2SB1019

SILICON PNP TRIPLE DIFFUSED TYPE (PCT PROCESS)

HIGH CURRENT SWITCHING APPLICATIONS.

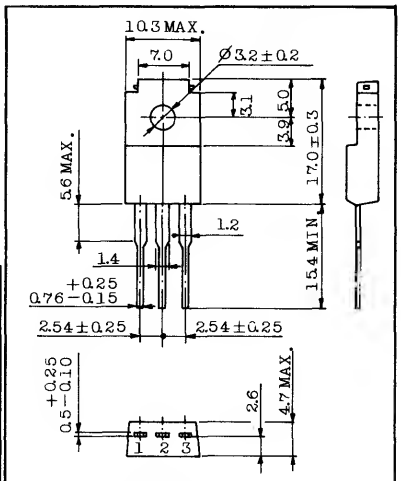
POWER AMPLIFIER APPLICATIONS.

FEATURES:

. Low Collector Saturation Voltage
  : $V_{CE(sat)}$=-0.4V(Max.) at I_C=-4A

. Complementary to 2SD1412

Unit in mm



1. BASE
2. COLLECTOR
3. EMITTER

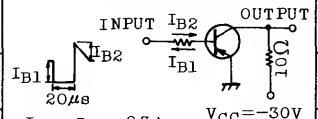
JEDEC	—
EIAJ	—
TOSHIBA	2-10L1A

Weight : 2.1g

MAXIMUM RATINGS (Ta=25°C)

CHARACTERISTIC		SYMBOL	RATING	UNIT
Collector-Base Voltage		V_{CBO}	-70	V
Collector-Emitter Voltage		V_{CEO}	-50	V
Emitter-Base Voltage		V_{EBO}	-5	V
Collector Current		I_C	-7	A
Base Current		I_B	-1	A
Collector Power Dissipation	Ta=25°C	P_C	2.0	W
	Tc=25°C		30	
Junction Temperature		T_j	150	°C
Storage Temperature Range		T_{stg}	-55~150	°C

ELECTRICAL CHARACTERISTICS (Ta=25°C)

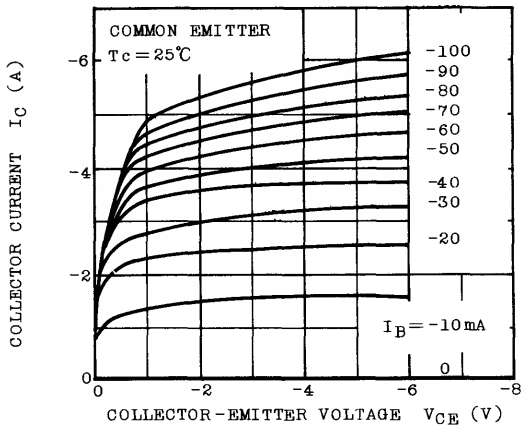
CHARACTERISTIC		SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current		I_{CBO}	V_{CB}=-70V, I_E=0	-	-	-30	μA
Emitter Cut-off Current		I_{EBO}	V_{EB}=-5V, I_C=0	-	-	-50	μA
Collector-Emitter Breakdown Voltage		$V_{(BR)CEO}$	I_C=-50mA, I_B=0	-50	-	-	V
DC Current Gain		$h_{FE(1)}$ (Note)	V_{CE}=-1V, I_C=-1A	70	-	240	
		$h_{FE(2)}$	V_{CE}=-1V, I_C=-4A	30	-	-	
Saturation Voltage	Collector-Emitter	$V_{CE(sat)}$	I_C=-4A, I_B=-0.4A	-	-0.2	-0.4	V
	Base-Emitter	$V_{BE(sat)}$	I_C=-4A, I_B=-0.4A	-	-0.9	-1.2	
Transition Frequency		f_T	V_{CE}=-4V, I_C=-1A	-	10	-	MHz
Collector Output Capacitance		C_{ob}	V_{CB}=-10V, I_E=0, f=1MHz	-	250	-	pF
Switching Time	Turn-on Time	t_{on}		-	0.2	-	μs
	Storage Time	t_{stg}		-	2.5	-	
	Fall Time	t_f		-	0.5	-	

