Unit: mm

TOSHIBA Transistor Silicon PNP Epitaxial Type

2SA2060

High-Speed Switching Applications DC-DC Converter Applications Strobe Applications

- High DC current gain: $h_{FE} = 200$ to 500 ($I_{C} = -0.5$ A)
- Low collector-emitter saturation voltage: $V_{CE (sat)} = -0.2 \text{ V (max)}$
- High-speed switching: $t_f = 90$ ns (typ.)

Maximum Ratings (Ta = 25°C)

Characteristics		Symbol	Rating	Unit	
Collector-base voltage		V _{CBO}	-50	V	
Collector-emitter voltage		V _{CEO}	-50	V	
Emitter-base voltage		V _{EBO}	-7	V	
Collector current	DC	IC	-2.0	А	
	Pulse	I _{CP}	-3.5		
Base current		Ι _Β	-200	mA	
Collector power dissipation	t = 10 s	PC	2.5	W	
	DC	(Note 1)	1.0		
Junction temperature		Tj	150	°C	
Storage temperature range		T _{stg}	−55 to 150	°C	

Note 1: Mounted on FR4 board (glass epoxy, 1.6 mm thick, Cu area: 645 mm^2)

1.6MAX 4.6MAX 1.7MAX. 0.4 ± 0.05 + 0.08 0.4 - 0.05 + 0.08 0.4 - 0.05 1.5 ± 0.1 1.5 ± 0.1 1. Base 2. Collector (heat sink) 3. Emitter **JEDEC** JEITA SC-62 TOSHIBA 2-5K1A

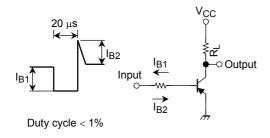
Weight: 0.05 g (typ.)

Electrical Characteristics (Ta = 25°C)

Characteristics		Symbol	Test Condition	Min	Тур.	Max	Unit	
Collector cut-off current		I _{CBO}	V _{CB} = -50 V, I _E = 0	_	_	-100	nA	
Emitter cut-off current		I _{EBO}	V _{EB} = -7 V, I _C = 0	_	_	-100	nA	
Collector-emitter breakdown voltage		V (BR) CEO	$I_C = -10 \text{ mA}, I_B = 0$	-50	_	_	V	
DC current gain		h _{FE} (1)	$V_{CE} = -2 \text{ V}, I_{C} = -0.3 \text{ A}$	200	_	500		
		h _{FE} (2)	V _{CE} = -2 V, I _C = -1.0 A	100	_	_		
Collector-emitter saturation voltage		V _{CE} (sat)	I _C = -1.0 A, I _B = -0.033 A	_	_	-0.2	V	
Base-emitter saturation voltage		V _{BE (sat)}	I _C = -1.0 A, I _B = -0.033 A	_	_	-1.1	V	
Collector output capacitance		C _{ob}	V _{CB} = −10 V, I _E = 0, f = 1 MHz	_	20	_	pF	
Switching time	Rise time	t _r	See Figure 1 circuit diagram.	_	60	_	ns	
	Storage time	t _{stg}	$V_{CC} \approx -30 \text{ V}, R_L = 30 \Omega$	_	250	_		
	Fall time	t _f	$-I_{B1} = I_{B2} = -33 \text{ mA}$	_	90	_		

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Marking



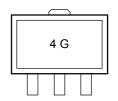
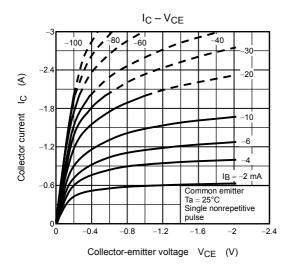
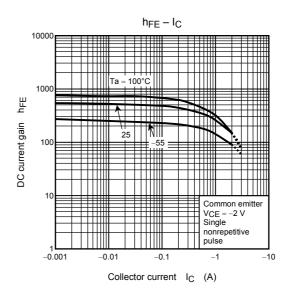
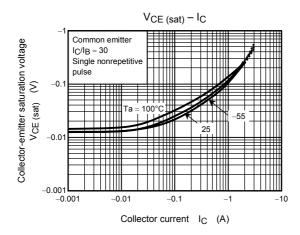
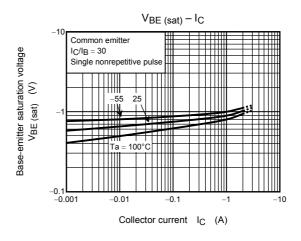


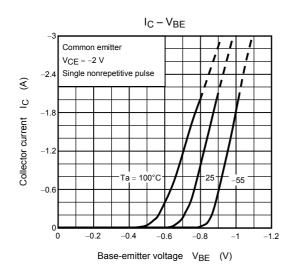
Figure 1 Switching Time Test Circuit & Timing Chart

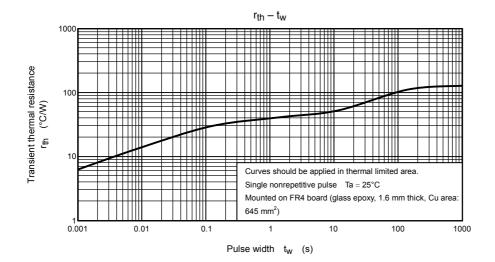


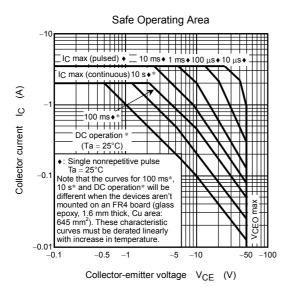












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