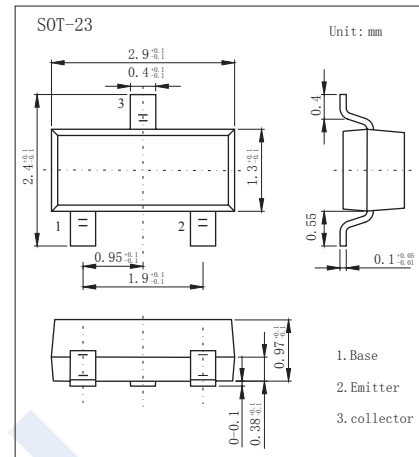


NPN Transistors

2SD1048

■ Features

- Large current capacity ($I_c=0.7A$) and low-saturation voltage.
- Complimentary to 2SB815



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

Parameter	Symbol	Rating	Unit
Collector - Base Voltage	V_{CB0}	20	V
Collector - Emitter Voltage	V_{CE0}	15	
Emitter - Base Voltage	V_{EB0}	5	
Collector Current - Continuous	I_c	700	mA
Collector Current - Pulse	I_{CP}	1.5	A
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}	$I_c = 100 \mu\text{A}, I_E = 0$	20			V
Collector- emitter breakdown voltage	V_{CE0}	$I_c = 1 \text{ mA}, I_B = 0$	15			
Emitter - base breakdown voltage	V_{EB0}	$I_E = 100 \mu\text{A}, I_c = 0$	5			
Collector-base cut-off current	I_{CB0}	$V_{CB} = 15 \text{ V}, I_E = 0$			0.1	μA
Emitter cut-off current	I_{EB0}	$V_{EB} = 4 \text{ V}, I_c = 0$			0.1	
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_c = 5 \text{ mA}, I_B = 0.5 \text{ mA}$		10	25	mV
		$I_c = 100 \text{ mA}, I_B = 10 \text{ mA}$		30	80	
Base - emitter saturation voltage	$V_{BE(sat)}$	$I_c = 100 \text{ mA}, I_B = 10 \text{ mA}$			1.2	V
DC current gain	$h_{FE(1)}$	$V_{CE} = 2 \text{ V}, I_c = 50 \text{ mA}$	200		900	
	$h_{FE(2)}$	$V_{CE} = 2 \text{ V}, I_c = 500 \text{ mA}$	80			
Collector output capacitance	C_{ob}	$V_{CB} = 10 \text{ V}, I_E = 0, f = 1 \text{ MHz}$		8		pF
Transition frequency	f_T	$V_{CE} = 10 \text{ V}, I_c = 50 \text{ mA}$		250		MHz

