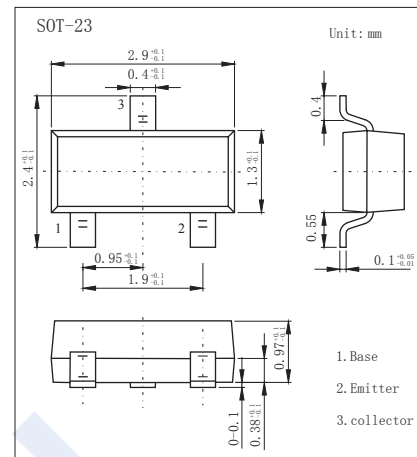


## NPN Transistors

## 2SC3143

## ■ Features

- High breakdown voltage
- Small output capacitance.
- Complementary to 2SA1257

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

Parameter	Symbol	Rating	Unit
Collector - Base Voltage	$V_{CB0}$	180	V
Collector - Emitter Voltage	$V_{CE0}$	160	
Emitter - Base Voltage	$V_{EB0}$	5	
Collector Current - Continuous	$I_c$	80	mA
Collector Current - Pulse	$I_{cp}$	150	
Collector Power Dissipation	$P_c$	200	mW
Junction Temperature	$T_J$	125	$^\circ\text{C}$
Storage Temperature Range	$T_{stg}$	-55 to 125	

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector- base breakdown voltage	$V_{CB0}$	$I_c = 100 \mu\text{A}, I_E = 0$	180			V
Collector- emitter breakdown voltage	$V_{CE0}$	$I_c = 1 \text{ mA}, R_{BE} = \infty$	160			
Emitter - base breakdown voltage	$V_{EB0}$	$I_E = 100 \mu\text{A}, I_c = 0$	5			
Collector-Base cut-off current	$I_{CB0}$	$V_{CB} = 120 \text{ V}, I_E = 0$			0.1	uA
Emitter cut-off current	$I_{EB0}$	$V_{EB} = 4 \text{ V}, I_c = 0$			0.1	
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_c = 30 \text{ mA}, I_B = 3 \text{ mA}$			0.7	V
Base - emitter saturation voltage	$V_{BE(sat)}$	$I_c = 30 \text{ mA}, I_B = 3 \text{ mA}$			1.2	
Base - emitter voltage	$V_{BE}$	$V_{CE} = 5 \text{ V}, I_c = 10 \text{ mA}$			1.5	
DC current gain	$h_{FE}$	$V_{CE} = 5 \text{ V}, I_c = 10 \text{ mA}$	60		270	
Turn-ON Time	$t_{on}$	See specified Test Circuit		0.18		us
Storage Time	$t_{stg}$			1		
Fall Time	$t_f$			0.2		
Collector output capacitance	$C_{ob}$	$V_{CB} = 10 \text{ V}, f = 10 \text{ MHz}$		2	2.8	pF
Transition frequency	$f_T$	$V_{CE} = 10 \text{ V}, I_c = 10 \text{ mA}$		150		MHz

