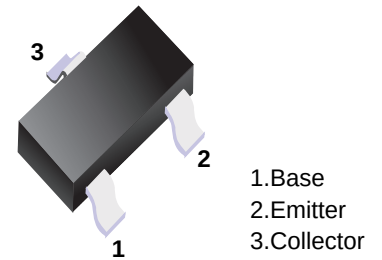


■ NPN Transistor



■ Features

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

■ Simplified outline(SOT-323)

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

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	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 $T_a = 25^\circ\text{C}$

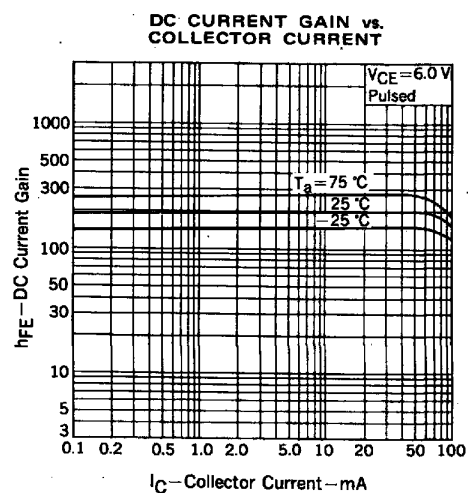
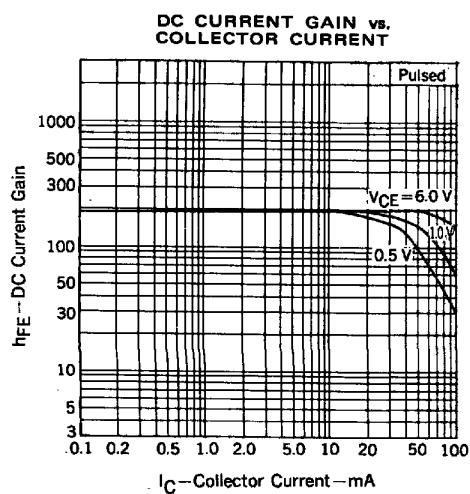
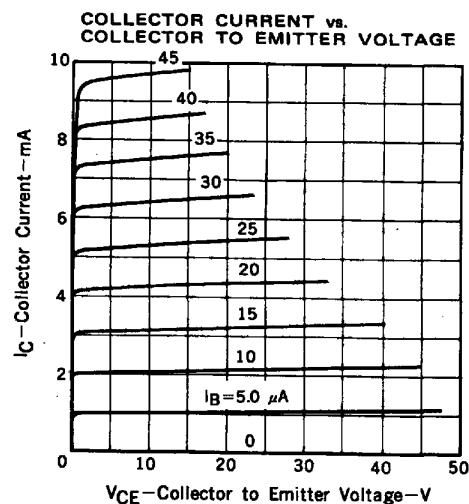
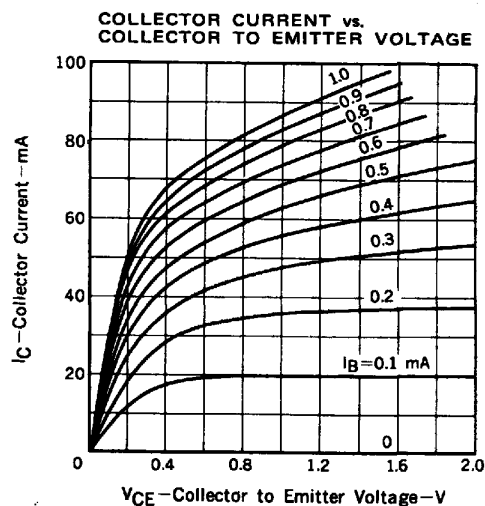
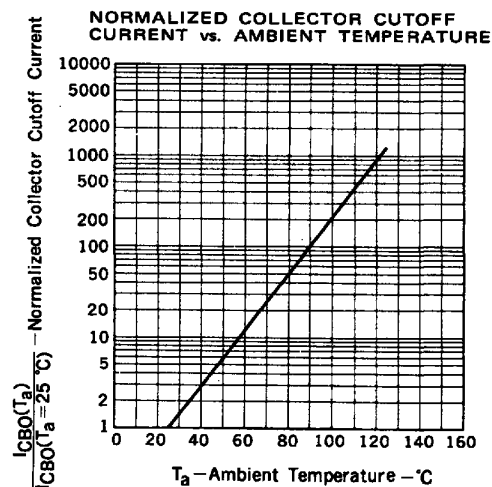
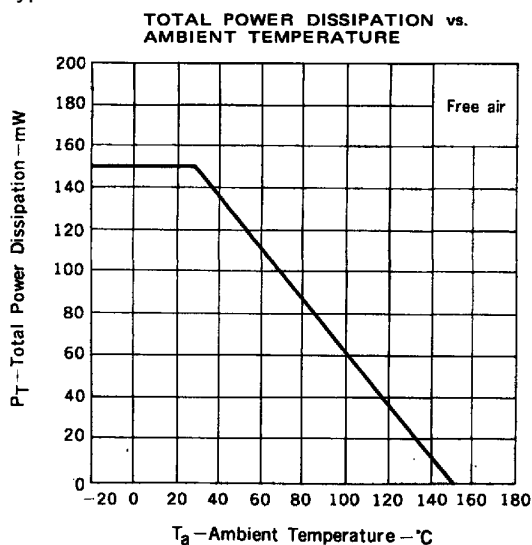
Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector- base breakdown voltage	V_{CBO}	$I_C = 100\text{ }\mu\text{A}, I_E = 0$	60			V
Collector- emitter breakdown voltage	V_{CEO}	$I_C = 1\text{ mA}, I_B = 0$	50			
Emitter - base breakdown voltage	V_{EBO}	$I_E = 100\text{ }\mu\text{A}, I_C = 0$	5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

