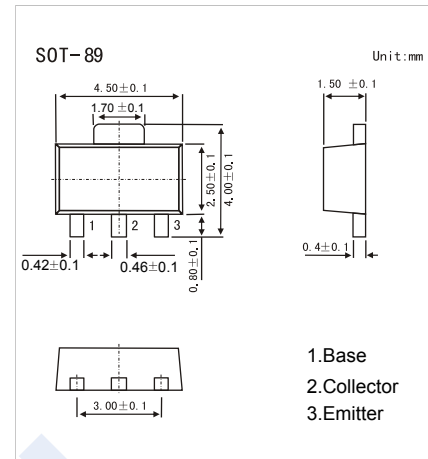


## NPN Transistors

### 2SD1622-HF

#### ■ Features

- Very small size making it easy to provide highdensity, small-sized hybrid IC's.
- Complementary to 2SB1122-HF
- Pb-Free Package May be Available. The G-Suffix Denotes a Pb-Free Lead Finish



#### ■ 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	$I_C$	1	A
Collector Current - Pulse	$I_{CP}$	2	
Collector Power Dissipation (Note.1)	$P_C$	0.5 1.3	W
Junction Temperature	$T_J$	150	
Storage Temperature Range	$T_{stg}$	-55 to 150	$^\circ\text{C}$

Note.1: Mounted on ceramic board (250mm<sup>2</sup> × 0.8mm)

#### ■ 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	$V_{CE0}$	$I_C = 1 \text{ mA}$ , $R_{BE} = \infty$	50			
Emitter - base breakdown voltage	$V_{EB0}$	$I_E = 100 \mu\text{A}$ , $I_C = 0$	5			
Collector-base cut-off current	$I_{CB0}$	$V_{CB} = 50 \text{ V}$ , $I_E = 0$			0.1	$\mu\text{A}$
Emitter cut-off current	$I_{EB0}$	$V_{EB} = 4 \text{ V}$ , $I_C = 0$			0.1	
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = 500 \text{ mA}$ , $I_B = 50 \text{ mA}$		0.12	0.3	V
Base - emitter saturation voltage	$V_{BE(sat)}$	$I_C = 500 \text{ mA}$ , $I_B = 50 \text{ mA}$		0.9	1.2	
DC current gain	$h_{FE}$	$V_{CE} = 2 \text{ V}$ , $I_C = 100 \text{ mA}$	100		560	
		$V_{CE} = 2 \text{ V}$ , $I_C = 1 \text{ A}$	30			
Turn-ON Time	$t_{on}$	See specified Test Circuit.		40		ns
Storage Time	$t_{stg}$			350		
Fall Time	$t_f$			30		
Collector output capacitance	$C_{ob}$	$V_{CB} = 10 \text{ V}$ , $I_E = 0$ , $f = 1 \text{ MHz}$		8.5		$\mu\text{F}$
Transition frequency	$f_T$	$V_{CE} = 10 \text{ V}$ , $I_C = 50 \text{ mA}$		150		MHz

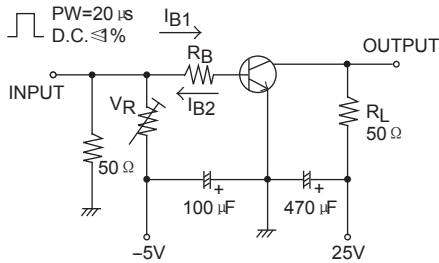
#### ■ Classification of $h_{FE}(1)$

Type	2SD1622-R-HF	2SD1622-S-HF	2SD1622-T-HF	2SD1622-U-HF
Range	100-200	140-280	200-400	280-560
Marking	DE R* <sub>F</sub>	DE S* <sub>F</sub>	DE T* <sub>F</sub>	DE U* <sub>F</sub>

