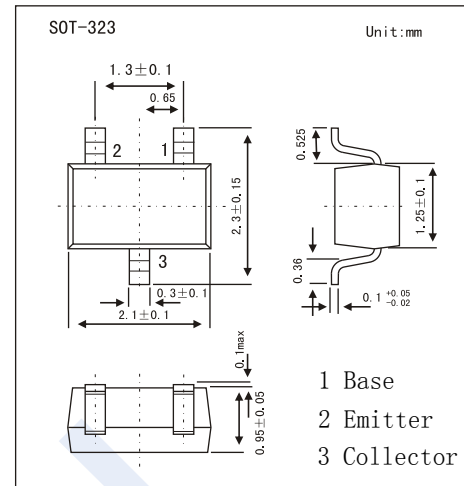


NPN Transistors

2SC4177

■ Features

- High DC Current Gain: $h_{FE}=200(\text{typ})$
- High Voltage: $V_{CE0}=50V$
- Complementary to 2SA1611

■ 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}	5	
Collector Current - Continuous	I_c	100	mA
Collector Power Dissipation	P_c	150	mW
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}	$I_c = 1 \text{ mA}, I_B = 0$	50			
Emitter - base breakdown voltage	V_{EB0}	$I_E = 100 \mu\text{A}, I_C = 0$	5			
Collector-base cut-off current	I_{CB0}	$V_{CB} = 60V, I_E = 0$			0.1	μA
Emitter cut-off current	I_{EB0}	$V_{EB} = 5V, I_C = 0$			0.1	
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_c = 100 \text{ mA}, I_B = 10 \text{ mA}$		0.15	0.3	V
Base - emitter saturation voltage	$V_{BE(sat)}$	$I_c = 100 \text{ mA}, I_B = 10 \text{ mA}$		0.86	1	
Base - emitter voltage	V_{BE}	$V_{CE} = 6V, I_c = 1 \text{ mA}$	0.55	0.62	0.65	
DC current gain *1	h_{FE}	$V_{CE} = 6V, I_c = 1 \text{ mA}$	90	200	600	
Collector output capacitance	C_{ob}	$V_{CB} = 6V, I_E = 0, f = 1 \text{ MHz}$		3		pF
Transition frequency	f_T	$V_{CE} = 6V, I_E = -10 \text{ mA}$		250		MHz

