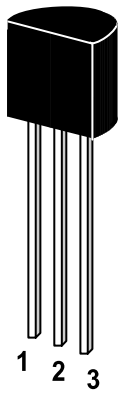
2SD965

NPN Silicon Epitaxial Planar Transistor
for low-frequency power and stroboscope applications.

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

On special request, these transistors can be manufactured in different pin configurations.



1. Emitter 2. Collector 3. Base

TO-92 Plastic Package

Weight approx. 0.19g

Features

- Low collector-emitter saturation voltage
- Satisfactory operation performances at high efficiency with the low voltage power supply

Absolute Maximum Ratings (Ta=25°C)

	Symbol	Value	Unit
Collector Base Voltage	V_{CBO}	40	V
Collector Emitter Voltage	V_{CEO}	20	V
Emitter Base Voltage	V_{EBO}	7	V
Peak Collector Current	I_{CP}	8	A
Collector Current	I_C	5	A
Power Dissipation	P_{tot}	750	mW
Junction Temperature	T_j	150	°C
Storage Temperature Range	T_S	-55 to +150	°C

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Characteristics at T_{amb}=25 °C

		Symbol	Min.	Typ.	Max.	Unit
DC Current Gain						
at V_{CE}=2V, I_C=0.5A	P	h_{FE}	120	-	250	-
	Q	h_{FE}	230	-	380	-
	R	h_{FE}	340	-	600	-
at V_{CE}=2V, I_C=1A		h_{FE}	150	-	-	-
Collector Cutoff Current at V_{CB}=10V		I_{CBO}	-	-	0.1	μA
Collector Cutoff Current at V_{CE}=10V		I_{CEO}	-	-	1.0	μA
Emitter Cutoff Current at V_{EB}=7V		I_{EBO}	-	-	0.1	μA
Collector Output Capacitance at V_{CB}=20V, f=1MHz (Common base, input open circuited)		Cob	-	26	50	pF
Collector to Emitter Voltage at I_C=1mA		V_{CEO}	20	-	-	V
Emitter to Base Voltage at I_E=10μA		V_{EBO}	7	-	-	V
Collector to Emitter Saturation Voltage at I_C=3A, I_B=0.1A		$V_{CE(sat)}$	-	0.28	1	V
Current Gain Bandwidth Product at V_{CB}=6V, I_E= -50mA, f=200MHz		f_T	-	150	-	MHz

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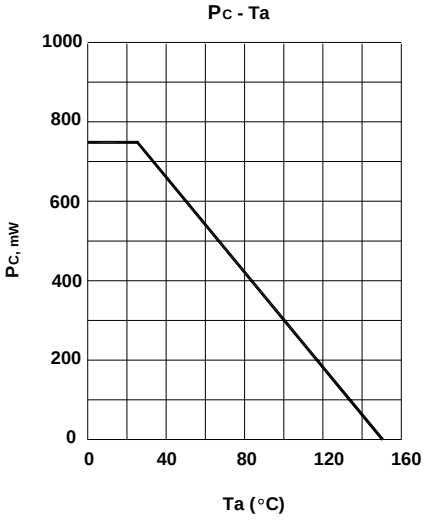
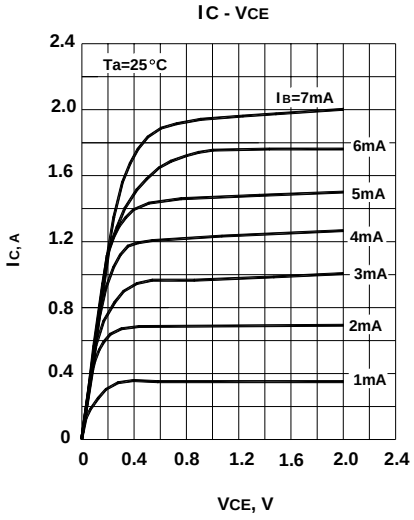
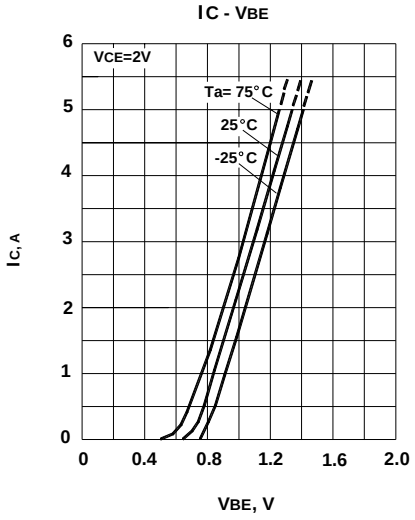
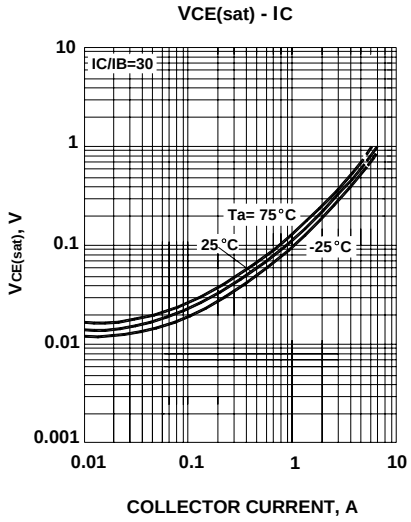
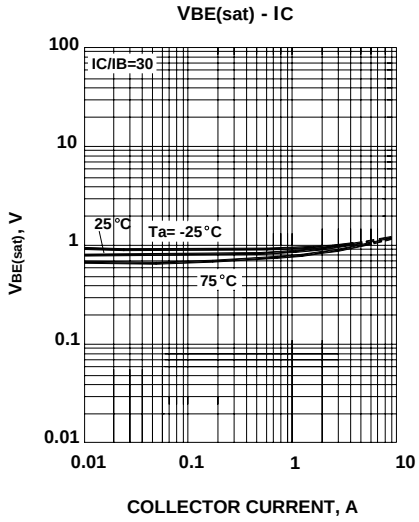
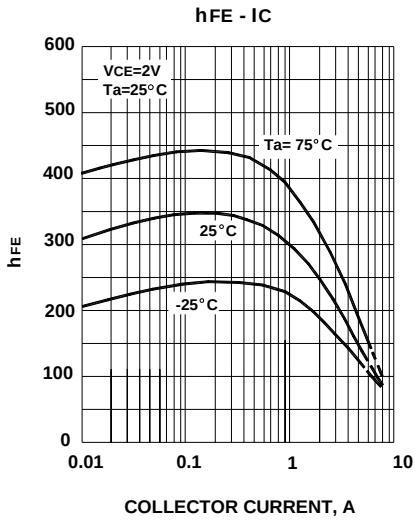