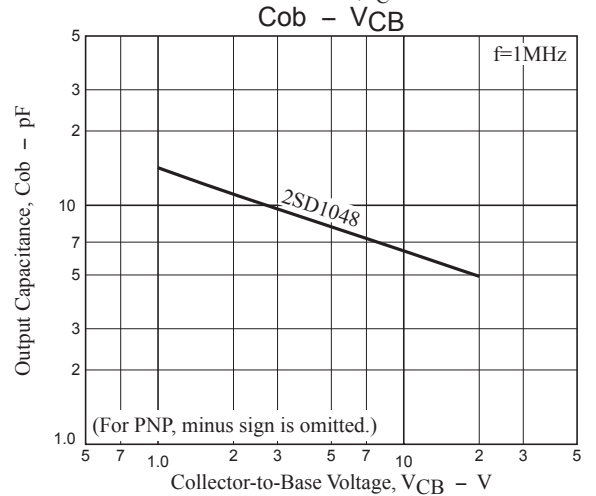
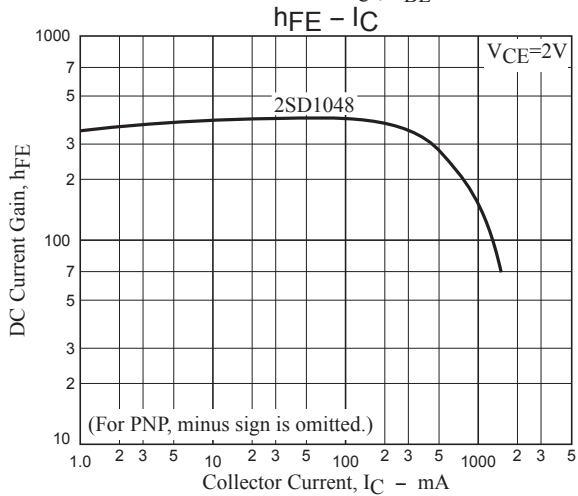
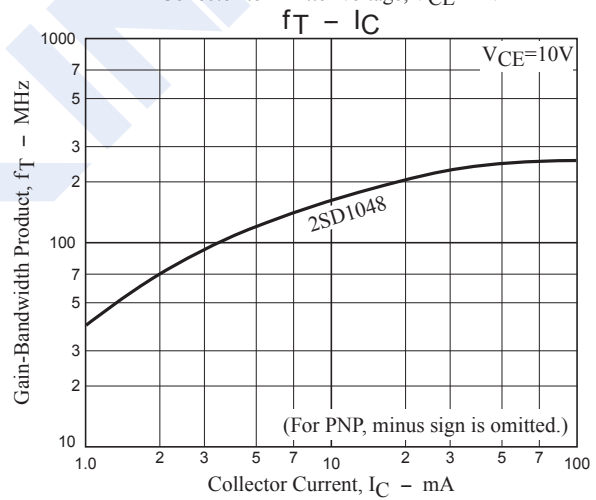
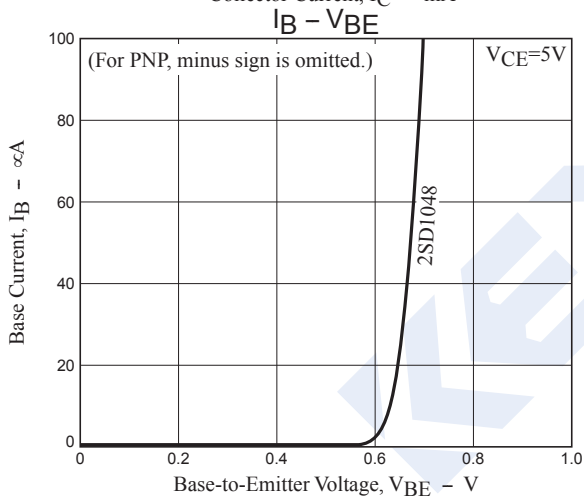
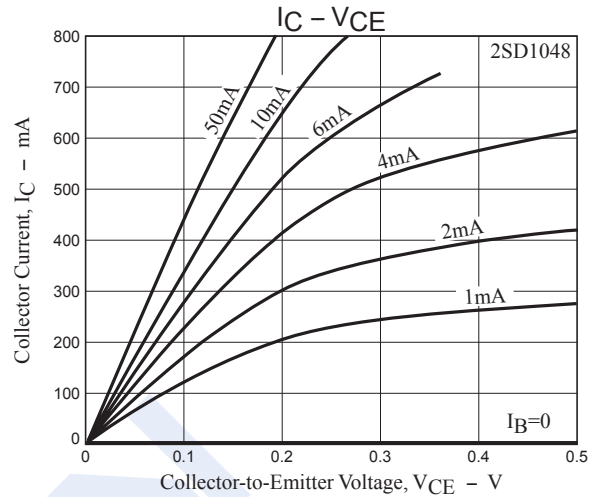
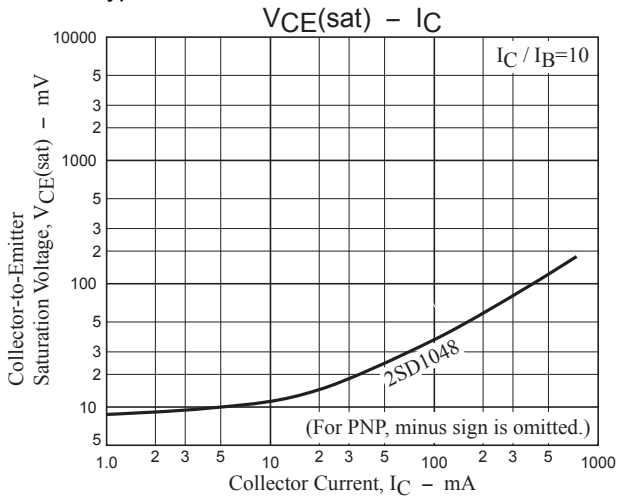
■ Classification of $h_{FE(1)}$

Type	2SD1048-X6	2SD1048-X7	2SD1048-X8
Range	200-400	300-600	450-900
Marking	X6	X7	X8

NPN Transistors

2SD1048

■ Typical Characteristics



NPN Transistors

2SD1048

■ Typical Characteristics