*1 : Pulse: $P_w \leq 350 \mu\text{s}$ Duty Cycle $\leq 2\%$

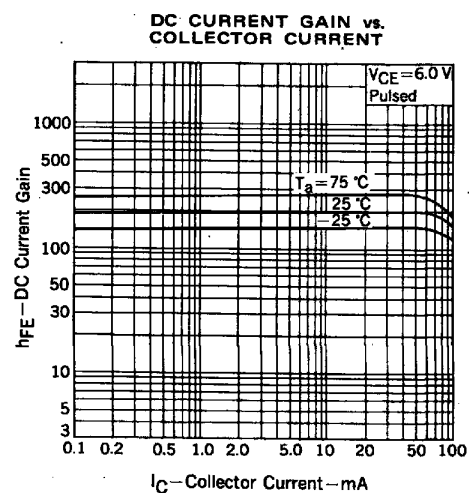
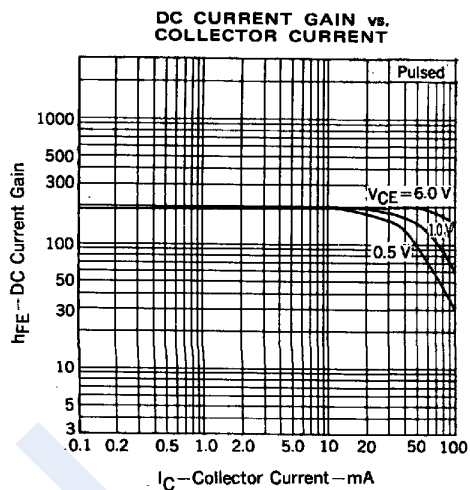
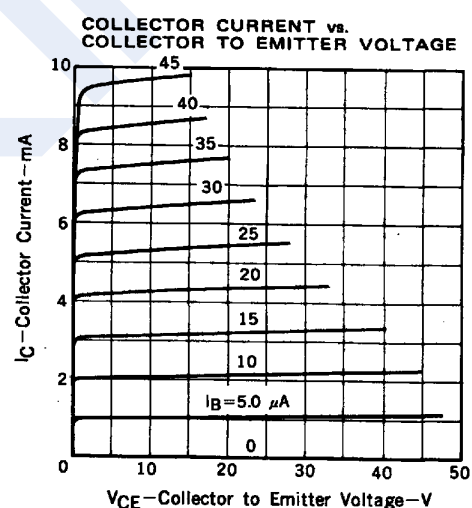
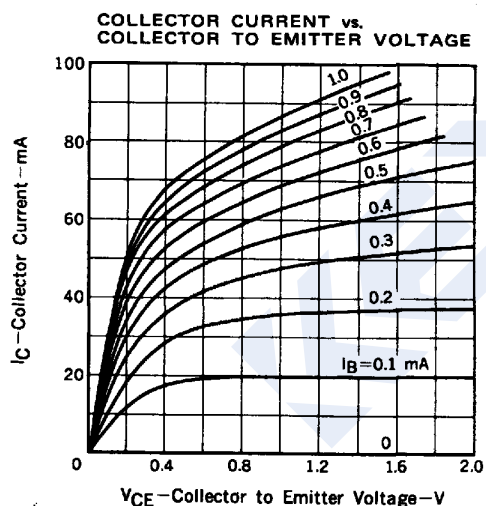
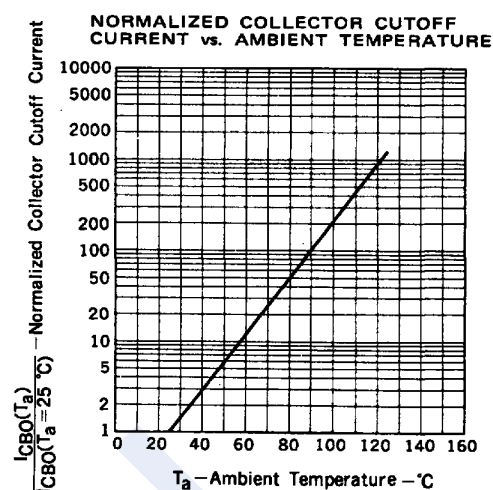
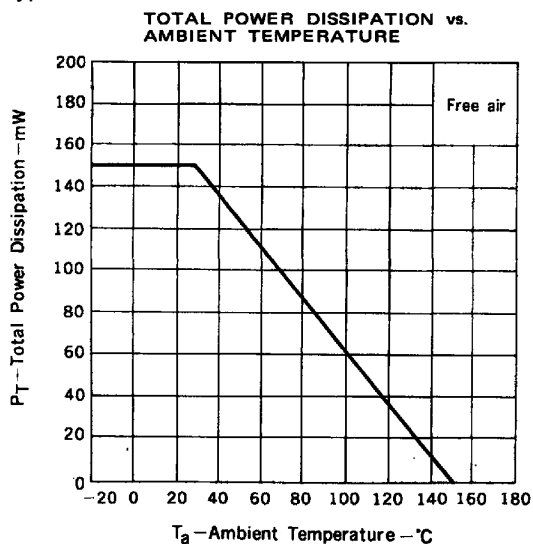
■ Classification of h_{FE}

Type	2SC4177-L4	2SC4177-L5	2SC4177-L6	2SC4177-L7
Range	90-180	135-270	200-400	300-600
Marking	L4	L5	L6	L7