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

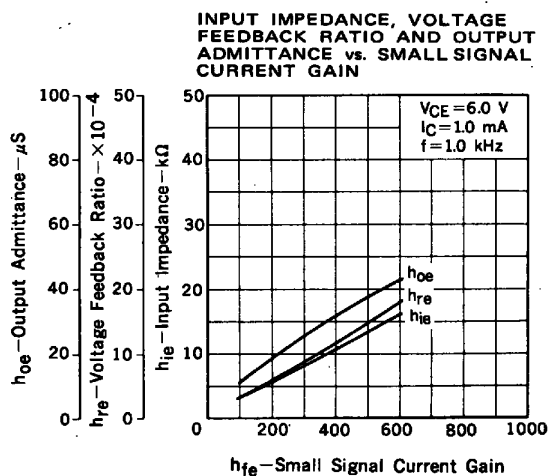
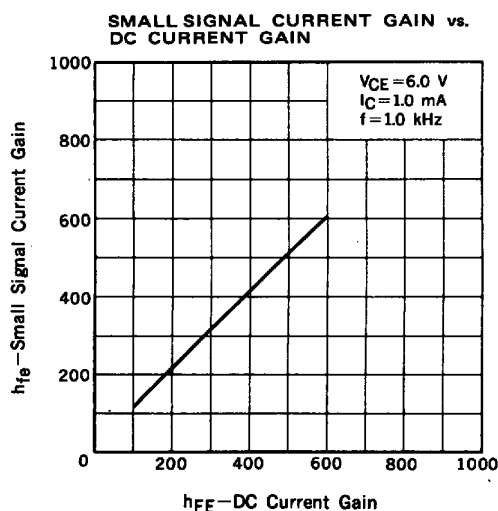
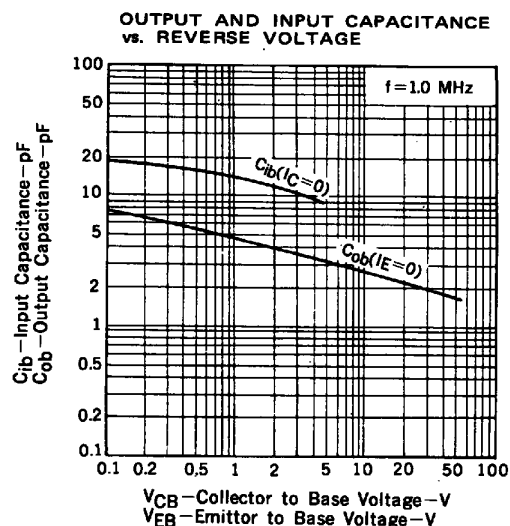
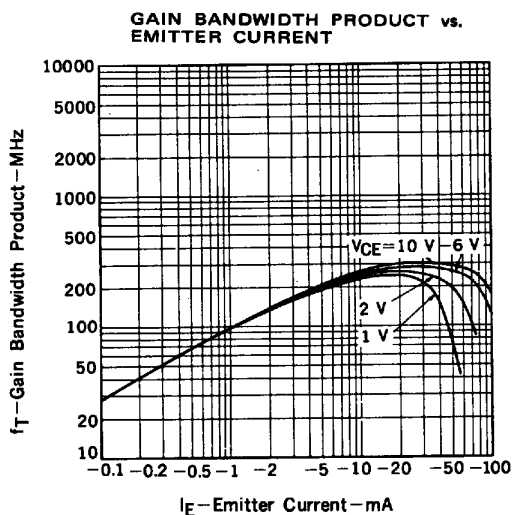
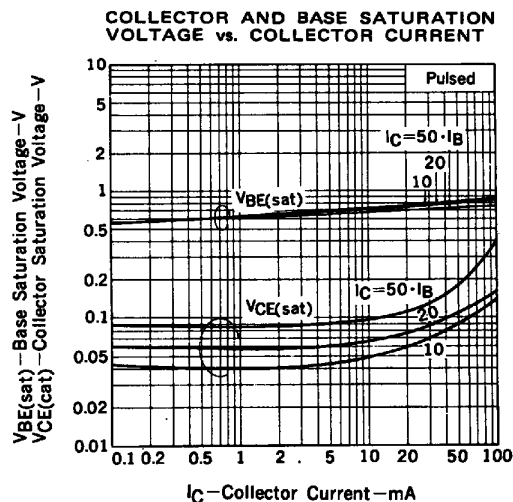
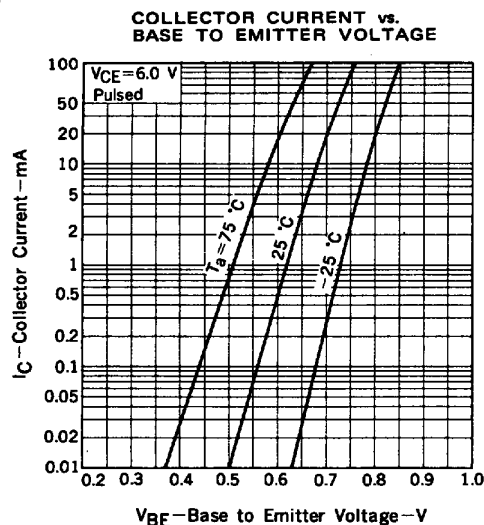
■ Classification of h_{fe}

