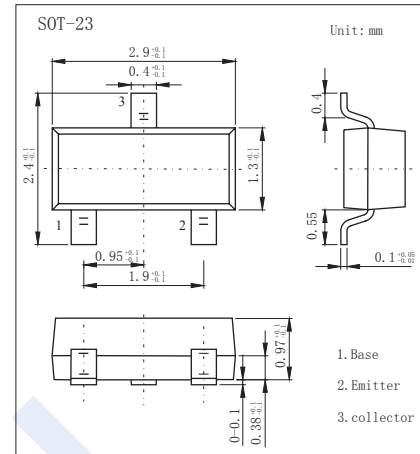


## PNP Transistors

### 2SA2058

#### ■ Features

- High DC current gain:  $h_{FE} = 200$  to  $500$  ( $I_C = -0.2$  A)
- Low collector-emitter saturation voltage:  
 $V_{CE(sat)} = -0.19$  V (max)
- High-speed switching:  $t_f = 25$  ns (typ.)



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

Parameter	Symbol	Rating	Unit
Collector - Base Voltage	$V_{CB0}$	-20	V
Collector - Emitter Voltage	$V_{CE0}$	-10	
Emitter - Base Voltage	$V_{EB0}$	-7	
Collector Current - Continuous	$I_C$	-1.5	A
Collector Current - Pulse	$I_{CP}$	-2.5	
Base Current	$I_B$	-150	mA
Collector Power Dissipation $t=10\text{s}$ (Note.1)	$P_C$	500	mW
		750	
Junction Temperature	$T_J$	150	$^\circ\text{C}$
Storage Temperature range	$T_{stg}$	-55 to 150	

Note.1: Mounted on an FR4 board (glass epoxy, 1.6 mm thick, Cu area:  $645\text{ mm}^2$ )

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector- base breakdown voltage	$V_{CB0}$	$I_C = -100\ \mu\text{A}$ , $I_E = 0$	-20			V
Collector- emitter breakdown voltage	$V_{CE0}$	$I_C = -10\ \text{mA}$ , $I_B = 0$	-10			
Emitter - base breakdown voltage	$V_{EB0}$	$I_E = -100\ \mu\text{A}$ , $I_C = 0$	-7			
Collector-base cut-off current	$I_{CBO}$	$V_{CB} = -20\text{V}$ , $I_E = 0$			-0.1	$\mu\text{A}$
Emitter cut-off current	$I_{EBO}$	$V_{EB} = -7\text{V}$ , $I_C = 0$			-0.1	
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = -600\text{mA}$ , $I_B = -20\text{mA}$			-0.19	V
Base - emitter saturation voltage	$V_{BE(sat)}$	$I_C = -600\text{mA}$ , $I_B = -20\text{mA}$			-1.1	
DC current gain	$h_{FE}$	$V_{CE} = -2\text{V}$ , $I_C = -200\text{mA}$	200		500	
		$V_{CE} = -2\text{V}$ , $I_C = -600\text{mA}$	125			
Rise Time	$t_r$	See Figure 1 circuit diagram.		50		ns
Storage Time	$t_{stg}$	$V_{CC} = -6\text{V}$ , $R_L = 10\ \Omega$		115		
Fall Time	$t_f$	$-I_{B1} = I_{B2} = -20\ \text{mA}$		25		
Collector output capacitance	$C_{ob}$	$V_{CB} = -10\text{V}$ , $I_E = 0$ , $f = 1\text{MHz}$		12		pF

