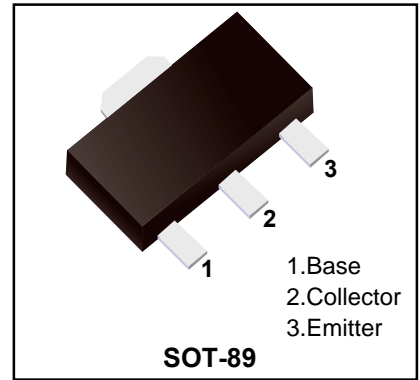


NPN Silicon Epitaxial Planar Transistor
For low frequency power amplification



The transistor is subdivided into two groups, Q and R, according to its DC current gain.

Absolute Maximum Ratings (Ta = 25°C)

Parameter	Symbol	Value	Unit
Collector to Base Voltage	V_{CBO}	40	V
Collector to Emitter Voltage	V_{CEO}	20	V
Emitter to Base Voltage	V_{EBO}	7	V
Collector Current	I_C	5	A
Peak Collector Current	I_{CP}	8	A
Total power dissipation	P_{tot}	0.75	W
Junction Temperature	T_j	150	°C
Storage Temperature Range	T_{Stg}	- 55 to + 150	°C

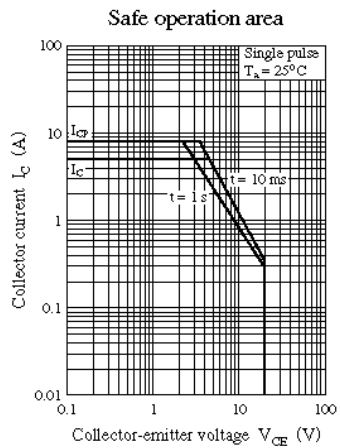
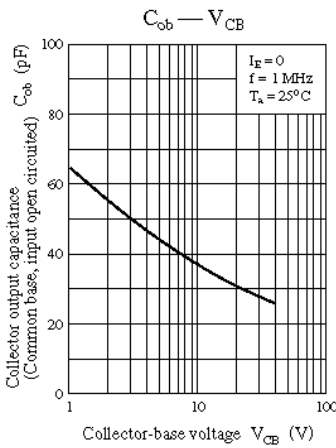
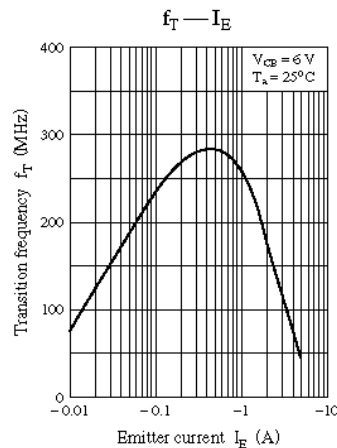
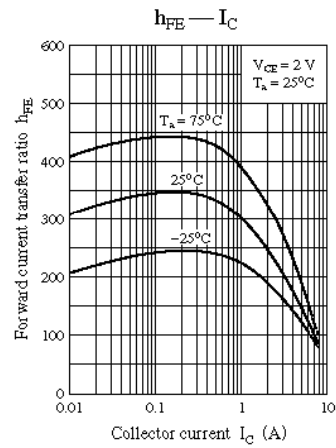
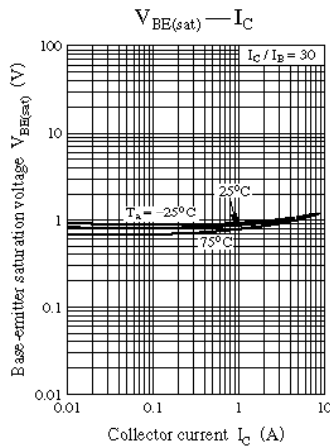
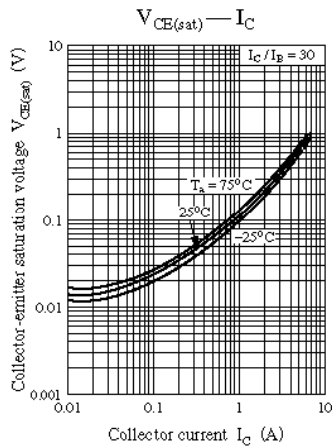
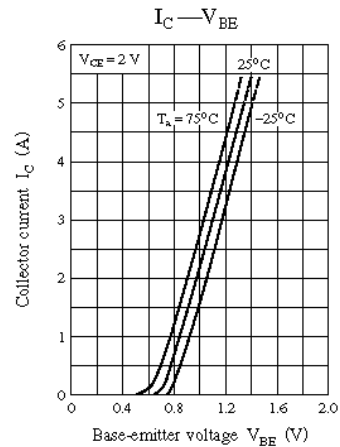
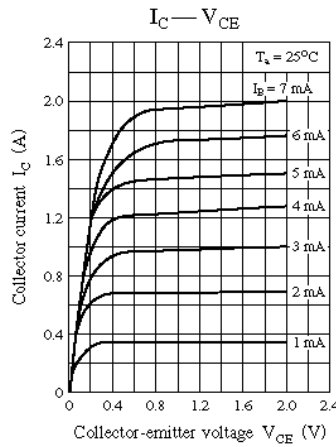
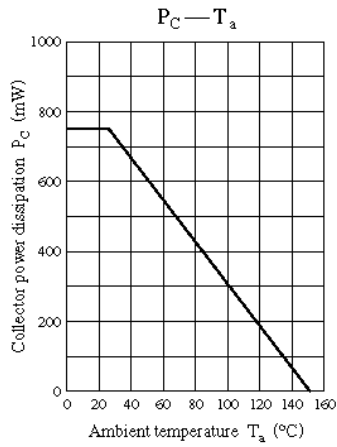
Characteristics at Ta = 25°C

