SILICON NPN EPITAXIAL PLANAR TYPE

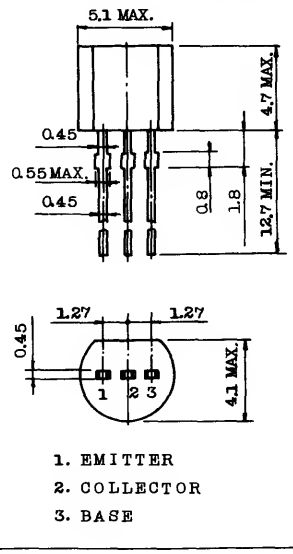
2SC382TM

TV 1ST, 2ND PICTURE IF AMPLIFIER APPLICATIONS.

FEATURES:

- High Gain : G_{pe}=35dB(Typ.) (f=45MHz)
- Excellent Forward AGC Characteristic.

Unit in mm



1. EMITTER
2. COLLECTOR
3. BASE

JEDEC	TO-92
EIAJ	SC-43
TOSHIBA	2-5F1B

Weight : 0.21g

MAXIMUM RATINGS (Ta=25°C)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector-Base Voltage	V_{CBO}	40	V
Collector-Emitter Voltage	V_{CEO}	40	V
Emitter-Base Voltage	V_{EBO}	4	V
Collector Current	I_C	50	mA
Emitter Current	I_E	-50	mA
Collector Power Dissipation	P_C	250	mW
Junction Temperature	T_j	125	°C
Storage Temperature Range	T_{stg}	-55∿125	°C

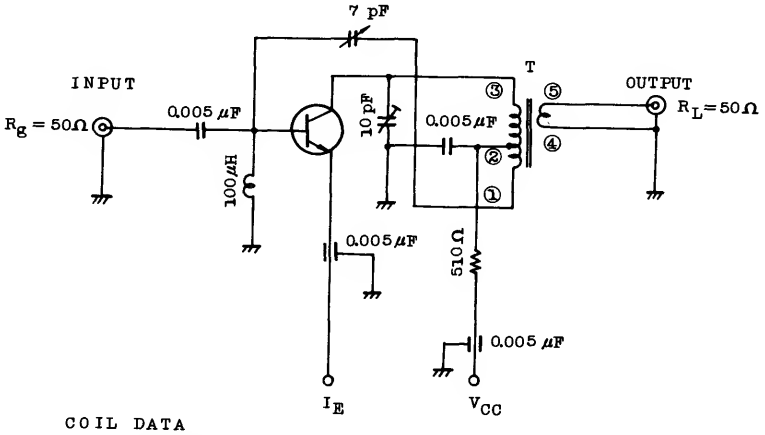
ELECTRICAL CHARACTERISTICS (Ta=25°C)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current	I_{CBO}	V_{CB}=40V, I_E=0	-	-	0.1	μA
Emitter Cut-off Current	I_{EBO}	V_{EB}=3V, I_E=0	-	-	0.1	μA
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	I_C=3mA, I_B=0	40	-	-	V
DC Current Gain	h_{FE}	V_{CE}=10V, I_C=4mA	30	-	-	
Transition Frequency	f_T	V_{CE}=10V, I_C=4mA	400	-	-	MHz
Collector-Base Time Constant	Cc.rbb'	V_{CB}=10V, I_m=-1mA, f=30MHz	-	-	30	ps
Reverse Transfer Capacitance	C_{re}	V_{CB}=10V, I_E=0 f=1MHz	-	-	1.2	pF
Power Gain (Fig.1)	G_{pe}	V_{CC}=12V, I_C=4mA, f=45MHz	32	35	40	dB
AGC Current (Note 1,2)	I_{AGC}	V_{CC}=12V, f=45MHz	7.2	-	10.8	mA

Note 1: Measured by circuit shown in Fig.1, when power gain is reduced to 30dB compared with that of I_C at 4mA.

Note 2: I_{AGC} Classification BL: 7.2∿8.8, V: 8.2∿10.1, W: 8.9∿10.8

Fig. 1 G_{pe} AND I_{AGC} CHARACTERISTICS TEST CIRCUITS (f=45 MHz)



