SILICON NPN TRIPLE DIFFUSED TYPE (PCT PROCESS)

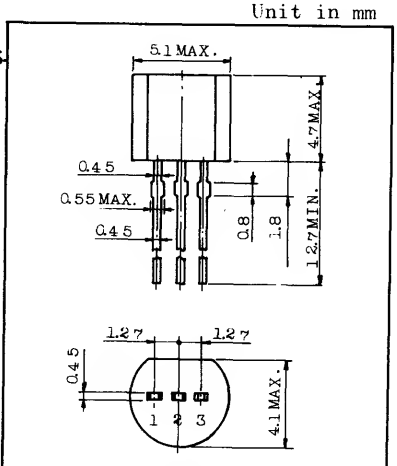
S1836

FOR HIGH VOLTAGE AMPLIFIER APPLICATIONS.
PLASMA DISPLAY, NIXIE TUBE DRIVER APPLICATIONS.
COLOR TV VIDEO OUTPUT APPLICATIONS.

FEATURES:

- Complementary to S1837.
- 300V Minimum $V_{(BR)CEO}$.
- Low Saturation Voltage : $V_{CE(sat)}$=0.5V(Max.)
- Small Collector Output Capacitance.

Unit in mm



1. EMITTER
2. BASE
3. COLLECTOR

JEDEC	TO-92
EIAJ	SC-43
TOSIBA	2-5F1F

Weight : 0.21g

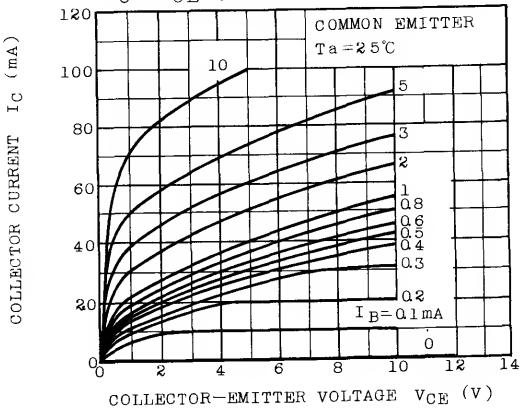
MAXIMUM RATINGS (Ta=25°C)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector-Base Voltage	V_{CBO}	300	V
Collector-Emitter Voltage	V_{CEO}	300	V
Emitter-Base Voltage	V_{EBO}	6	V
Collector Current	I_C	100	mA
Collector Power Dissipation	P_C	625	mW
Junction Temperature	T_j	150	°C
Storage Temperature Range	T_{stg}	-55~150	°C

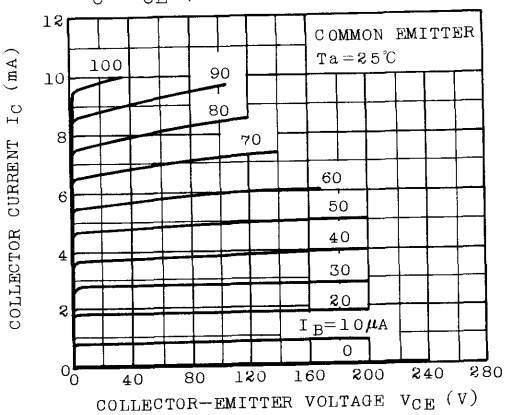
ELECTRICAL CHARACTERISTICS (Ta=25°C)

CHARACTERISTIC	SYMBOL	CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current	I_{CBO}	V_{CB}=300V, I_E=0	-	-	0.1	μA
Emitter Cut-off Current	I_{EBO}	V_{EB}=6V, I_C=0	-	-	0.1	μA
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	I_C=1mA, I_B=0	300	-	-	V
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	I_C=0.1mA, I_E=0	300	-	-	V
DC Current Gain	$h_{FE(1)}$	V_{CE}=10V, I_C=1mA	20	-	-	
	$h_{FE(2)}$	V_{CE}=10V, I_C=20mA	30	-	150	
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	I_C=20mA, I_B=2mA	-	-	0.5	V
Base-Emitter Saturation Voltage	$V_{BE(sat)}$	I_C=20mA, I_B=2mA	-	-	1.2	V
Transition Frequency	f_T	V_{CE}=10V, I_C=20mA	50	80	-	MHz
Collector Output Capacitance	C_{ob}	V_{CB}=20V, I_E=0, f=1MHz	-	3	4	pF