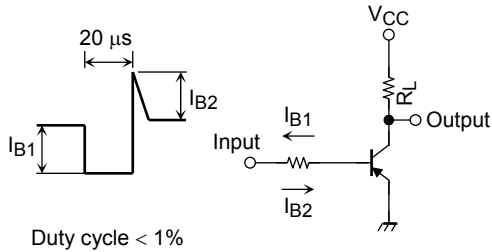
#### ■ Marking

Marking	WM
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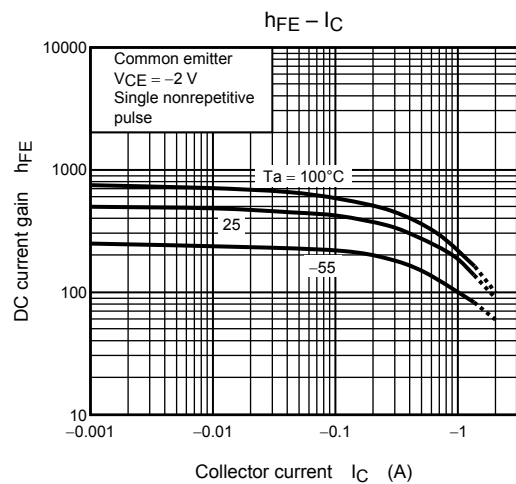
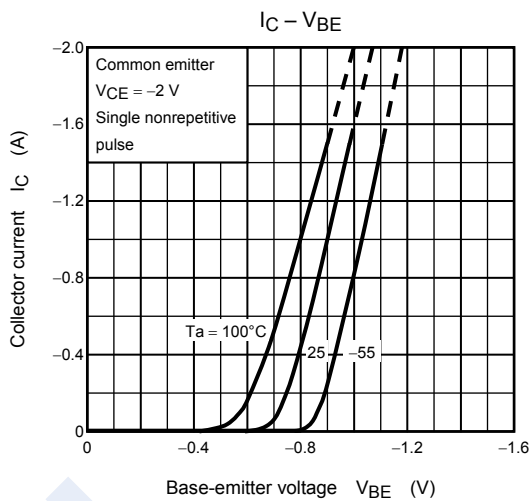
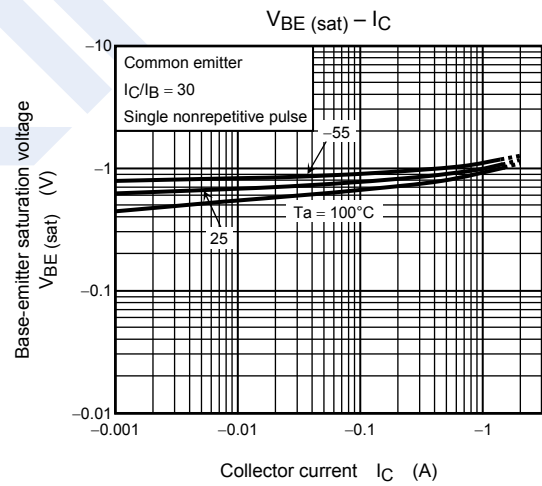
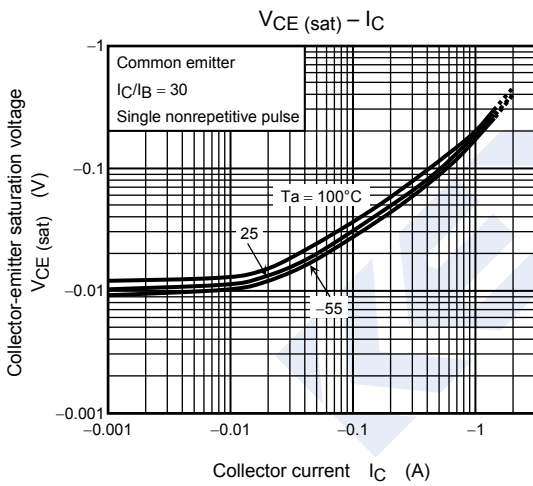
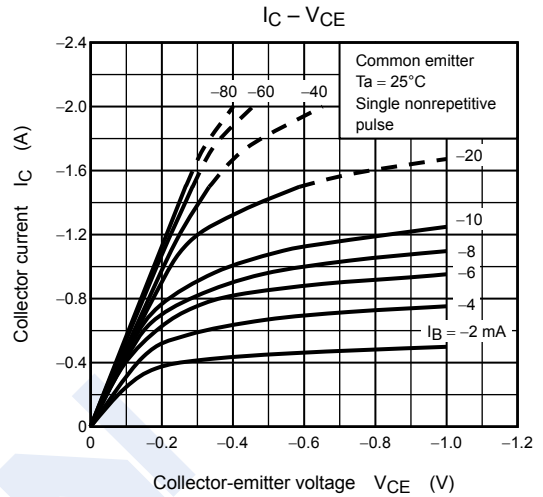
# PNP Transistors

## 2SA2058

■ Typical Characteristics



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



## PNP Transistors 2SA2058

■ Typical Characteristics