COIL DATA

Ø20 mmØ Cu WIRE

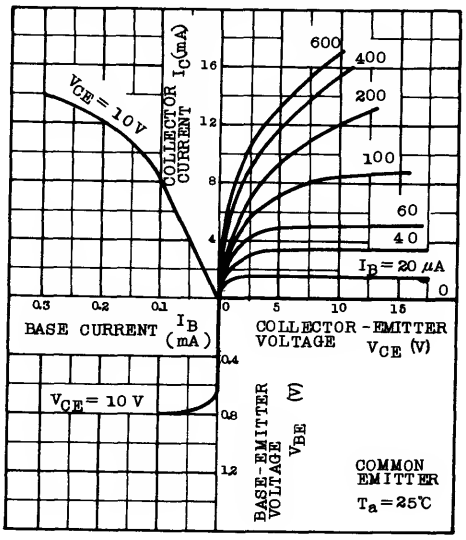
L=12 μH WITH M-5 CORE

T: ①-② 3.0 T

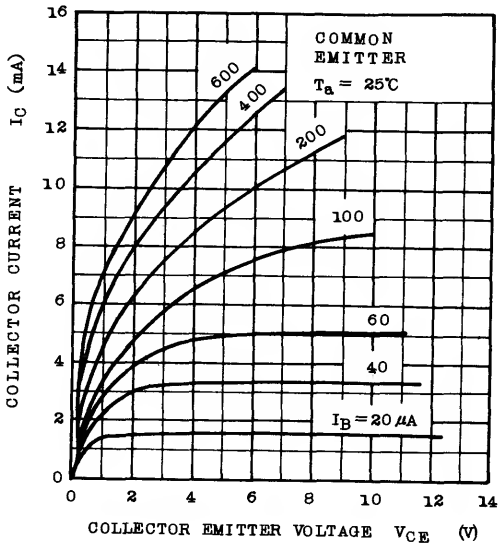
②-③ 8.0 T

④-⑤ 1.0 T

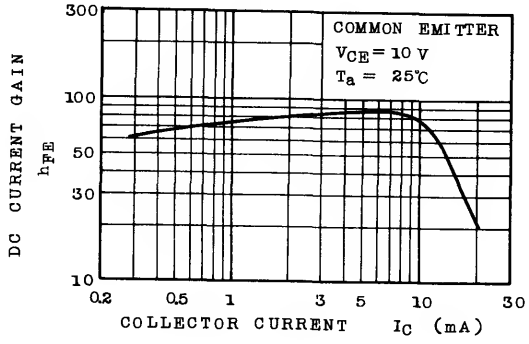
STATIC CHARACTERISTICS



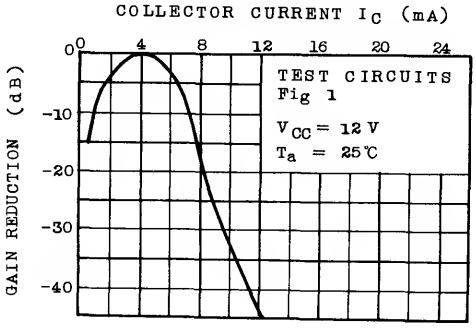
I_C – V_{CE}



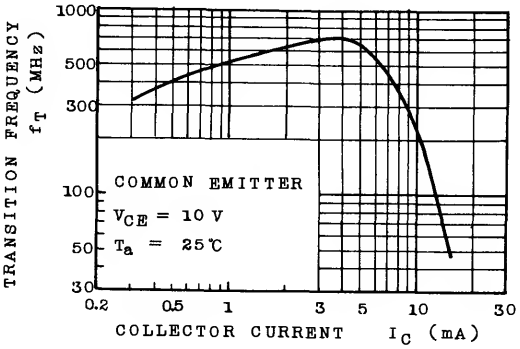
h_{FE} – I_C



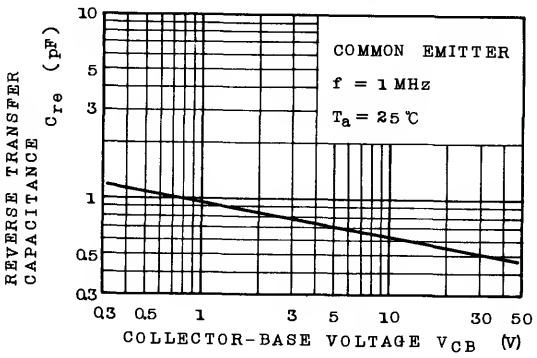
AGC CHARACTERISTICS



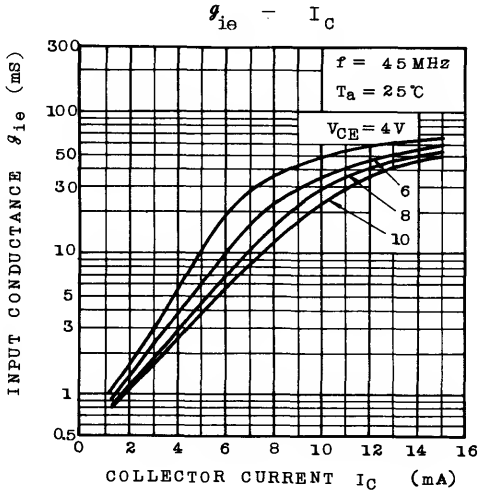
f_T – I_C



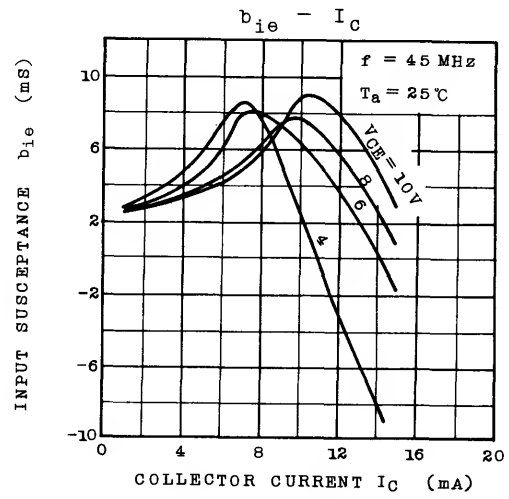
C_{re} – V_{CB}

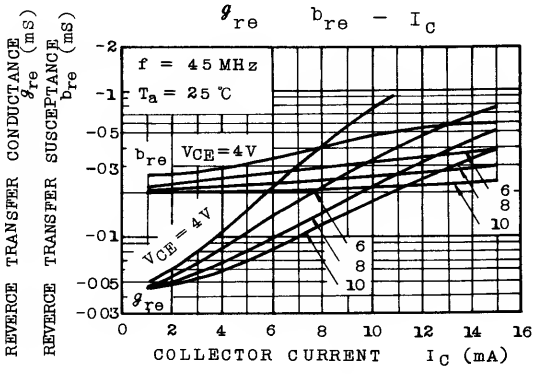


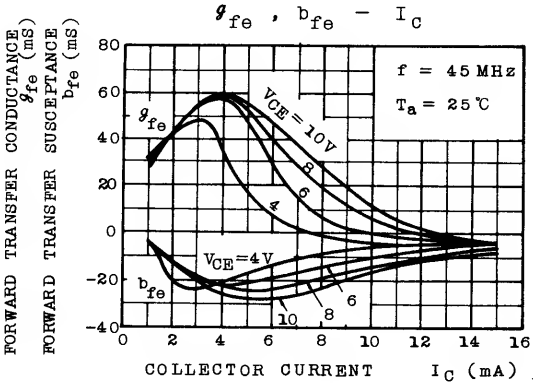
g_{ie} – I_C

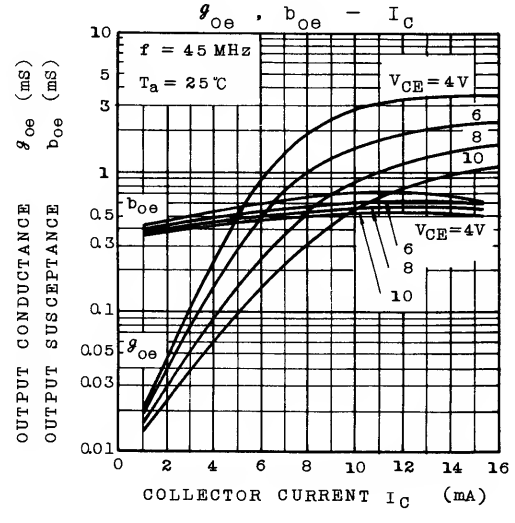