NPN Transistors

2SC4177

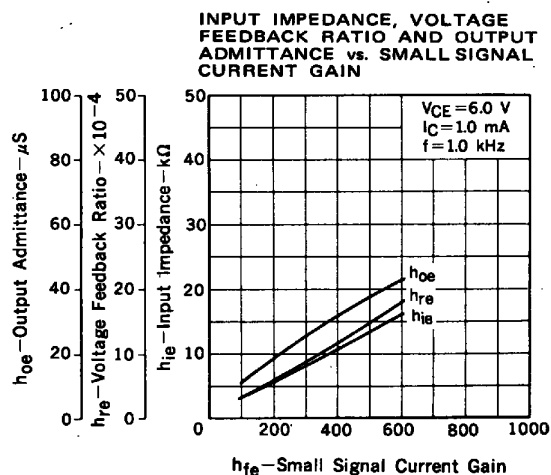
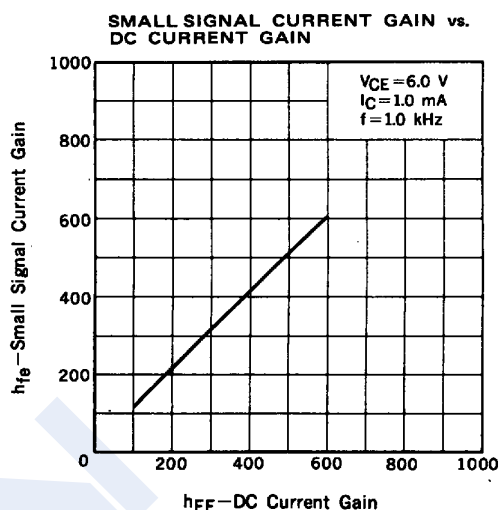
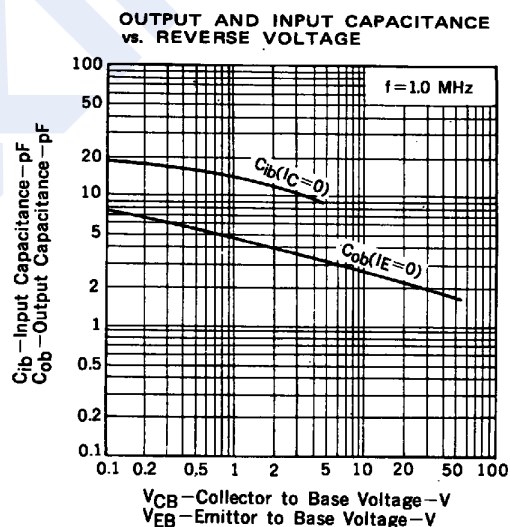
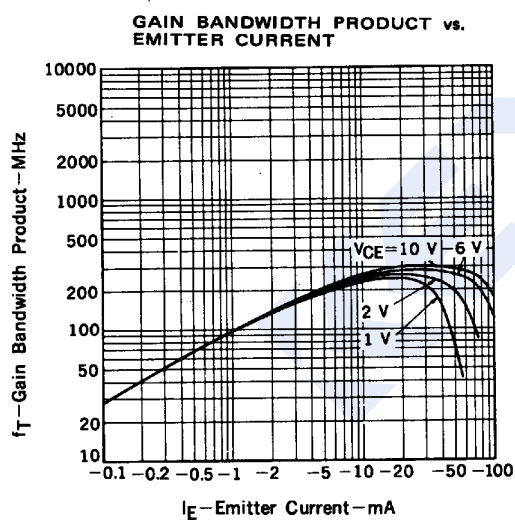
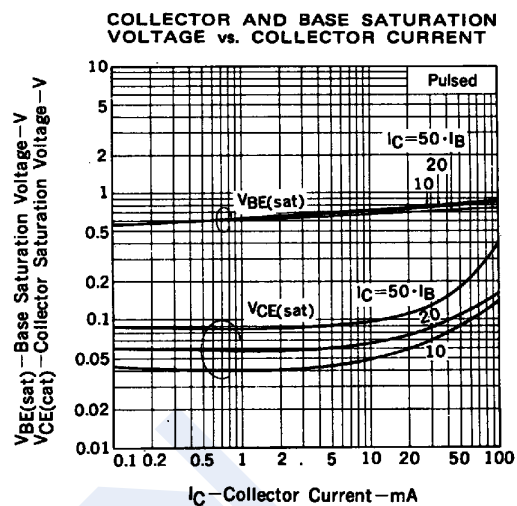
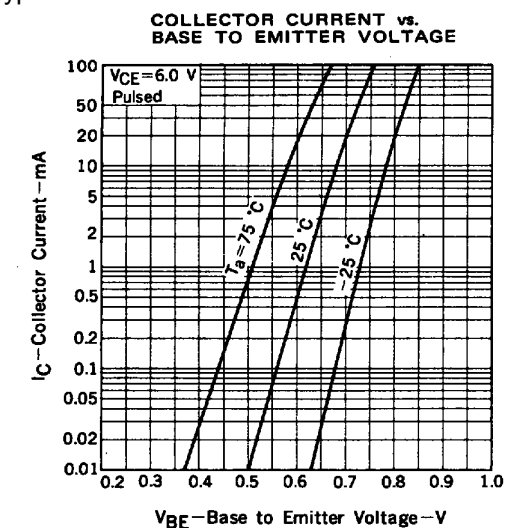
■ Typical Characteristics



NPN Transistors

2SC4177

■ Typical Characteristics



NPN Transistors

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■ Typical Characteristics

