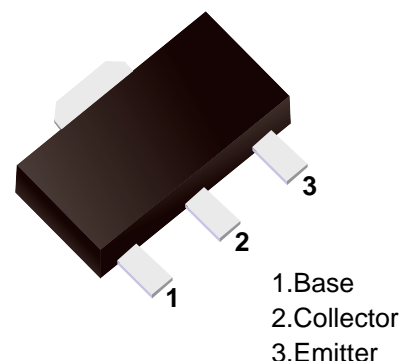


NPN Transistors

■ Features

- Excellent current-to-gain characteristics
- Low collector saturation voltage $V_{CE(sat)}$
- Complementary to 2SB1412



■ Simplified outline(SOT-89)

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

Parameter	Symbol	Rating	Unit
Collector - Base Voltage	V_{CB0}	40	V
Collector - Emitter Voltage	V_{CE0}	20	
Emitter - Base Voltage	V_{EB0}	6	
Collector Current - Continuous	I_c	3	A
Collector Power Dissipation	P_c	500	mW
Junction Temperature	T_J	150	$^\circ\text{C}$
Storage Temperature Range	T_{stg}	-55 to 150	

■ Electrical Characteristics $T_a = 25^\circ\text{C}$

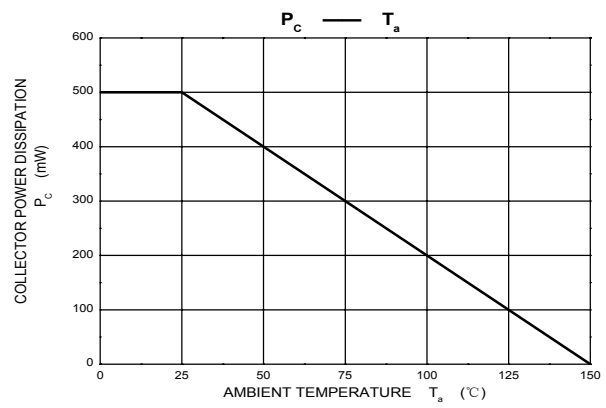
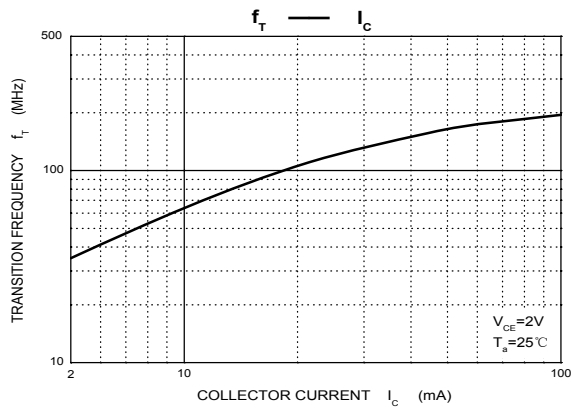
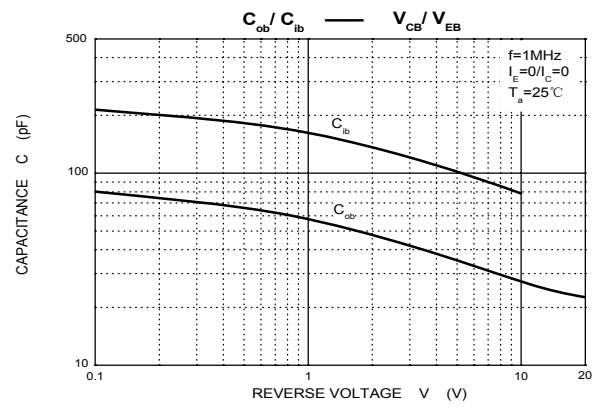
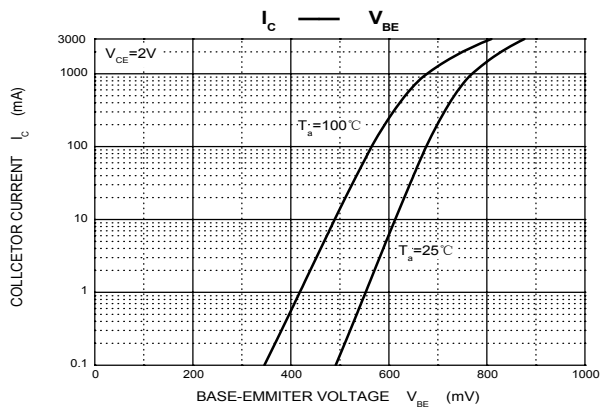
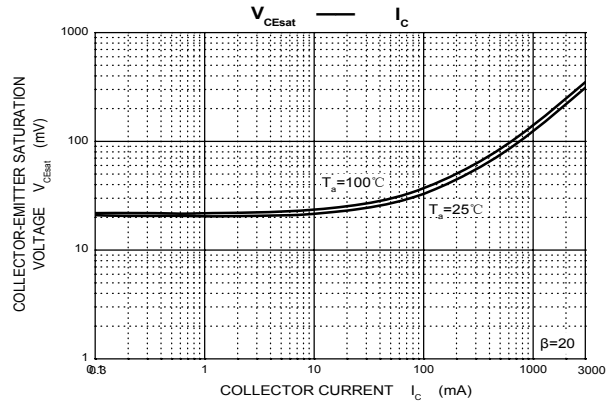
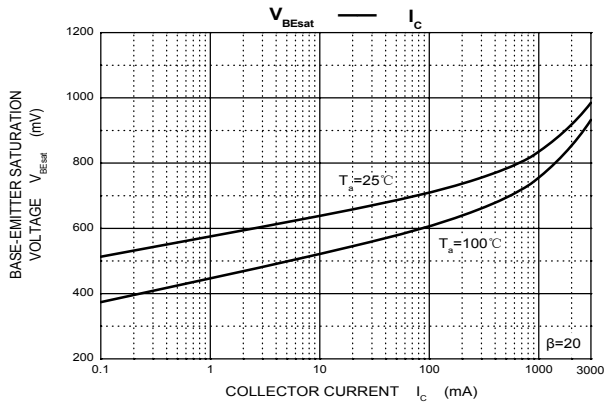
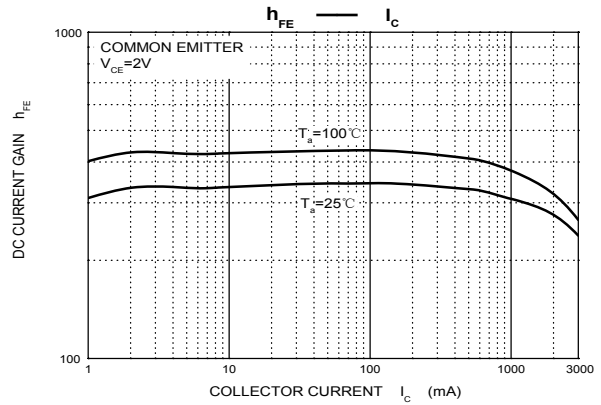
