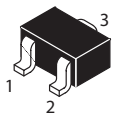
WEITRON

2SC4215

NPN Silicon Transistor

Lead(Pb)-Free



1. BASE
2. EMITTER
3. COLLECTOR

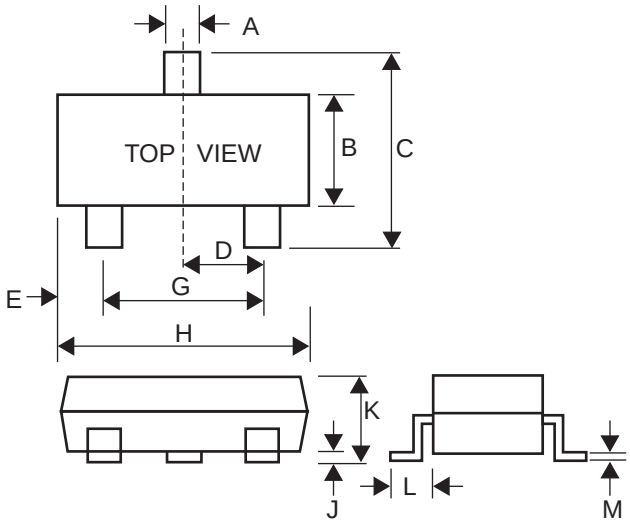
SOT-323(SC-70)

FEATURES:

* Power dissipation

SOT-323 Outline Demensions

Unit:mm



SOT-323		
Dim	**Min**	**Max**
A	0.30	0.40
B	1.15	1.35
C	2.00	2.40
D	-	0.65
E	0.30	0.40
G	1.20	1.40
H	1.80	2.20
J	0.00	0.10
K	0.80	1.00
L	0.42	0.53
M	0.10	0.25

Maximum Ratings (T_A=25°C unless otherwise noted)

Rating	Symbol	Value	Unit
Collector-Base Voltage	V_{CBO}	40	V
Collector-Emitter Voltage	V_{CEO}	30	V
Emitter-Base Voltage	V_{EBO}	4	V
Collector Current -Continuous	I_C	20	mA
Collector Power Dissipation	P_D	100	mW
Junction Temperature	T_J	150	°C
Storage Temperature	T_{stg}	-55 to +150	°C

ELECTRICAL CHARACTERISTICS (Ta=25ºC unless otherwise specified)

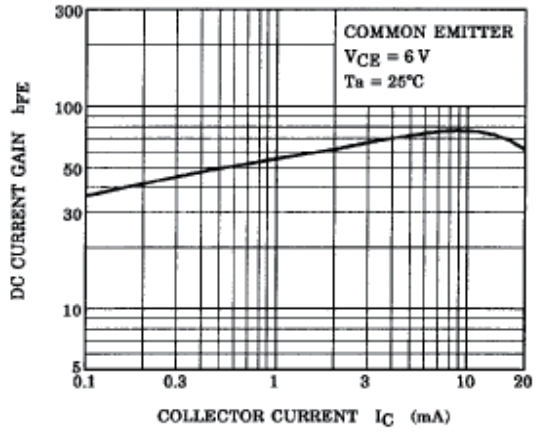
Parameter	Symbol	Min	Typ	Max	Unit
Collector-base breakdown voltage I_C= 100μA, I_E=0	$V_{(BR)CBO}$	40	-	-	V
Collector-emitter breakdown voltage I_C= 1mA, I_B=0	$V_{(BR)CEO}$	30	-	-	V
Emitter-base breakdown voltage I_E= 100μA, I_C=0	$V_{(BR)EBO}$	4	-	-	V
Collector cut-off current V_{CB} =40V, I_E=0	I_{CBO}	-	-	0.1	μA
Emitter cut-off current V_{EB} =4V, I_C =0	I_{EBO}	-	-	0.5	μA
DC current gain V_{CE} =6V, I_C= 1mA	h_{FE}	40	-	200	-
Transition frequency V_{CE} =6V,I_C=1mA	f_T	260	550	-	MHz
Reverse transfer capacitance V_{CB} =10V, f =1MHz	Cre	-	0.55	-	pF
Collector-base time constant V_{CB} =6V,I_C=1mA, f=30MHz	$C_{C\cdot}$ r_{bb}	-	-	25	pS
Noise figure V_{CC} =6V,I_C=1mA,f =100MHz	NF	-	2	5	dB
Power gain V_{CC} =6V,I_C=1mA,f =100MHz	Gpe	17	23	-	dB

