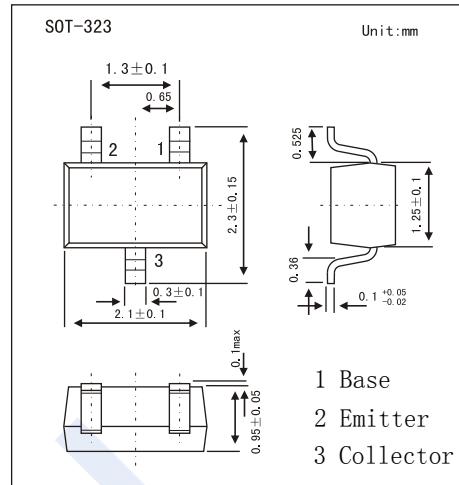


NPN Transistors**2SC4177****■ Features**

- High DC Current Gain: $hFE=200$ (typ)
- High Voltage: $V_{CEO}=50V$
- Complementary to 2SA1611

**■ Absolute Maximum Ratings $T_a = 25^\circ C$**

Parameter	Symbol	Rating	Unit
Collector - Base Voltage	V_{CBO}	60	V
Collector - Emitter Voltage	V_{CEO}	50	
Emitter - Base Voltage	V_{EBO}	5	
Collector Current - Continuous	I_C	100	
Collector Power Dissipation	P_C	150	mW
Junction Temperature	T_J	150	$^\circ C$
Storage Temperature Range	T_{stg}	-55 to 150	

■ Electrical Characteristics $T_a = 25^\circ C$

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	V_{CBO}	$I_C = 100 \mu A, I_E = 0$	60			V
Collector-emitter breakdown voltage	V_{CEO}	$I_C = 1 mA, I_B = 0$	50			
Emitter-base breakdown voltage	V_{EBO}	$I_E = 100 \mu A, I_C = 0$	5			
Collector-base cut-off current	I_{CBO}	$V_{CB} = 60V, I_E = 0$			0.1	μA
Emitter cut-off current	I_{EBO}	$V_{EB} = 5V, I_C = 0$			0.1	
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = 100 mA, I_B = 10mA$		0.15	0.3	V
Base-emitter saturation voltage	$V_{BE(sat)}$	$I_C = 100 mA, I_B = 10mA$		0.86	1	
Base-emitter voltage	V_{BE}	$V_{CE} = 6V, I_C = 1mA$	0.55	0.62	0.65	
DC current gain *1	h_{FE}	$V_{CE} = 6V, I_C = 1mA$	90	200	600	
Collector output capacitance	C_{ob}	$V_{CB} = 6V, I_E = 0, f = 1MHz$		3		pF
Transition frequency	f_T	$V_{CE} = 6V, I_E = -10mA$		250		MHz

