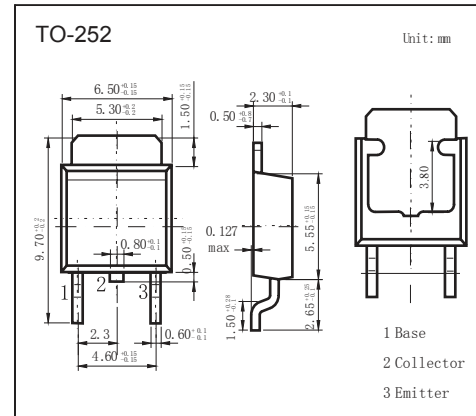


NPN Transistors

2SD1801



■ Features

- Low collector-to-emitter saturation voltage.
- Fast switching speed.
- Complementary to 2SB1201

■ Absolute Maximum Ratings $T_a = 25^\circ\text{C}$

Parameter	Symbol	Rating	Unit
Collector - Base Voltage	V_{CB0}	60	V
Collector - Emitter Voltage	V_{CE0}	50	
Emitter - Base Voltage	V_{EB0}	6	
Collector Current - Continuous	I_C	2	A
Collector Current - Pulse	I_{CP}	4	
Collector Power Dissipation $T_c=25^\circ\text{C}$	P_C	15	W
		0.8	
Junction Temperature	T_J	150	$^\circ\text{C}$
Storage Temperature Range	T_{stg}	-55 to 150	

■ Electrical Characteristics $T_a = 25^\circ\text{C}$

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector- base breakdown voltage	V_{CB0}	$I_C = 100 \mu\text{A}$, $I_E = 0$	60			V
Collector- emitter breakdown voltage	V_{CE0}	$I_C = 1 \text{ mA}$, $R_{BE} = \infty$	50			
Emitter - base breakdown voltage	V_{EB0}	$I_E = 100 \mu\text{A}$, $I_C = 0$	6			
Collector-base cut-off current	I_{CBO}	$V_{CB} = 50 \text{ V}$, $I_E = 0$			0.1	μA
Emitter cut-off current	I_{EBO}	$V_{EB} = 5 \text{ V}$, $I_C = 0$			0.1	
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = 1 \text{ A}$, $I_B = 50 \text{ mA}$		0.15	0.4	V
Base - emitter saturation voltage	$V_{BE(sat)}$	$I_C = 1 \text{ A}$, $I_B = 50 \text{ mA}$		0.9	1.2	
DC current gain	h_{FE}	$V_{CE} = 2 \text{ V}$, $I_C = 100 \text{ mA}$	100		560	
		$V_{CE} = 2 \text{ V}$, $I_C = 1.5 \text{ A}$	40			
Turn-ON Time	t_{on}	See specified Test Circuit		60		ns
Storage Time	t_{stg}			550		
Fall Time	t_f			30		
Collector Output capacitance	C_{ob}	$V_{CB} = 10 \text{ V}$, $I_E = 0$, $f = 1 \text{ MHz}$		12		μF
Transition frequency	f_T	$V_{CE} = 10 \text{ V}$, $I_C = 50 \text{ mA}$		150		MHz

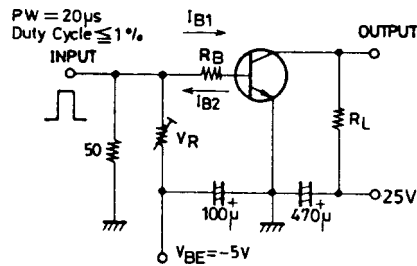
■ Classification of $h_{fe}(1)$

Type	2SD1801-R	2SD1801-S	2SD1801-T	2SD1801-U
Range	100-200	140-280	200-400	280-560

NPN Transistors

2SD1801

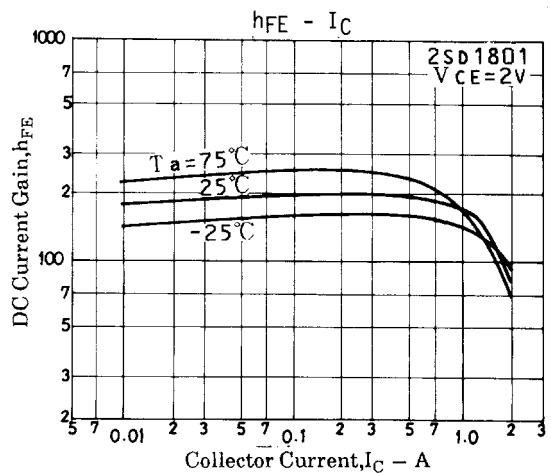
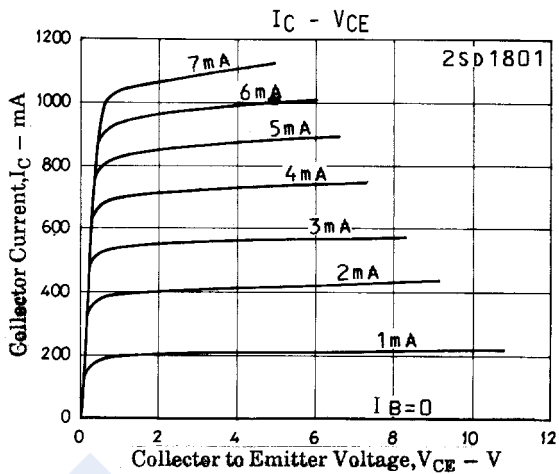
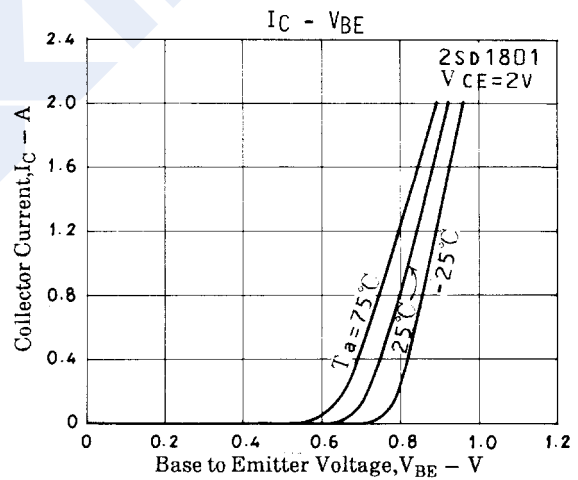
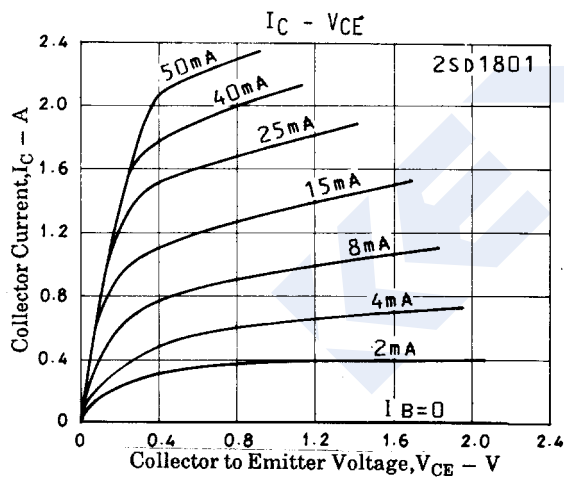
Switching Time Test Circuit



$I_C = 10 I_{B1} = -10 I_{B2} = 500\text{mA}$, $V_{CC} = 25\text{V}$
 (For PNP, the polarity is reversed.)

Unit (resistance : Ω , capacitance : F)

Typical Characteristics



NPN Transistors

2SD1801

■ Typical Characteristics