$-I_{B1}=I_{B2}=0.3A$

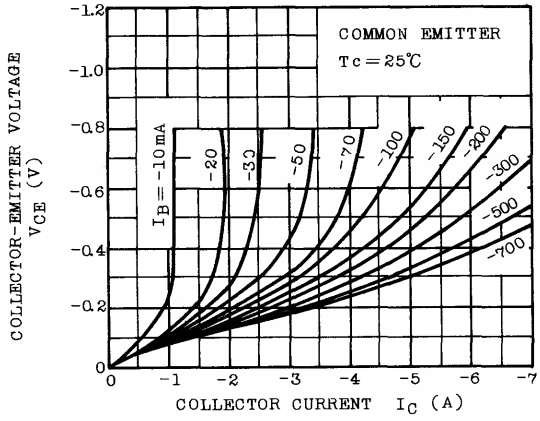
DUTY CYCLE≦1%

Note : $h_{FE(1)}$ Classification O : 70~140, Y : 120~240

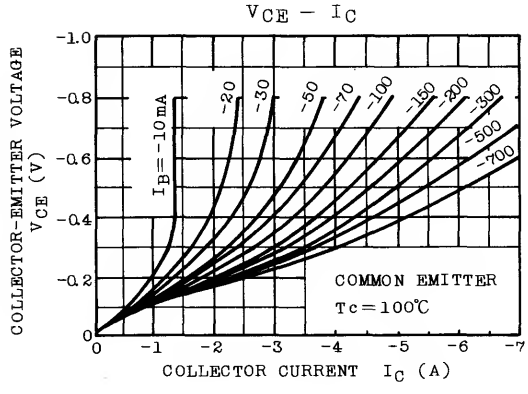
$I_C - V_{CE}$



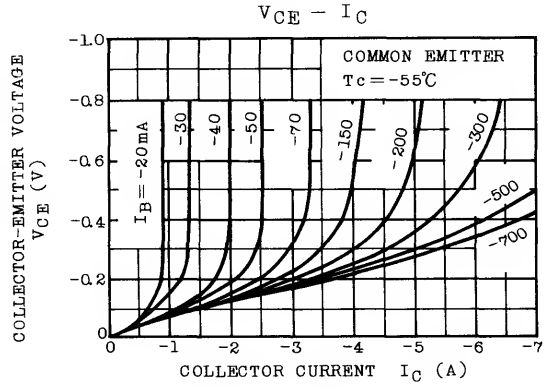
$V_{CE} - I_C$



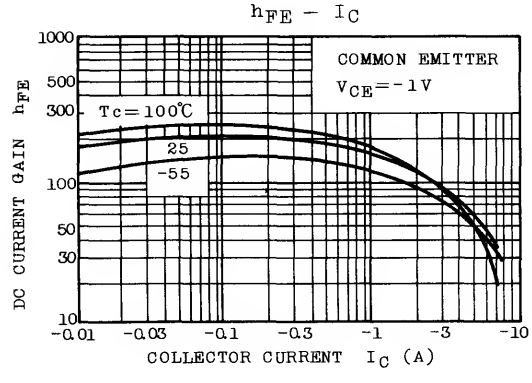
$V_{CE} - I_C$



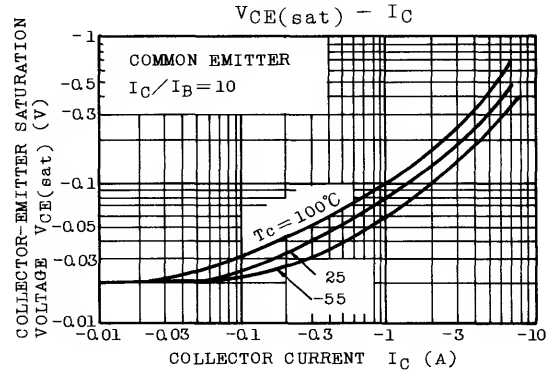
$V_{CE} - I_C$

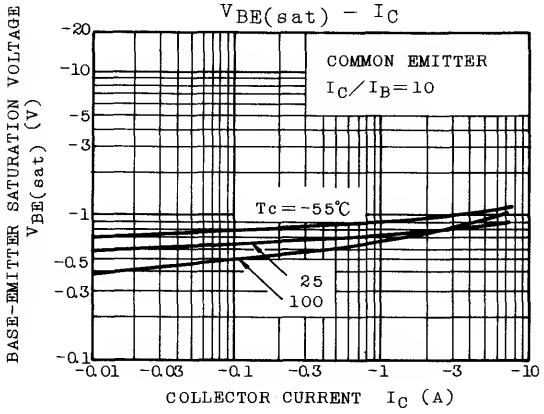


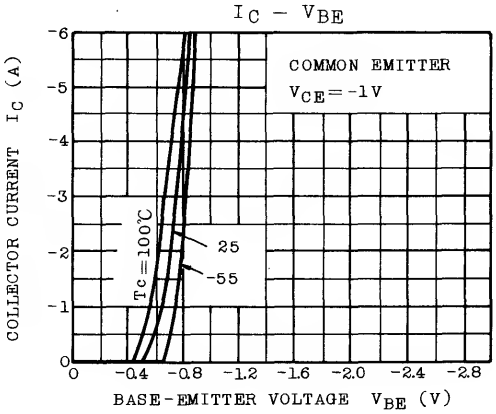
$h_{FE} - I_C$

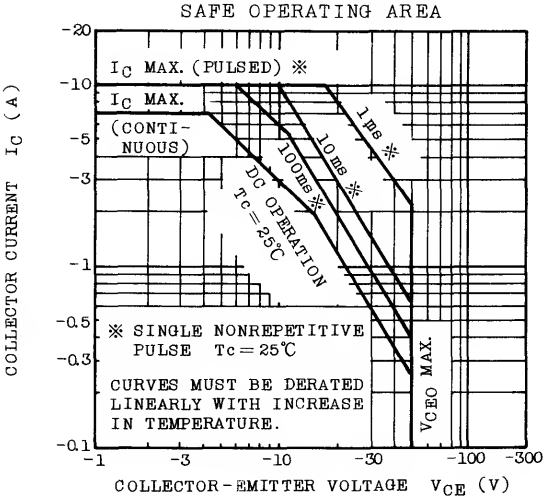


$V_{CE(sat)} - I_C$




$V_{BE(sat)}$ – I_C
COMMON EMITTER
$I_C/I_B=10$
Tc=-55℃
25
100
