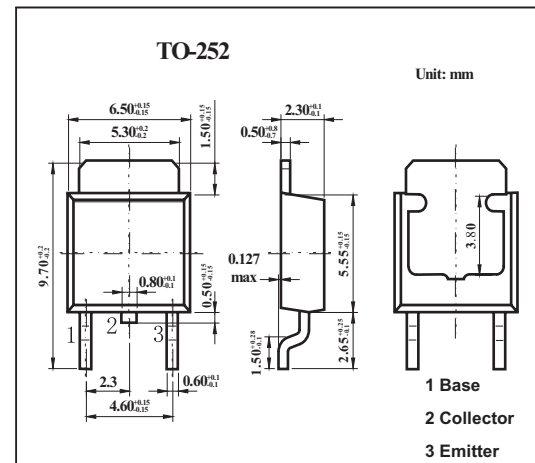


NPN Epitaxial Planar Silicon Transistor

2SC4027

■ Features

- High voltage and large current capacity
- Adoption of MBIT process
- Fast switching time

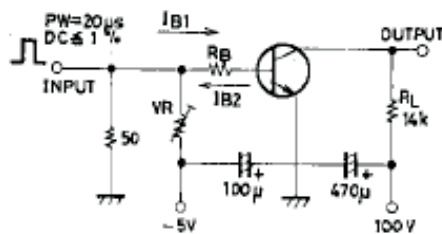
■ Absolute Maximum Ratings $T_a = 25^\circ\text{C}$

Parameter	Symbol	Rating	Unit
Collector to base voltage	V_{CB0}	180	V
Collector to emitter voltage	V_{CE0}	160	V
Emitter to base voltage	V_{EB0}	6	V
Collector current (DC)	I_c	1.5	A
Collector current (Pulse)	I_{cp}	2.5	A
Total Power dissipation $T_a = 25^\circ\text{C}$ $T_c = 25^\circ\text{C}$	P_c	1	W
		15	W
Junction temperature	T_j	150	$^\circ\text{C}$
Storage temperature	T_{stg}	-55 to +150	$^\circ\text{C}$

2SC4027■ Electrical Characteristics $T_a = 25^\circ\text{C}$

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
collector cutoff current	I_{CBO}	$V_{CB}=120\text{V}, I_E=0$			1.0	μA
emitter cutoff current	I_{EBO}	$V_{EB}=4\text{V}, I_C=0$			1.0	μA
DC current Gain	h_{FE}	$V_{CE}=5\text{V}, I_C=100\text{mA}$	100		400	
		$V_{CE}=5\text{V}, I_C=10\text{mA}$	80			
Gain-Bandwidth Product	f_T	$V_{CE}=10\text{V}, I_C=50\text{mA}$		120		MHz
Output Capacitance	C_{ob}	$V_{CB}=10\text{V}, f=1\text{MHz}$		12		pF
C-E Saturation Voltage	$V_{CE(sat)}$	$I_C=50\text{mA}, I_B=50\text{mA}$		0.13	0.45	V
B-E Saturation Voltage	$V_{BE(sat)}$	$I_C=50\text{mA}, I_B=50\text{mA}$		0.85	1.2	V
C-B Breakdown Voltage	$V_{(BR)CBO}$	$I_C=10\mu\text{A}, I_E=0$	180			V
C-E Breakdown Voltage	$V_{(BR)CEO}$	$I_C=1\text{mA}, R_{BE}=\infty$	160			V
E-B Breakdown Voltage	$V_{(BR)EBO}$	$I_E=10\mu\text{A}, I_C=0$	6			V
Turn-ON Time	t_{on}	see specified Test Circuit		60		μs
Storage Time	t_{stg}			1.2		μs
Turn-OFF Time	t_{off}			80		μs

■ Switching Time Test Circuit



$10I_{B1} = -10I_{B2} = I_C = 0.7\text{A}$
For PNP, the polarity is reversed.

Unit (Resistance : Ω , Capacitance : F)

■ h_{FE} Classification

Marking	R	S	T
h_{FE}	100 to 120	140 to 280	200 to 400