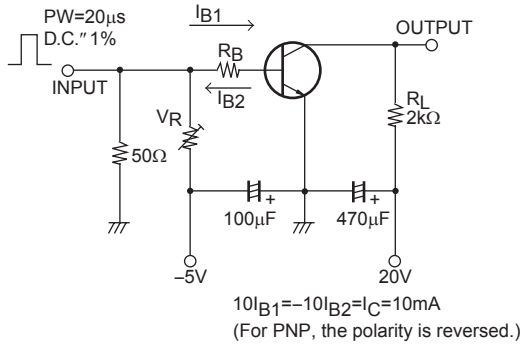
■ Classification of  $h_{FE}$ 

Marking	K3	K4	K5
Range	60-120	90-180	135-270

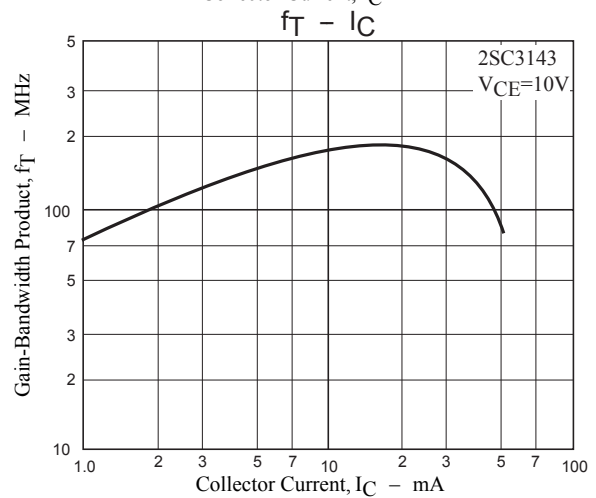
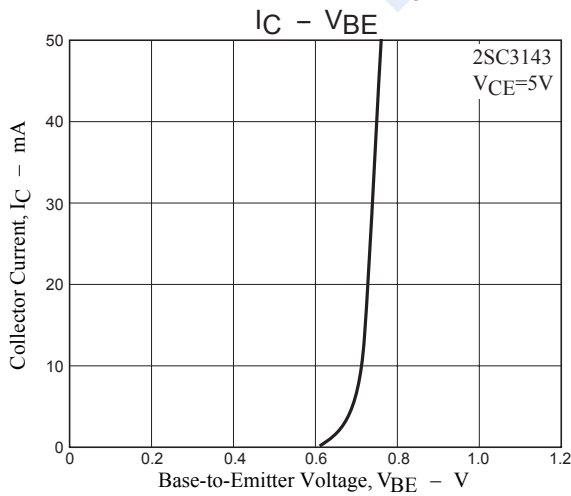
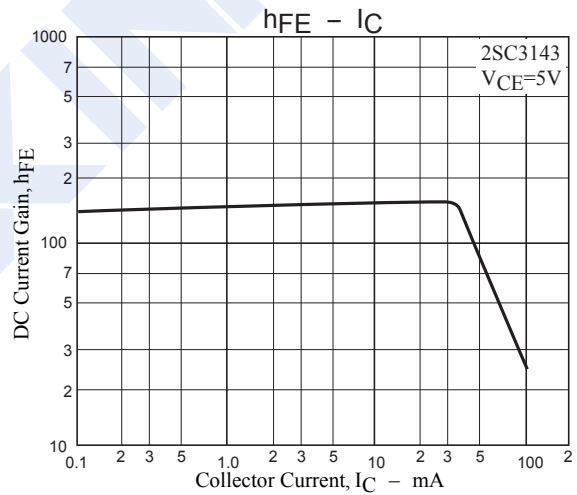
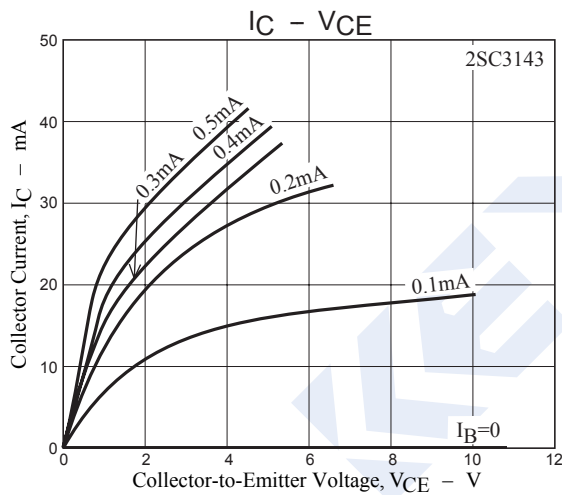
## NPN Transistors

### 2SC3143

#### Switching Time Test Circuit



#### Typical Characteristics



## NPN Transistors

## 2SC3143

## ■ Typical Characteristics