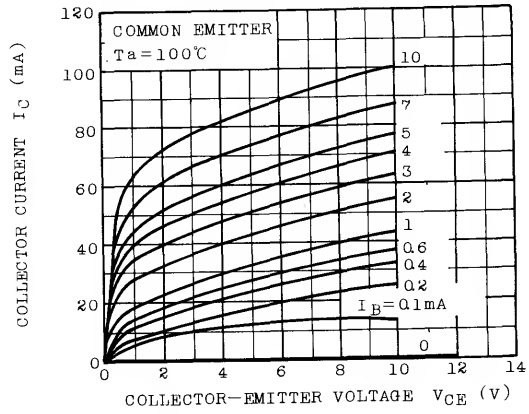
$I_C - V_{CE}$ (LOW VOLTAGE REGION)



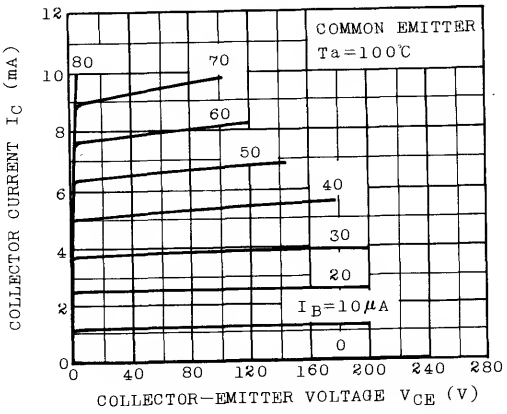
$I_C - V_{CE}$ (LOW CURRENT REGION)



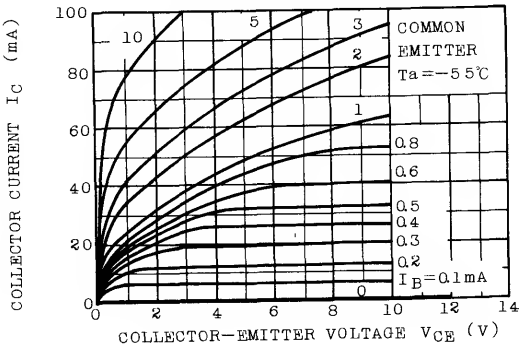
$I_C - V_{CE}$ (LOW VOLTAGE REGION)



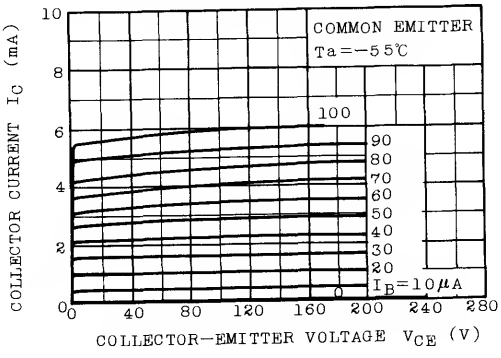
$I_C - V_{CE}$ (LOW CURRENT REGION)

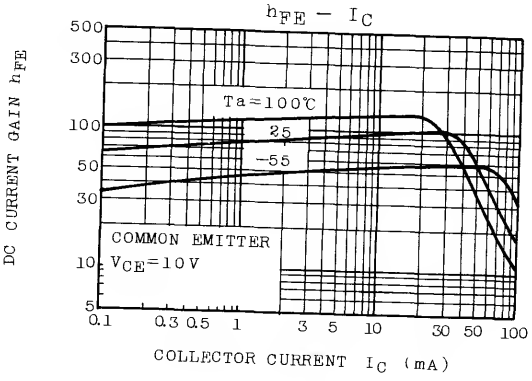


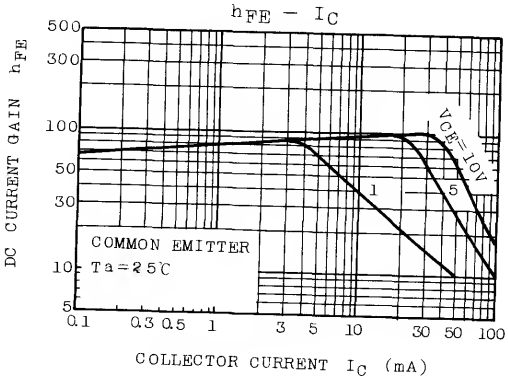
$I_C - V_{CE}$ (LOW VOLTAGE REGION)