CLASSIFICATION OF h_{FE}

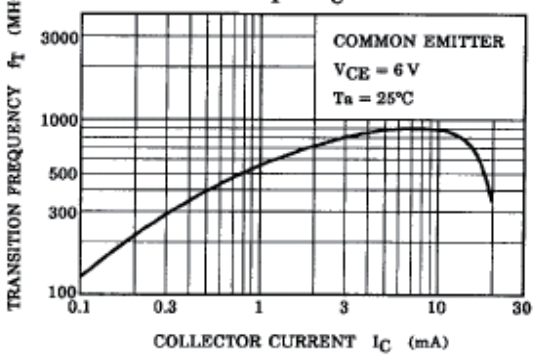
Rank	R	O	Y
Range	40-80	70-140	120-200
Marking	QR	QO	QY

Typical Characteristics

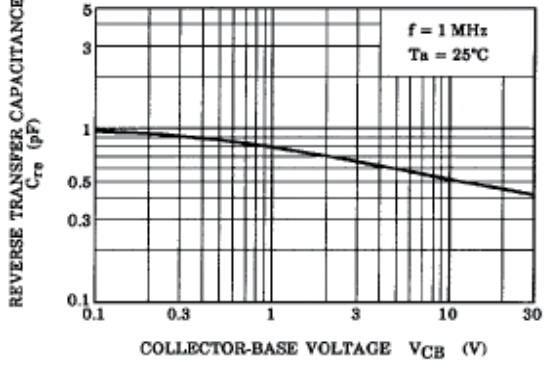
h_{FE} – I_C



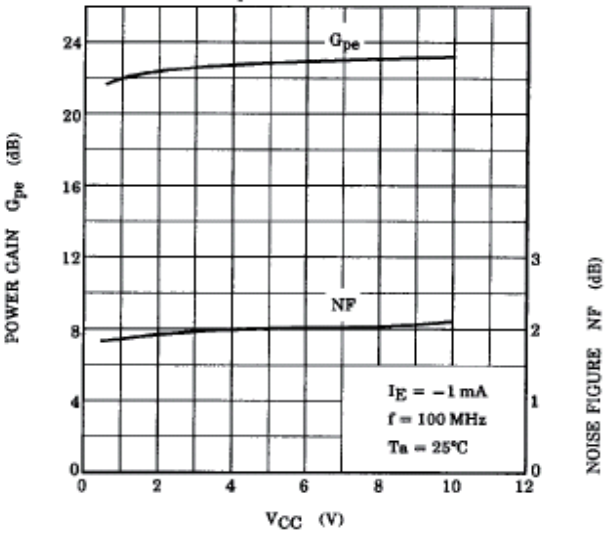
f_T – I_C



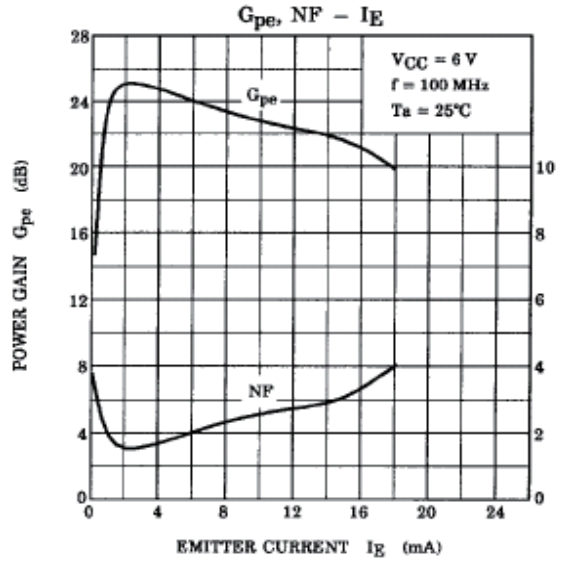
C_{re} – V_{CB}



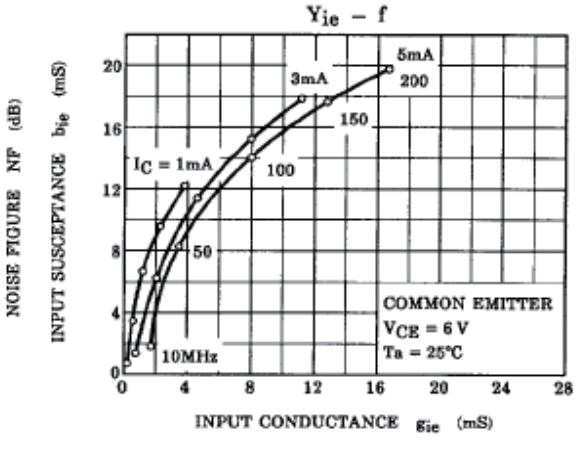
G_{pe}, NF – V_{CC}

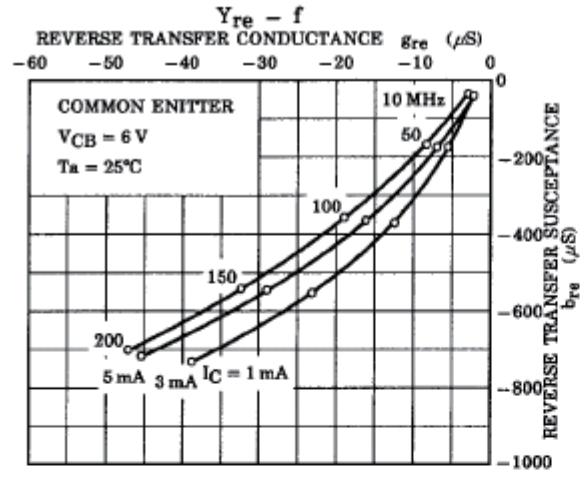


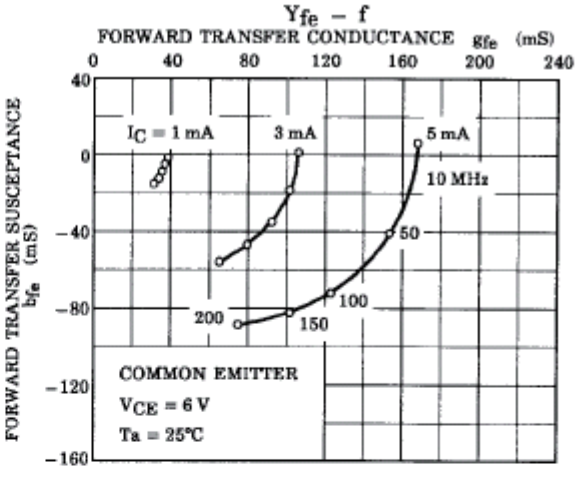
G_{pe}, NF – I_E

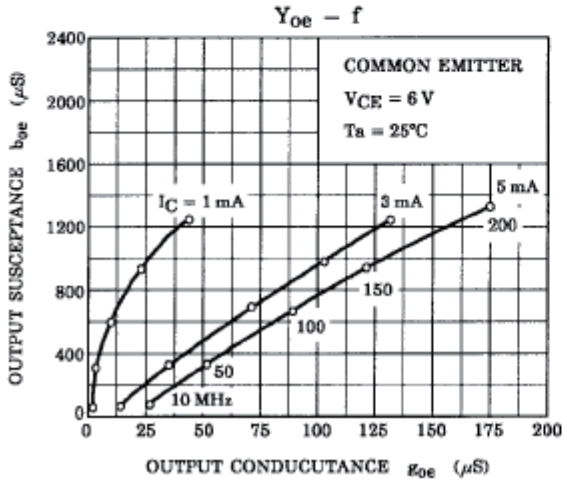


Y_{ie} – f




Y_{re} – f
REVERSE TRANSFER CONDUCTANCE g_{re} (μS)
−60 −50 −40 −30 −20 −10 0
COMMON ENITTER
V_{CB} = 6 V
Ta = 25°C
10 MHz
50
100
150
200
5 mA
3 mA
I_C = 1 mA
0
−200
−400
−600
−800
−1000
REVERSE TRANSFER SUSCEPTANCE b_{re} (μS)


Y_{fe} – f
FORWARD TRANSFER CONDUCTANCE g_{fe} (mS)
0 40 80 120 160 200 240
40
0
−40
−80
−120
−160
FORWARD TRANSFER SUSCEPTANCE b_{fe} (mS)
I_C = 1 mA
3 mA
5 mA
10 MHz
50
100
150
200
COMMON EMITTER
V_{CE} = 6 V
Ta = 25°C


Y_{oe} – f
COMMON EMITTER
V_{CE} = 6 V
Ta = 25°C
I_C = 1 mA
3 mA
5 mA
200
150
100
50
10 MHz
2400
2000
1600
1200
800
400
0
OUTPUT SUSCEPTANCE b_{oe} (μS)
0 25 50 75 100 125 150 175 200
OUTPUT CONDUCUTANCE g_{oe} (μS)