

TOSHIBA Transistor Silicon PNP Triple Diffused Type

2SA1937

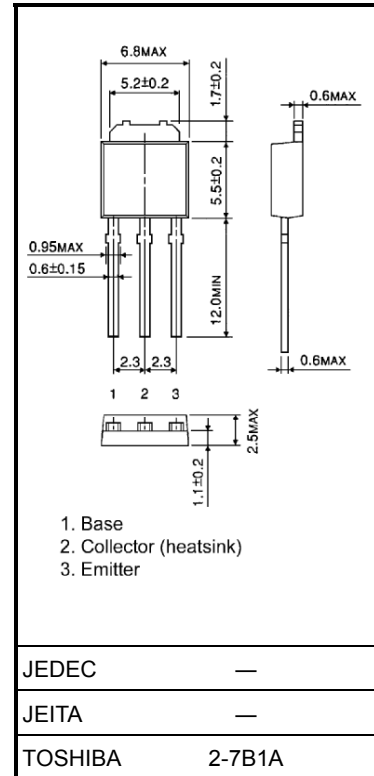
High-Voltage Switching Applications

Unit: mm

- High voltage: $V_{CEO} = -600$ V

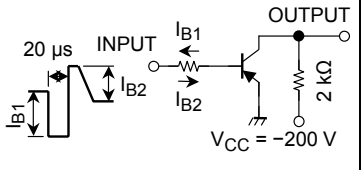
Maximum Ratings ($T_a = 25^\circ\text{C}$)

Characteristics		Symbol	Rating	Unit
Collector-base voltage		V_{CBO}	-600	V
Collector-emitter voltage		V_{CEO}	-600	V
Emitter-base voltage		V_{EBO}	-7	V
Collector current	DC	I_C	-0.5	A
	Pulse	I_{CP}	-1	
Base current		I_B	-0.25	A
Collector power dissipation	$T_a = 25^\circ\text{C}$	P_C	1	W
	$T_c = 25^\circ\text{C}$		10	
Junction temperature		T_j	150	$^\circ\text{C}$
Storage temperature range		T_{stg}	-55 to 150	$^\circ\text{C}$