PC - Ta
PC, mW
1000
800
600
400
200
0
0
40
80
120
160
Ta (°C)

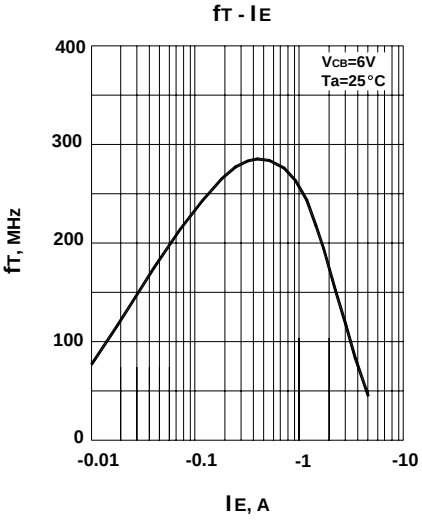

IC - VCE
Ta=25°C
IB=7mA
6mA
5mA
4mA
3mA
2mA
1mA
IC, A
2.4
2.0
1.6
1.2
0.8
0.4
0
0
0.4
0.8
1.2
1.6
2.0
2.4
VCE, V

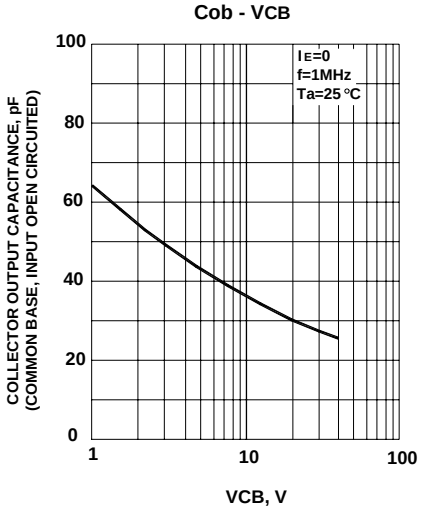

IC - VBE
VCE=2V
Ta= 75°C
25°C
-25°C
IC, A
6
5
4
3
2
1
0
0
0.4
0.8
1.2
1.6
2.0
VBE, V

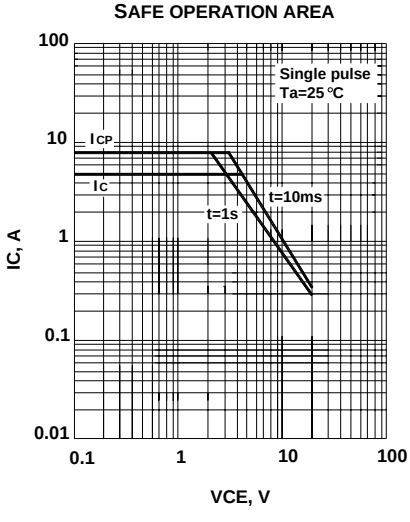

VCE(sat) - IC
IC/IB=30
Ta= 75°C
25°C
-25°C
VCE(sat), V
10
1
0.1
0.01
0.001
0.01
0.1
1
10
COLLECTOR CURRENT, A


VBE(sat) - IC
IC/IB=30
25°C
Ta= -25°C
75°C
VBE(sat), V
100
10
1
0.1
0.01
0.01
0.1
1
10
COLLECTOR CURRENT, A


hFE - IC
VCE=2V
Ta=25°C
Ta= 75°C
25°C
-25°C
hFE
600
500
400
300
200
100
0
0.01
0.1
1
10
COLLECTOR CURRENT, A


fT - IE
VCB=6V
Ta=25°C
fT, MHz
400
300
200
100
0
-0.01
-0.1
-1
-10
IE, A


Cob - VCB
IE=0
f=1MHz
Ta=25°C
COLLECTOR OUTPUT CAPACITANCE, pF
(COMMON BASE, INPUT OPEN CIRCUITED)
100
80
60
40
20
0
1
10
100
VCB, V


SAFE OPERATION AREA
Single pulse
Ta=25°C
ICP
IC
t=10ms
t=1s
IC, A
100
10
1
0.1
0.01
0.1
1
10
100
VCE, V