DATA SHEET

2SB1386

PNP GENERAL PURPOSE TRANSISTORS

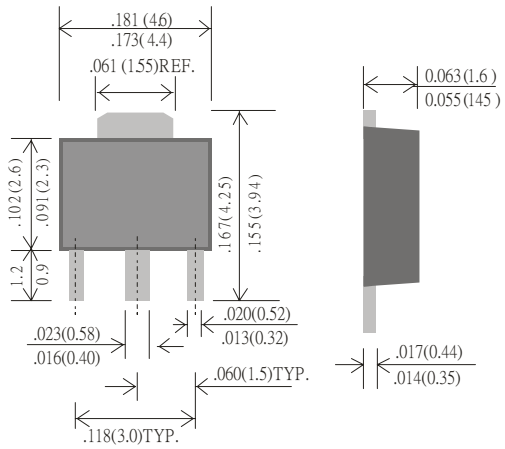
VOLTAGE **-20 Volts** **CURRENT** **-5.0 Ampere**

FEATURES

- NPN SILICON EPITAXIAL PLANAR TRANSISTOR FOR SWITCHING AND AMPLIFIER APPLICATIONS
- COLLECTOR-EMITTER VOLTAGE VCE = -20V
- COLLECTOR CURRENT IC = -5 A

MECHANICAL DATA

- CASE：SOT-89,PLASTIC
- TERMINALS：SOLDERABLE PER MIL-STD-202, METHOD 208
- APPROX. WEIGHT:0.002 GRAMS



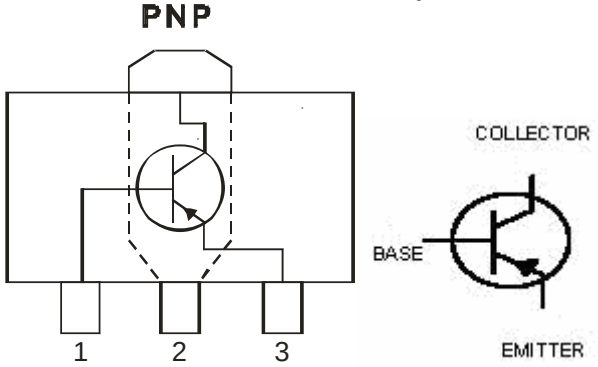
CASE：SOT-89

DIMENSIONS IN INCHES (MILLIMETERS)

MAXIMUM RATINGS

RATINGS AT 25°C AMBIENT TEMPERATURE UNLESS OTHERWISE SPECIFIED.			
PARAMETER	SYMBOL	VALUE	UNITS
COLLECTOR-EMITTER VOLTAGE	V_{CEO}	-20	V
COLLECTOR-BASE VOLTAGE	V_{CBO}	-30	V
EMITTER-BASE VOLTAGE	V_{EBO}	-6.0	V
COLLECTOR CURRENT-CONTINUOUS	I_C	-5.0	A
COLLECTOR POWER DISSIPATION	P_C	500	mW
JUNCTION AND STORAGE TEMPERATURE RANGE	T_J,T_{STG}	- 55 TO +150	°C

NOTE: 1. INDICATES DATA IN ADDITION TO JEDEC REQUIREMENTS.



ELECTRICAL CHARACTERISTICS

ELECTRICAL CHARACTERISTICS (A_T T_A = 25˚C UNLESS OTHERWISE NOTED)					
OFF CHARACTERISTICS					
PARAMETER	TEST CONDITION	SYMBOL	MIN.	MAX.	UNITS
COLLECTOR-EMITTER BREAKDOWN VOLTAGE (NOTE 2)	I_C = -1mA , I_B =0	$V_{(BR)CEO}$	-20	-	V
COLLECTOR-BASE BREAKDOWN VOLTAGE	I_C = -100μA , I_E =0	$V_{(BR)CBO}$	-30	-	V
EMITTER-BASE BREAKDOWN VOLTAGE	I_E = -100μA , I_C =0	$V_{(BR)EBO}$	-6.0	-	V
EMITTER CUT-OFF CURRENT	V_{EB} = -5V , I_C =0	I_{EBO}	-	-0.5	μA
COLLECTOR CUT-OFF CURRENT	V_{CB} = -20V , I_E =0	I_{CBO}	-	-0.5	μA
ON CHARACTERISTICS (NOTE 2)					
DC CURRENT GAIN	I_C = -500mA , V_{CE} = -2V	h_{FE}	82	390	
COLLECTOR-EMITTER SATURATION VOLTAGE	I_C = -4A , I_B = -100mA	$V_{CE(SAT)}$	-	-1.0	V
SMALL-SIGNAL CHARACTERISTICS					
INPUT CAPACITANCE	V_{CB} =-20V, I_E =0, f=1.0MHz	Cob	60 (TYP.)		pF
CURRENT-GAIN-BANDWIDTH PRODUCT	I_C = -50mA , V_{CE} = -6V, f =30MHz	f_T	120 (TYP.)		MHz

NOTE: 2. PULSE TEST: PULSE WIDTH ≦ 300μs; DUTY CYCLE ≦ 2%.

