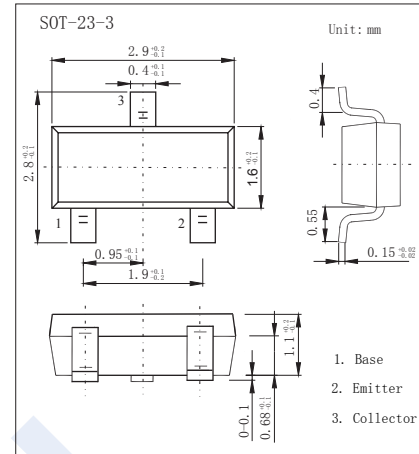


NPN Transistors

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

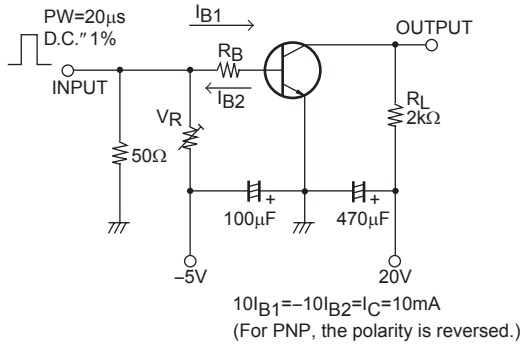
■ Classification of h_{FE}

Type	2SC3143-K3	2SC3143-K4	2SC3143-K5
Range	60-120	90-180	135-270
Marking	K3	K4	K5

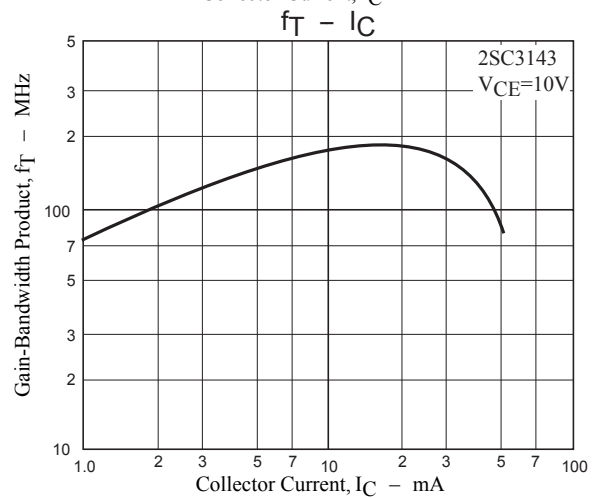
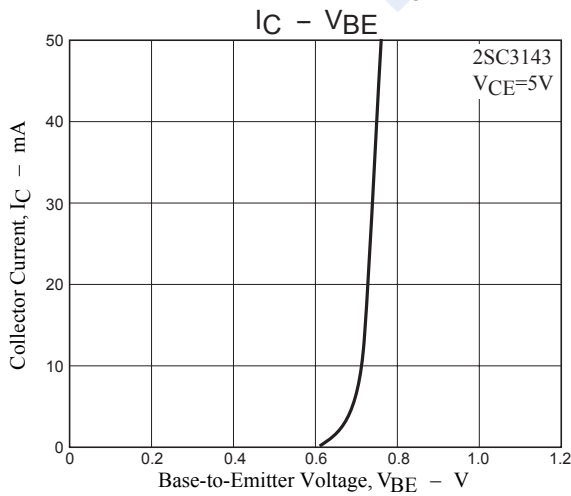
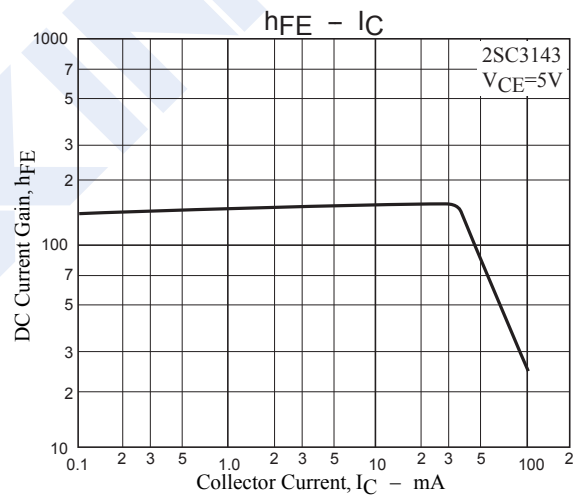
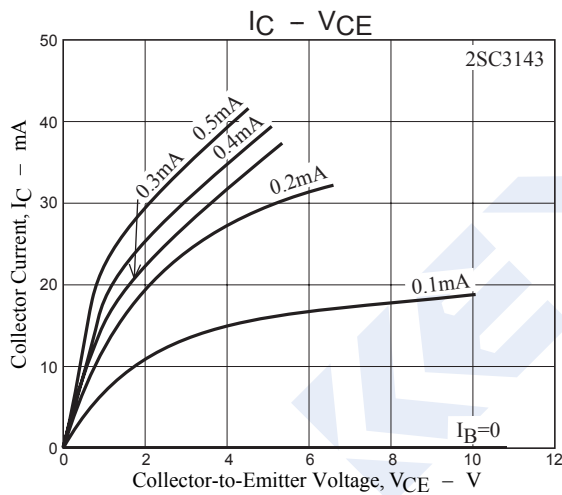
NPN Transistors

2SC3143

Switching Time Test Circuit



■ Typical Characteristics



NPN Transistors

2SC3143

■ Typical Characteristics