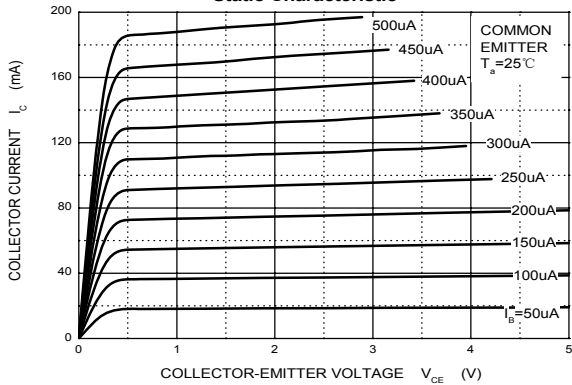
Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector- base breakdown voltage	V_{CB0}	$I_c = 100\mu\text{A}$, $I_E = 0$	40			V
Collector- emitter breakdown voltage	V_{CE0}	$I_c = 1\text{mA}$, $I_B = 0$	20			
Emitter - base breakdown voltage	V_{EB0}	$I_E = 100\mu\text{A}$, $I_c = 0$	6			
Collector-base cut-off current	I_{CB0}	$V_{CB} = 35\text{V}$, $I_E = 0$			0.1	μA
Emitter cut-off current	I_{EB0}	$V_{EB} = 5\text{V}$, $I_c = 0$			0.1	
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_c = 2\text{A}$, $I_B = 100\text{mA}$			0.5	V
Base - emitter saturation voltage	$V_{BE(sat)}$	$I_c = 2\text{A}$, $I_B = 100\text{mA}$			1.2	
DC current gain	h_{FE}	$V_{CE} = 2\text{V}$, $I_c = 100\text{mA}$	180		560	
Collector output capacitance	C_{ob}	$V_{CB} = 10\text{V}$, $I_E = 0$, $f = 1\text{MHz}$		25		pF
Transition frequency	f_T	$V_{CE} = 2\text{V}$, $I_c = 500\text{mA}$, $f = 100\text{MHz}$		290		MHz