BASE-EMITTER SATURATION VOLTAGE $V_{BE(sat)}$ (V)
COLLECTOR CURRENT I_C (A)
-20
-10
-5
-3
-1
-0.5
-0.3
-0.1
-0.01
-0.03
-0.1
-0.3
-1
-3
-10


I_C – V_{BE}
COMMON EMITTER
$V_{CE}=-1V$
Tc=100℃
25
-55
COLLECTOR CURRENT I_C (A)
BASE-EMITTER VOLTAGE V_{BE} (V)
-6
-5
-4
-3
-2
-1
0
-0.4
-0.8
-1.2
-1.6
-2.0
-2.4
-2.8


SAFE OPERATING AREA
I_C MAX. (PULSED) ※
I_C MAX. (CONTINUOUS)
1ms ※
10ms ※
100ms ※
DC OPERATION
Tc=25℃
※ SINGLE NONREPETITIVE PULSE Tc=25℃
CURVES MUST BE DERATED LINEARLY WITH INCREASE IN TEMPERATURE.
V_{CEO} MAX.
COLLECTOR CURRENT I_C (A)
COLLECTOR-EMITTER VOLTAGE V_{CE} (V)
-20
-10
-5
-3
-1
-0.5
-0.3
-0.1
-1
-3
-10
-30
-100
-300