Parameter	Symbol	Min.	Typ.	Max.	Unit	
DC Current Gain at $V_{CE} = 2\text{ V}$, $I_C = 0.5\text{ A}$ Current Gain Group	Q	h_{FE}	230	-	380	-
	R	h_{FE}	340	-	600	-
		h_{FE}	150	-	-	-
Collector Emitter Breakdown Voltage at $I_C = 1\text{ mA}$	V_{CEO}	20	-	-	V	
Emitter Base Breakdown Voltage at $I_E = 10\text{ }\mu\text{A}$	V_{EBO}	7	-	-	V	
Collector Cutoff Current at $V_{CB} = 10\text{ V}$	I_{CBO}	-	-	0.1	μA	
Collector Cutoff Current at $V_{CE} = 10\text{ V}$	I_{CEO}	-	-	1	μA	
Emitter Cutoff Current at $V_{EB} = 7\text{ V}$	I_{EBO}	-	-	0.1	μA	
Collector Emitter Saturation Voltage at $I_C = 3\text{ A}$, $I_B = 0.1\text{ A}$	$V_{CE(sat)}$	-	-	1	V	
Transition Frequency at $V_{CB} = 6\text{ V}$, $-I_E = 50\text{ mA}$, $f = 200\text{ MHz}$	f_T	-	150	-	MHz	
Collector Output Capacitance at $V_{CB} = 20\text{ V}$, $f = 1\text{ MHz}$	C_{ob}	-	-	50	pF	

hFE Classification

Classification	2SD965-Q	2SD965-R
Range	230~380	340~600
Marking	965Q	965R

Typical Characteristics



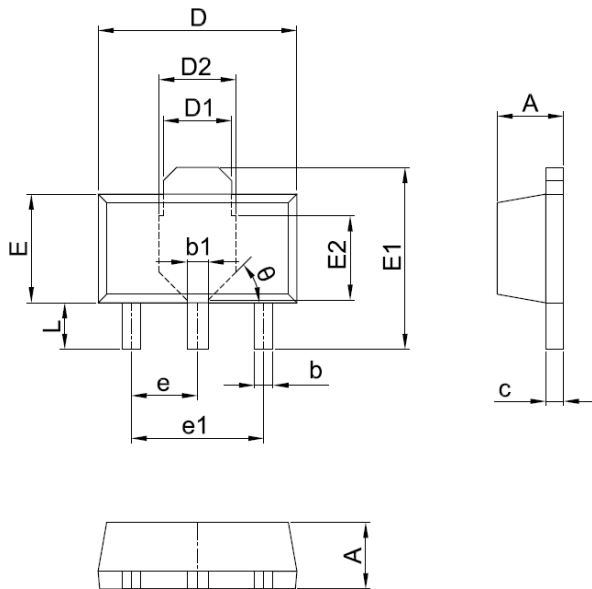
Ordering information

Package	Packing Description	Base Quantity	Packing Quantity
SOT-89	Tape/Reel,7"reel	1000pcs/Reel	6000PCS/Box 30000PCS/Carton

Package Dimensions

SOT-89

Dim	Millimeter		Inches	
	Min.	Max.	Min.	Max.
A	1.40	1.60	0.055	0.063
b	0.32	0.52	0.013	0.020
b1	0.38	0.58	0.015	0.023
c	0.35	0.45	0.014	0.018
D	4.40	4.60	0.173	0.181
D1	1.45	1.65	0.057	0.065
D2	1.70	1.80	0.067	0.071
E	2.30	2.60	0.091	0.102
E1	3.95	4.25	0.156	0.167
E2	1.80	2.00	0.071	0.079
e	1.40	1.60	0.055	0.063
e1	2.80	3.20	0.110	0.126
L	0.90	1.20	0.035	0.047



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