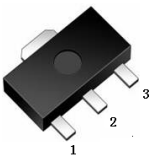
2SD1005 (NPN)

FEATURES

- High Collector to Base Voltage.
- Excellent DC Current Gain Linearity.
- Complements to PNP type 2SB804.



1. BASE
2. COLLECTO
3. EMITTER

SOT-89

Maximum Ratings (Ta=25 ℃ unless otherwise noted)

Parameter	Symbol	Value	Unit
Collector-Base Voltage	V_{CBO}	100	V
Collector-Emitter Voltage	V_{CEO}	80	V
Emitter-Base Voltage	V_{EBO}	5	V
Collector Current -Continuous	I_C	1	A
Collector Power dissipation	P_C	0.75	W
Storage Temperature	Tstg	-55to +150	℃

ELECTRICAL CHARACTERISTICS (@ Ta=25 ℃ unless otherwise specified)

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector cut-off current	I_{CBO}	V_{CB}=100V, I_E=0			0.1	uA
Emitter cut-off current	I_{EBO}	V_{EB}=5V,I_C=0			0.1	uA
Collector-emitter saturation voltage	$V_{CE(sat)}$	I_C/I_B=500mA/50mA		0.15	0.5	V
Base-emitter saturation voltage	$V_{BE(sat)}$	I_C/I_B=500mA/50mA		0.9	1.5	V
Base-emitter voltage	V_{BE}	V_{CE}=10V,I_C=10mA	0.6	0.63	0.7	V
DC current gain(note)	h_{FE}	V_{CE}=2V, I_C=1mA	90	200	400	
Current gain bandwidth product	f_T	V_{CE}=5V,I_E=10mA		160		MHz
Output Capacitance	C_{ob}	V_{CB}=10V, f=1MHz ,I_E=0A		12		pF

CLASSIFICATION OF h_{FE}

Range	230-380	340-600	560-800
Marking	BW	BV	BU

2SD1005 Typical Characteristics