### NPN Transistors

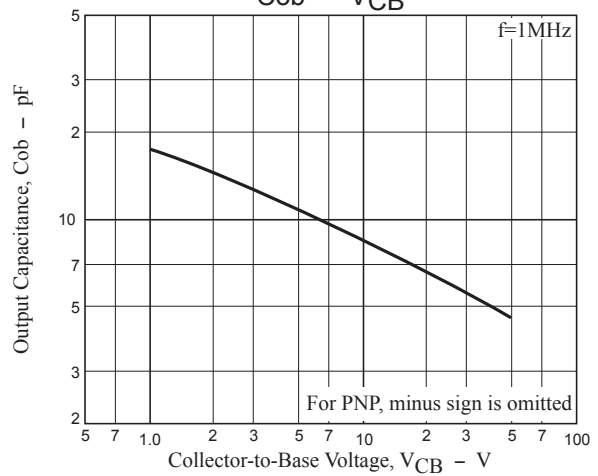
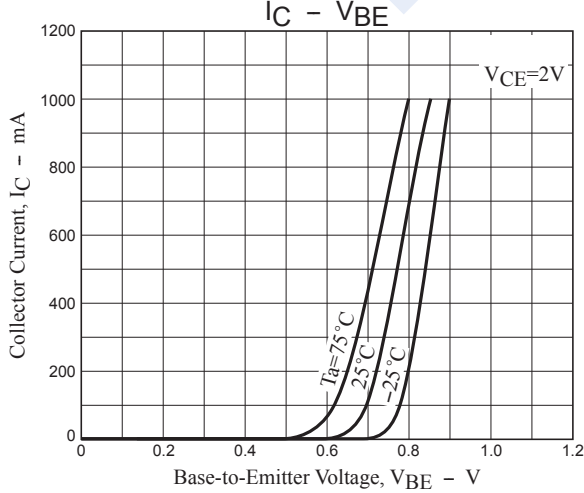
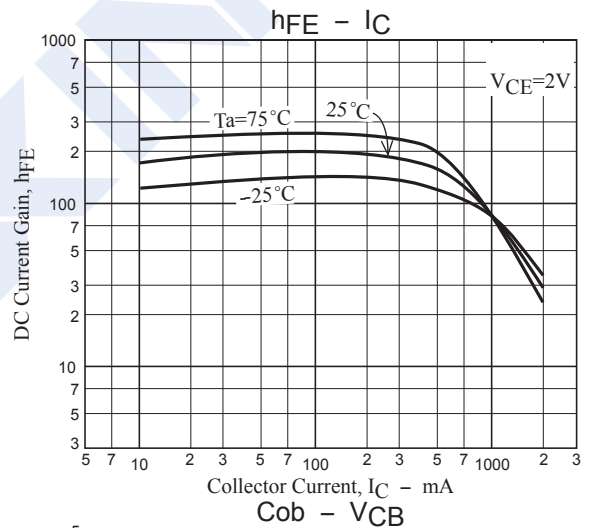
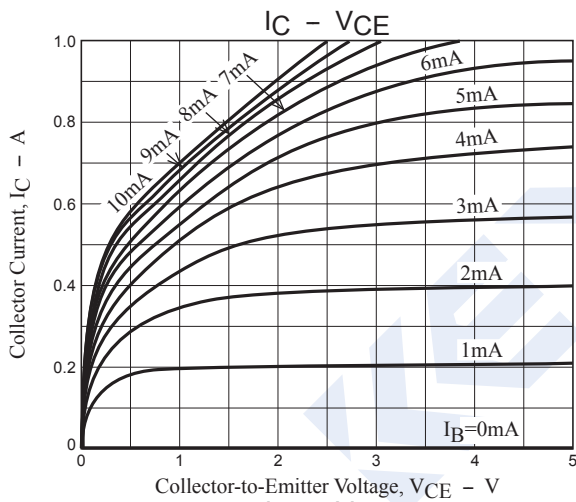
### 2SD1622-HF

#### Switching Time Test Circuit



$I_C = 10I_{B1} = -10I_{B2} = 500\text{mA}$   
 (For PNP, the polarity is reversed)

#### Typical Characteristics



### NPN Transistors

### 2SD1622-HF

■ Typical Characteristics