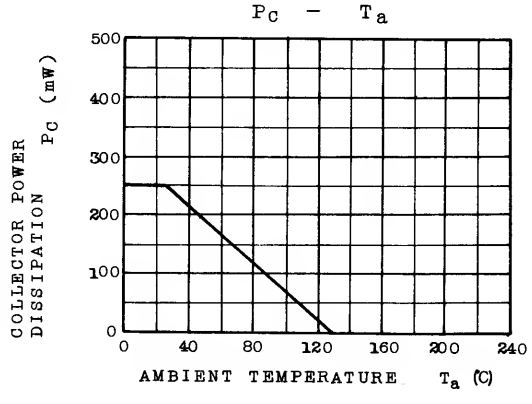
b_{ie} – I_C




g_{re} b_{re} – I_C
REVERSE TRANSFER CONDUCTANCE g_{re} (mS)
REVERSE TRANSFER SUSCEPTANCE b_{re} (mS)
f = 45 MHz
T_a = 25 ℃
b_{re}
V_{CE}=4V
V_{CE} = 4V
g_{re}
6
8
10
COLLECTOR CURRENT I_C (mA)


g_{fe} , b_{fe} – I_C
FORWARD TRANSFER CONDUCTANCE g_{fe} (mS)
FORWARD TRANSFER SUSCEPTANCE b_{fe} (mS)
f = 45 MHz
T_a = 25 ℃
V_{CE} = 10V
g_{fe}
V_{CE}=4V
b_{fe}
2
4
6
8
10
COLLECTOR CURRENT I_C (mA)


g_{oe} , b_{oe} – I_C
OUTPUT CONDUCTANCE g_{oe} (mS)
OUTPUT SUSCEPTANCE b_{oe} (mS)
f = 45 MHz
T_a = 25 ℃
V_{CE}=4V
b_{oe}
V_{CE}=4V
g_{oe}
6
8
10
COLLECTOR CURRENT I_C (mA)


P_C – T_a
COLLECTOR POWER DISSIPATION P_C (mW)
AMBIENT TEMPERATURE T_a (℃)