*1 :Pulse:Pw $\leqslant 350\mu s$ Duty Cycle $\leqslant 2\%$

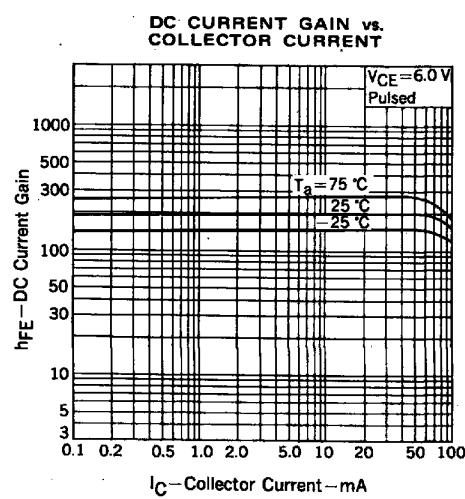
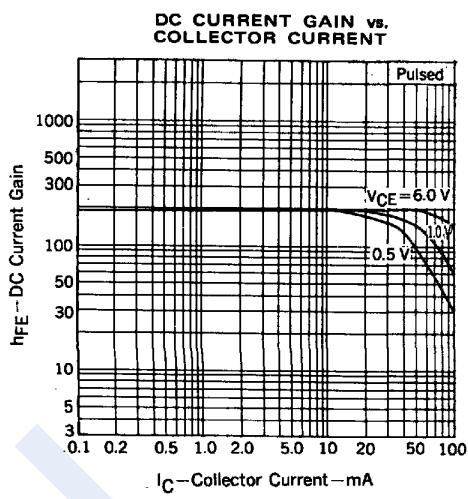
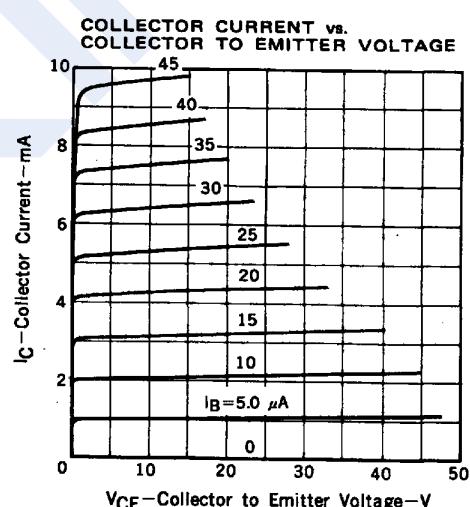
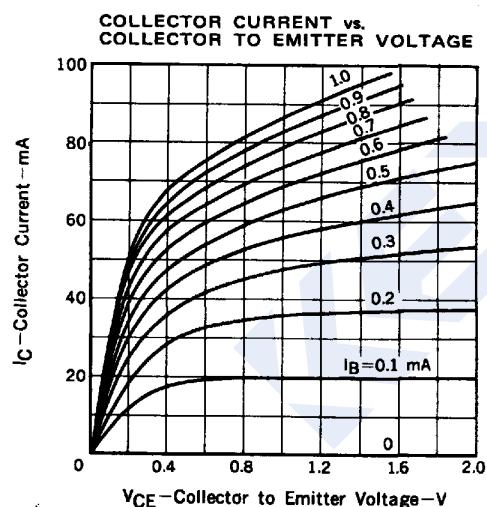
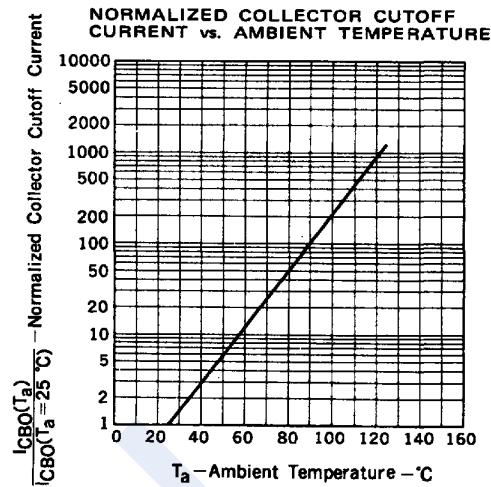
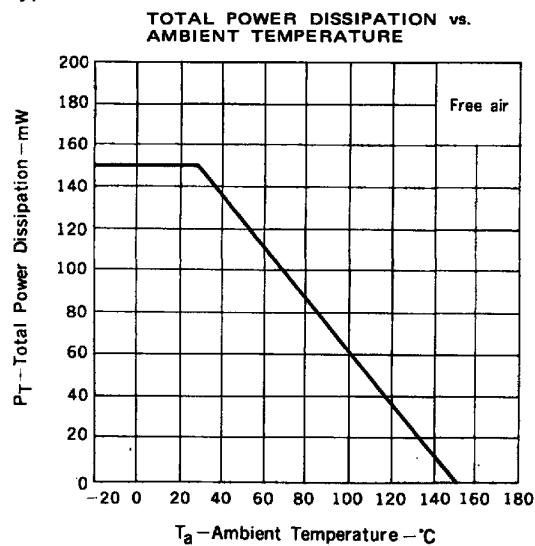
■ Classification of h_{FE}

