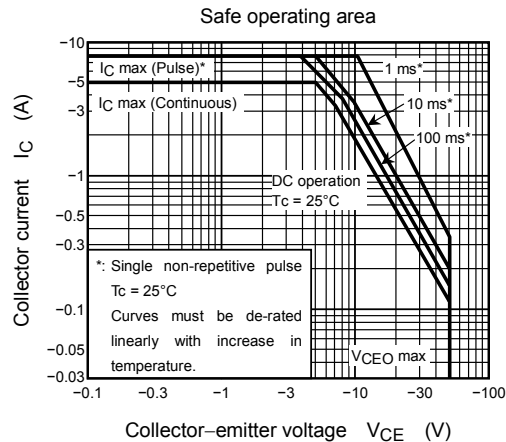
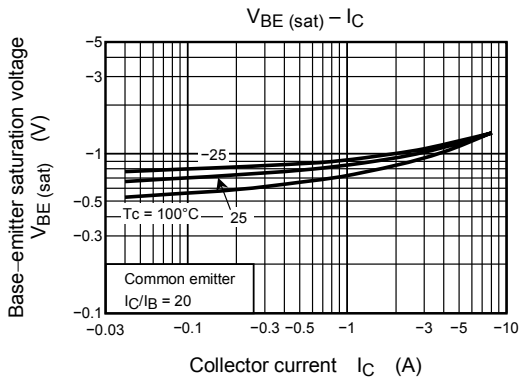
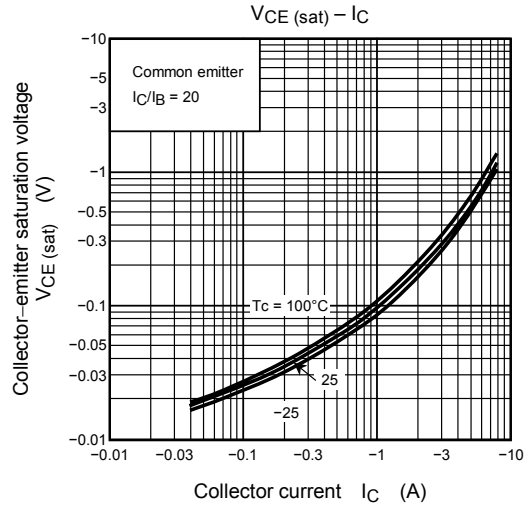
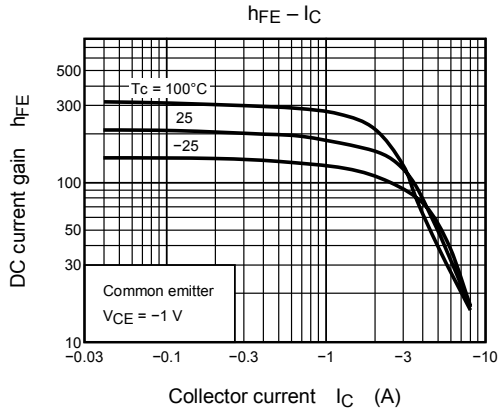
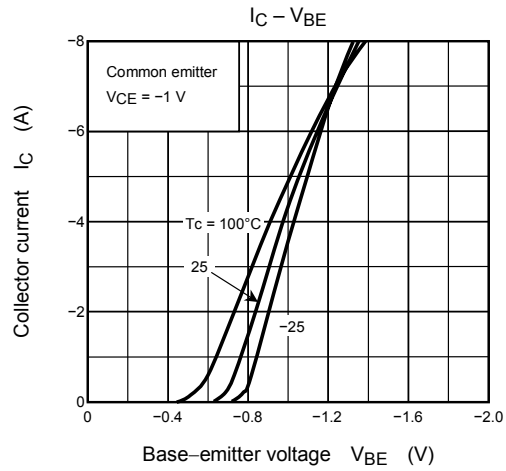
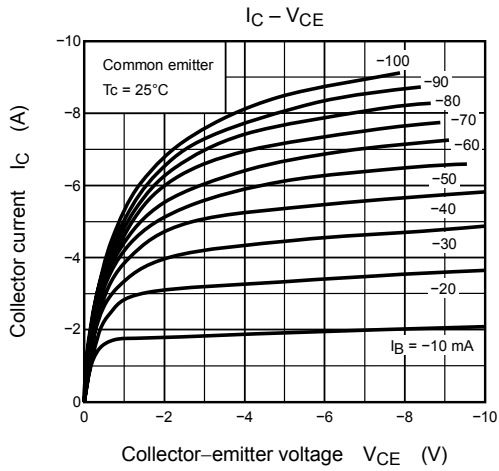


Electrical Characteristics ($T_c = 25^\circ\text{C}$)

Weight: 1.7 g (typ.)

Characteristic	Symbol	Test Conditions	Min	Typ.	Max	Unit
Collector cut-off current	I_{CBO}	$V_{CB} = -50$ V, $I_E = 0$	—	—	-1	μ A
Emitter cut-off current	I_{EBO}	$V_{EB} = -7$ V, $I_C = 0$	—	—	-1	μ A
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C = -10$ mA, $I_B = 0$	-50	—	—	V
DC current gain	$h_{FE(1)}$	$V_{CE} = -1$ V, $I_C = 1$ A	100	—	300	
	$h_{FE(2)}$	$V_{CE} = -1$ V, $I_C = -3$ A	60	—	—	
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = -2$ A, $I_B = -0.2$ A	—	-0.2	-0.4	V
Base-emitter saturation voltage	$V_{BE(sat)}$	$I_C = -2$ A, $I_B = -0.2$ A	—	-0.9	-1.5	V
Transition frequency	f_T	$V_{CB} = -1$ V, $I_C = -1$ A	—	60	—	MHz
Collector output capacitance	C_{ob}	$V_{CB} = -10$ V, $I_E = 0$, $f = 1$ MHz	—	100	—	pF
Switching time	Turn-on time	t_{on}	—	0.1	—	μ s
	Storage time	t_{stg}	—	1.0	—	
	Fall time	t_f	$-I_{B1} = I_{B2} = 0.15$ A, duty cycle $\leq 1\%$	—	0.1	

Marking



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