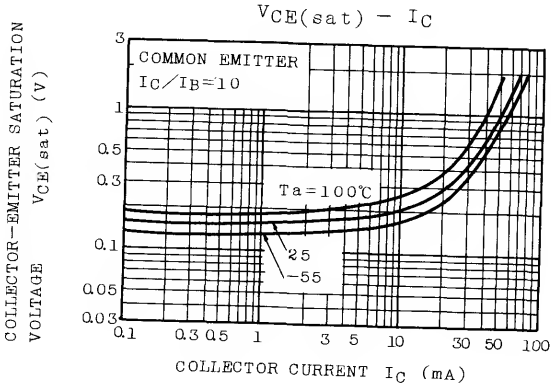


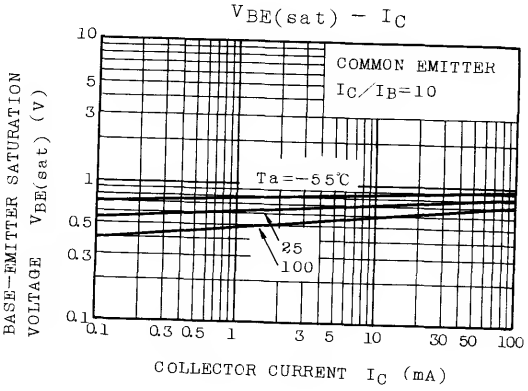
$I_C - V_{CE}$ (LOW CURRENT REGION)

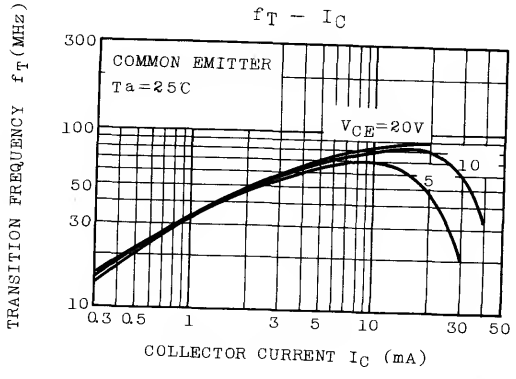


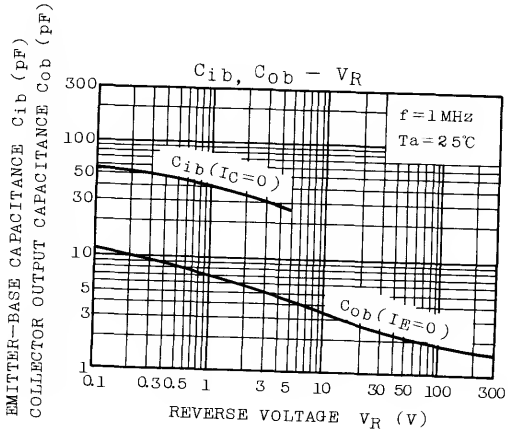

h_{FE} – I_C
DC CURRENT GAIN h_{FE}
Ta=100℃
25
−55
COMMON EMITTER
V_{CE}=10V
COLLECTOR CURRENT I_C (mA)


h_{FE} – I_C
DC CURRENT GAIN h_{FE}
V_{CE}=10V
1
5
COMMON EMITTER
Ta=25℃
COLLECTOR CURRENT I_C (mA)


$V_{CE(sat)}$ – I_C
COLLECTOR−EMITTER SATURATION VOLTAGE $V_{CE(sat)}$ (V)
COMMON EMITTER
I_C/I_B=10
Ta=100℃
25
−55
COLLECTOR CURRENT I_C (mA)


$V_{BE(sat)}$ – I_C
BASE−EMITTER SATURATION VOLTAGE $V_{BE(sat)}$ (V)
COMMON EMITTER
I_C/I_B=10
Ta=−55℃
25
100
COLLECTOR CURRENT I_C (mA)


f_T – I_C
TRANSITION FREQUENCY f_T(MHz)
COMMON EMITTER
Ta=25℃
V_{CE}=20V
10
5
COLLECTOR CURRENT I_C (mA)


C_{ib}, C_{ob} – V_R
EMITTER−BASE CAPACITANCE C_{ib} (pF)
COLLECTOR OUTPUT CAPACITANCE C_{ob} (pF)
f=1MHz
Ta=25℃
C_{ib}(I_C=0)
C_{ob}(I_E=0)
REVERSE VOLTAGE V_R (V)