■ Classification of h_{FE}

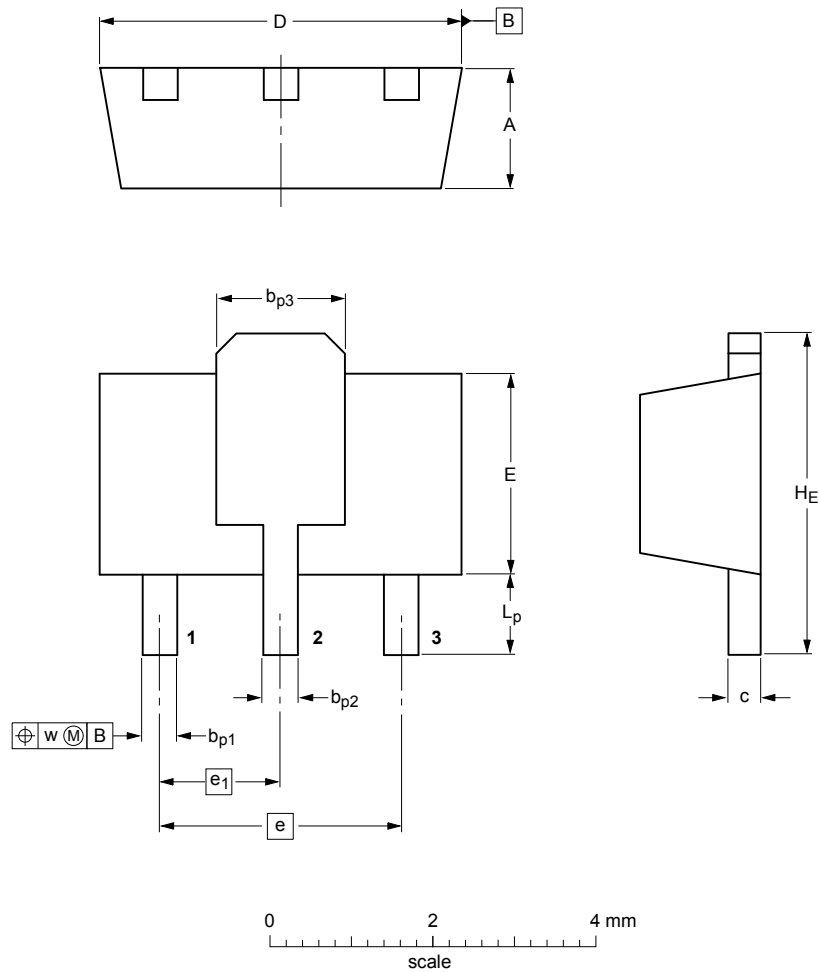
Type	2SD2150-R	2SD2150-S
Range	180-390	270-560
Marking	CF R*	CF S*

■ Typical Characteristics

Static Characteristic



■ SOT-89



DIMENSIONS (mm are the original dimensions)

UNIT	A	b_{p1}	b_{p2}	b_{p3}	c	D	E	e	e_1	H_E	L_p	w
mm	1.6	0.48	0.53	1.8	0.44	4.6	2.6	3.0	1.5	4.25	1.2	0.13
	1.4	0.35	0.40	1.4	0.23	4.4	2.4					

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