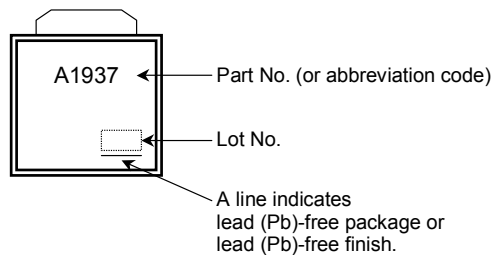


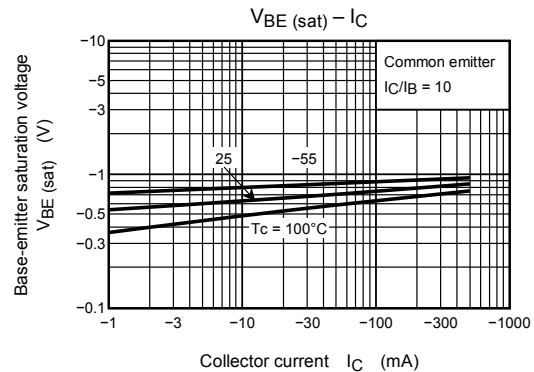
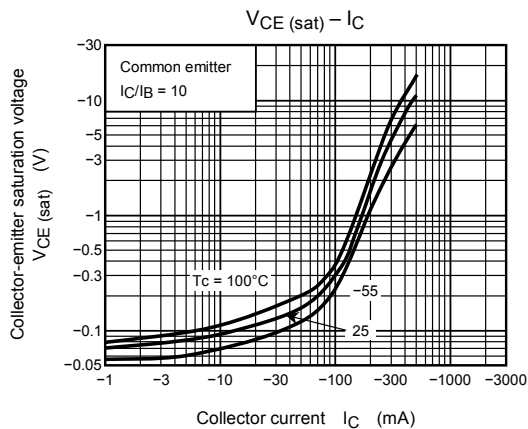
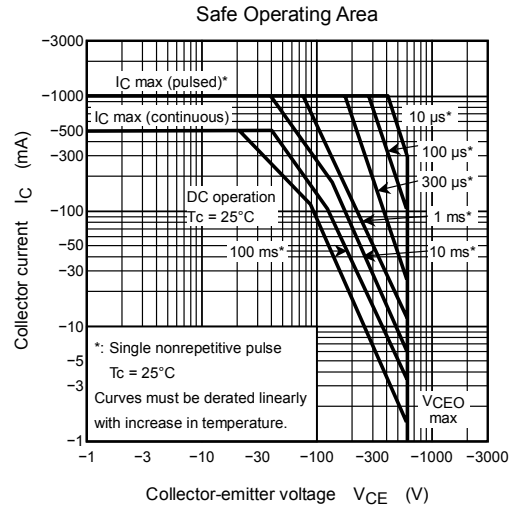
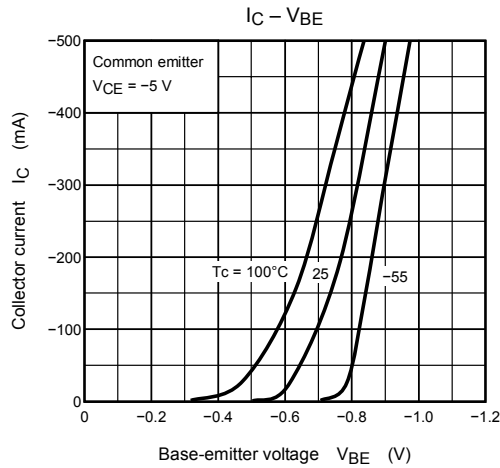
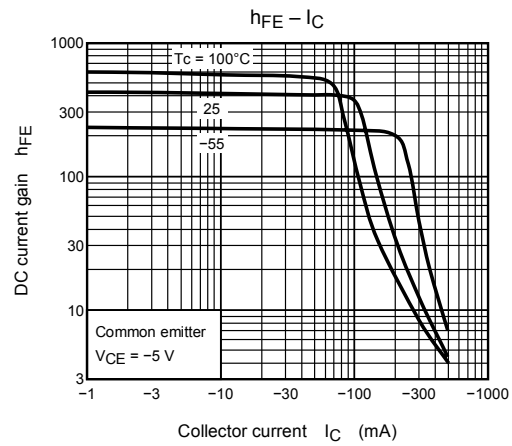
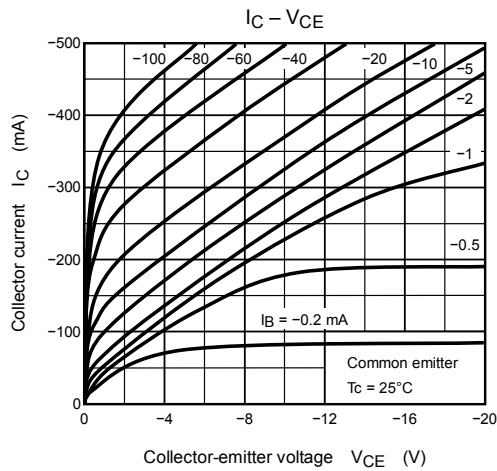
Weight: 0.36 g (typ.)

Electrical Characteristics (Ta = 25°C)

Characteristics		Symbol	Test Condition	Min	Typ.	Max	Unit
Collector cut-off current		I_{CBO}	$V_{CB} = -600 \text{ V}, I_E = 0$	—	—	-10	μA
Emitter cut-off current		I_{EBO}	$V_{EB} = -7 \text{ V}, I_C = 0$	—	—	-1	μA
Collector-emitter breakdown voltage		$V_{(BR) CEO}$	$I_C = -10 \text{ mA}, I_B = 0$	-600	—	—	V
DC current gain		$h_{FE} (1)$	$V_{CE} = -5 \text{ V}, I_C = -20 \text{ mA}$	100	—	500	
		$h_{FE} (2)$	$V_{CE} = -5 \text{ V}, I_C = -100 \text{ mA}$	80	—	450	
Collector-emitter saturation voltage		$V_{CE (sat)}$	$I_C = -100 \text{ mA}, I_B = -10 \text{ mA}$	—	—	-1.0	V
Base-emitter saturation voltage		$V_{BE (sat)}$	$I_C = -100 \text{ mA}, I_B = -10 \text{ mA}$	—	-0.76	-0.9	V
Transition frequency		f_T	$V_{CE} = -5 \text{ V}, I_C = -50 \text{ mA}$	—	35	—	MHz
Collector output capacitance		C_{ob}	$V_{CB} = -10 \text{ V}, I_E = 0, f = 1 \text{ MHz}$	—	24	—	pF
Switching time	Turn-on time	t_{on}	 <p>$I_{B1} = -10 \text{ mA}, I_{B2} = 20 \text{ mA}, \text{DUTY CYCLE} \leq 1\%$</p>	—	0.2	—	μs
	Storage time	t_{stg}		—	2.3	—	
	Fall time	t_f		—	0.2	—	

Marking





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