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

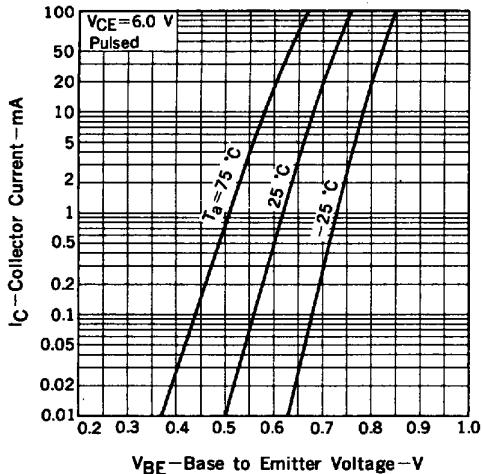
■ Typical Characteristics



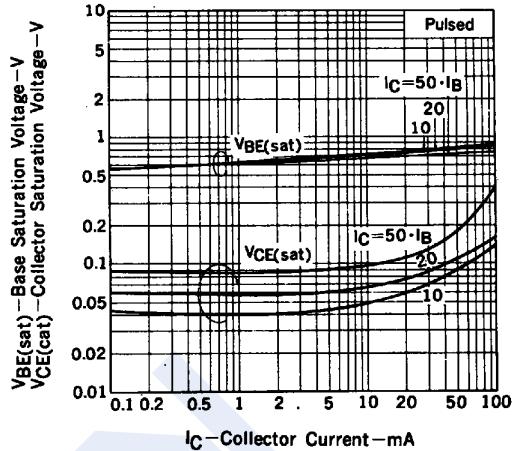
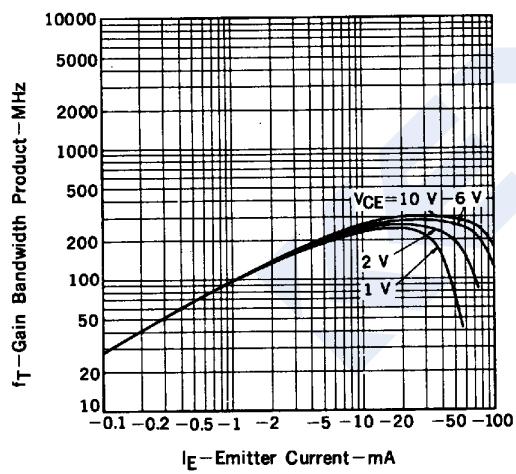
NPN Transistors

2SC4177

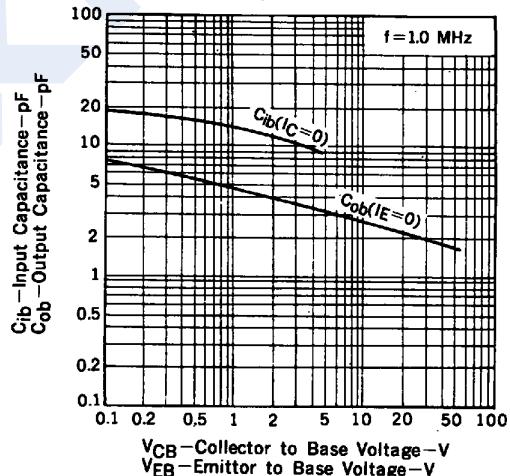
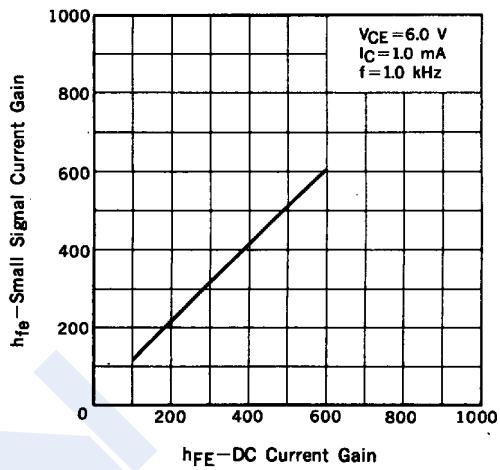
■ Typical Characteristics

COLLECTOR CURRENT vs.
BASE TO Emitter VOLTAGE

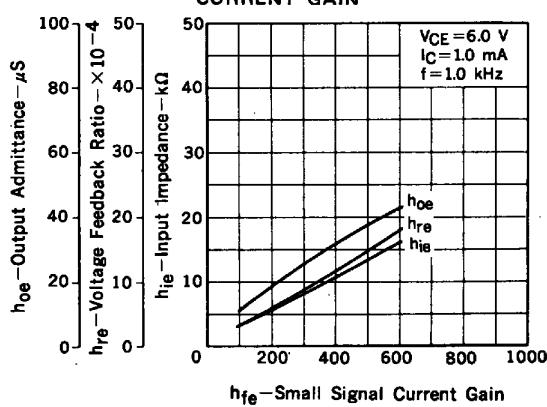
COLLECTOR AND BASE SATURATION VOLTAGE vs. COLLECTOR CURRENT

GAIN BANDWIDTH PRODUCT vs.
EMITTER CURRENT

OUTPUT AND INPUT CAPACITANCE vs. REVERSE VOLTAGE

SMALL SIGNAL CURRENT GAIN vs.
DC CURRENT GAIN

INPUT IMPEDANCE, VOLTAGE FEEDBACK RATIO AND OUTPUT ADMITTANCE vs. SMALL SIGNAL CURRENT GAIN



NPN Transistors**2SC4177**

■ Typical Characteristics

