SILICON NPN EPITAXIAL TYPE (PCT PROCESS)

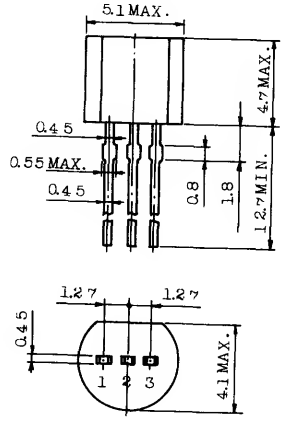
S1420

GENERAL PURPOSE AMPLIFIER AND LOW NOISE AMPLIFIER APPLICATIONS.

FEATURES:

- Excellent h_{FE} Linearity : $h_{FE}(0.1mA)/h_{FE}(2mA)$ =0.95(Typ.)
- Designed for Complementary Use with S1423(h_{FE}=70~400)
- Small Collector Output Capacitance: C_{ob}=3.5pF(Max.)

Unit in mm



1. EMITTER
2. BASE
3. COLLECTOR

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

Weight : 0.21g

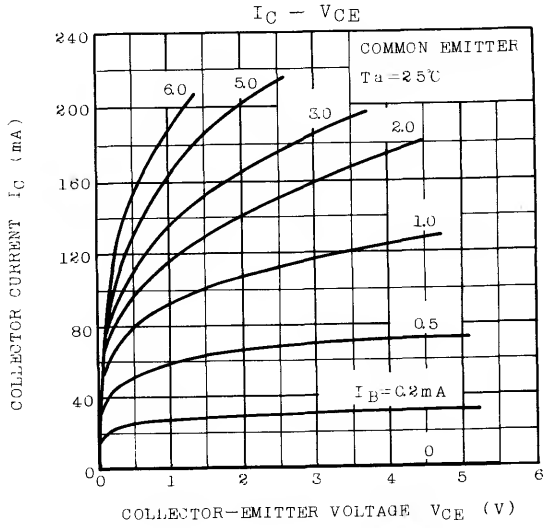
MAXIMUM RATINGS (Ta=25°C)

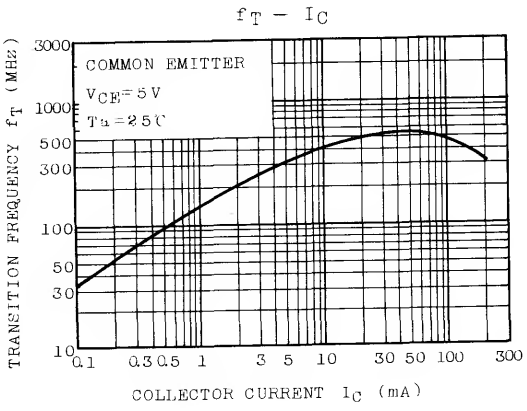
CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector-Base Voltage	V_{CBO}	60	V
Collector-Emitter Voltage	V_{CEO}	60	V
Emitter-Base Voltage	V_{EBO}	7	V
Collector Current	I_C	200	mA
Base Current	I_B	200	mA
Collector Power Dissipation	P_C	625	mW
Junction Temperature	T_j	150	°C
Storage Temperature Range	Tstg	-55~150	°C

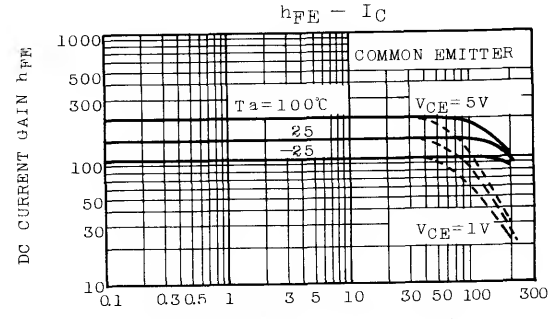
ELECTRICAL CHARACTERISTICS (Ta=25°C)

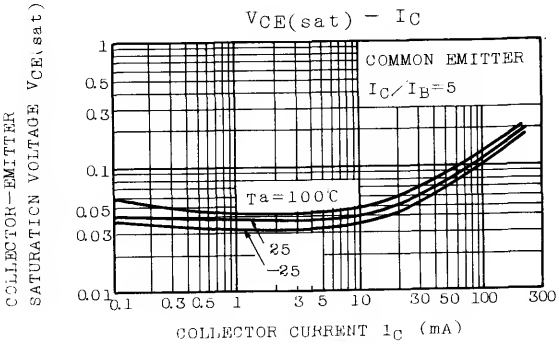
CHARACTERISTIC	SYMBOL	CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current	I_{CBO}	V_{CB}=40V, I_E=0	-	-	50	nA
Emitter Cut-off Current	I_{EBO}	V_{EB}=6V, I_C=0	-	-	100	nA
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	I_C=1mA, I_B=0	60	-	-	V
DC Current Gain	h_{FE}	V_{CE}=5V, I_C=2mA	70	-	700	
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	I_C=50mA, I_B=10mA	-	-	0.22	V
Base-Emitter Voltage	V_{BE}	V_{CE}=5V, I_C=2mA	-	0.65	-	V
Collector Output Capacitance	C_{ob}	V_{CB}=10V, I_E=0, f=1MHz	-	-	3.5	pF
Transition Frequency	f_T	V_{CE}=5V, I_C=10mA	150	400	-	MHz

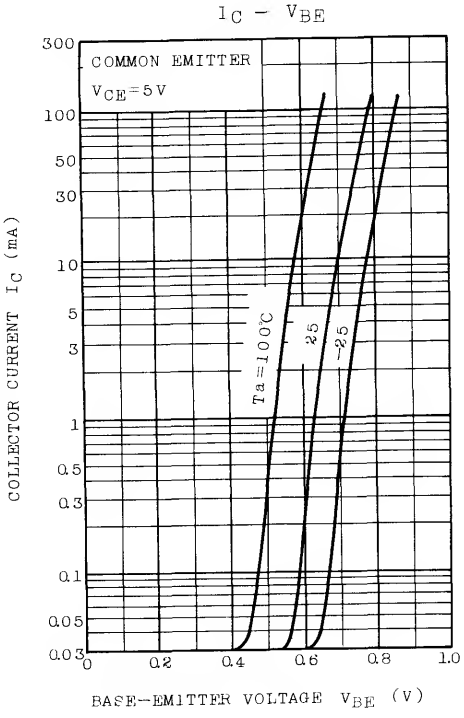
S1420


$I_C - V_{CE}$
COMMON EMITTER
Ta=25℃
6.0
5.0
3.0
2.0
1.0
0.5
I_B=0.2mA
0
COLLECTOR CURRENT I_C (mA)
COLLECTOR-EMITTER VOLTAGE V_{CE} (V)


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


$h_{FE} - I_C$
COMMON EMITTER
Ta=100℃
25
−25
V_{CE}=5V
V_{CE}=1V
DC CURRENT GAIN h_{FE}
COLLECTOR CURRENT I_C (mA)


$V_{CE(sat)} - I_C$
COMMON EMITTER
I_C/I_B=5
Ta=100℃
25
−25
COLLECTOR-EMITTER SATURATION VOLTAGE $V_{CE(sat)}$ (V)
COLLECTOR CURRENT I_C (mA)


$I_C - V_{BE}$
COMMON EMITTER
V_{CE}=5V
Ta=100℃
25
−25
COLLECTOR CURRENT I_C (mA)
BASE-EMITTER VOLTAGE V_{BE} (V)