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

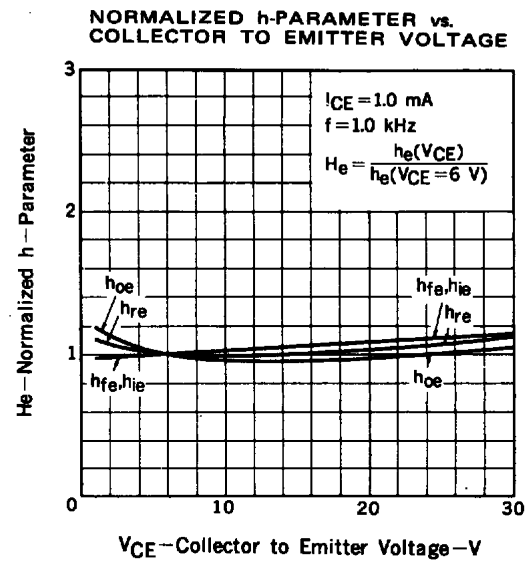
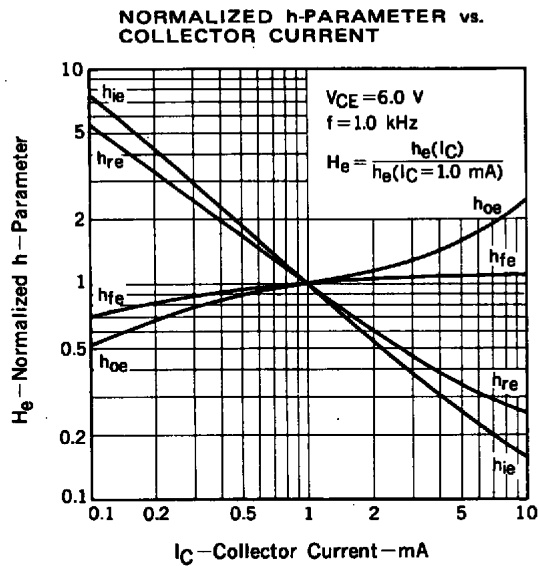
■ Typical Characteristics



■ Typical Characteristics

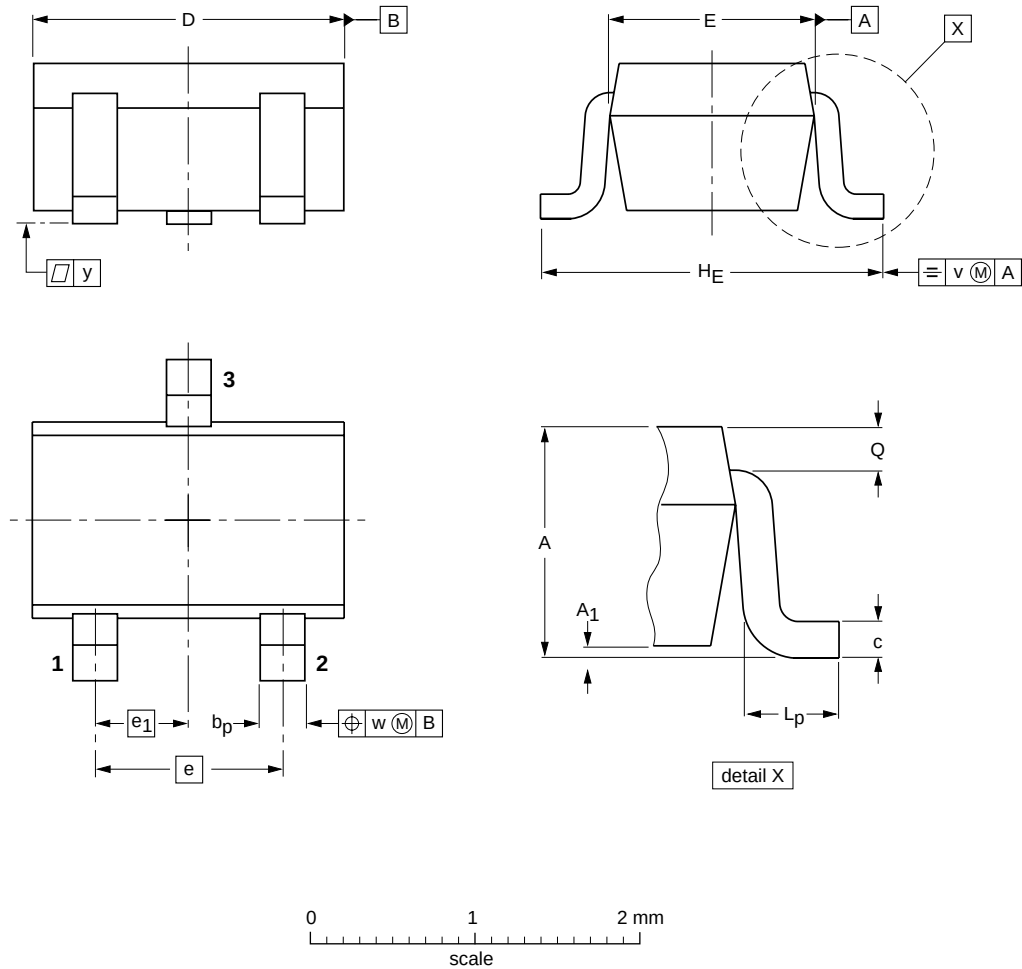


■ Typical Characteristics



Package Outline

SOT-323



DIMENSIONS (mm are the original dimensions)

UNIT	A	A ₁ max	b _p	c	D	E	e	e ₁	H _E	L _p	Q	v	w
mm	1.1 0.8	0.1	0.4 0.3	0.25 0.10	2.2 1.8	1.35 1.15	1.3	0.65	2.2 2.0	0.45 0.15	0.23 0.13	0.2	0.2

Summary of Packing Options

Package	Package Description	Packing Quantity	Industry Standard
SOT-323	Tape/Reel, 7" reel	3000	EIA-481-1