CLASSIFICATION OF h_{FE}

RANK	P	Q	R
RANGE	82~180	120~270	180~390

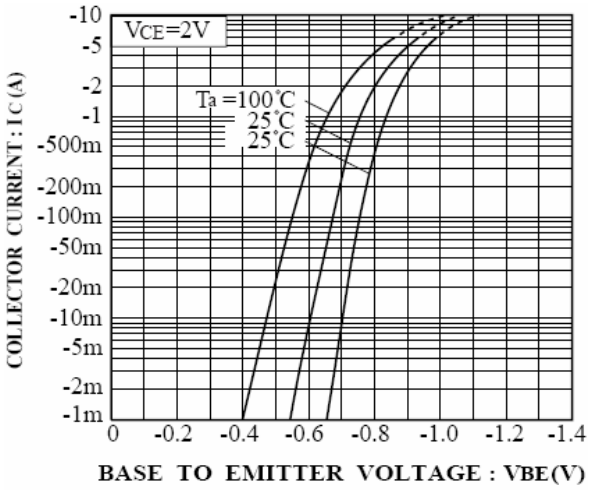


FIG.1 Grounded Emitter Propagation Characteristics

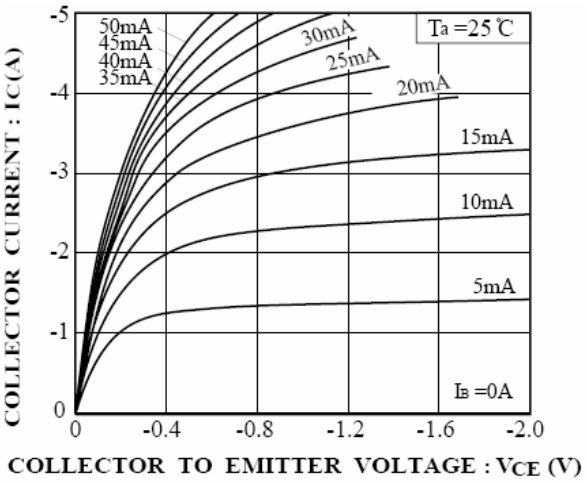


FIG.2 Grounded Emitter Output Characteristics

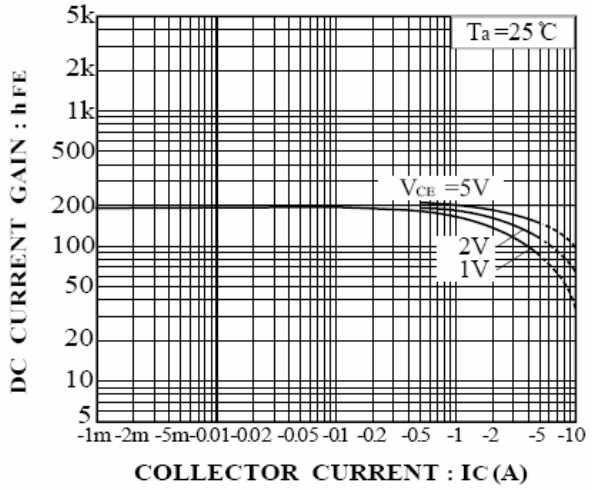


FIG.3 DC Current Gain vs. Collector Current

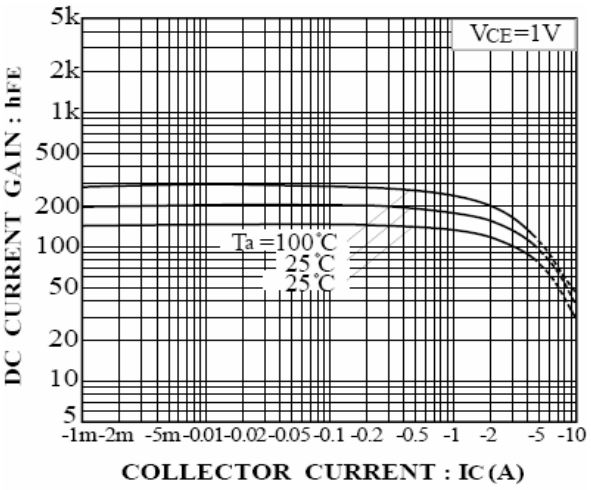


FIG.4 DC Current Gain vs. Collector Current

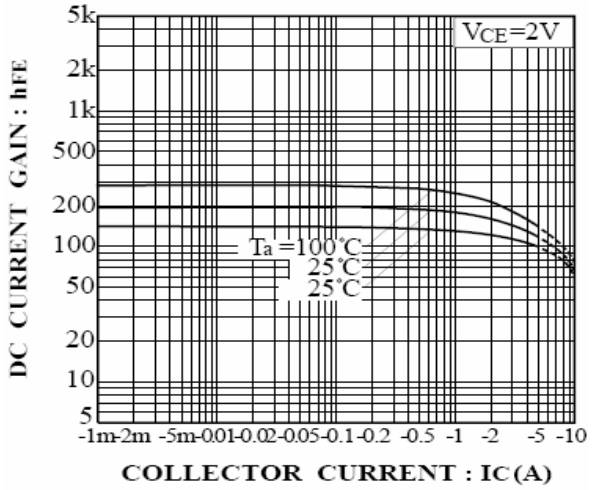


FIG.5 DC Current Gain vs. Collector Current

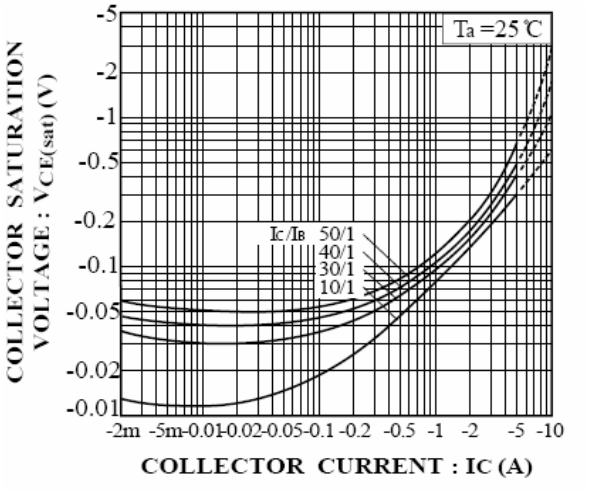


FIG.6 Collector-Emitter Saturation Voltage vs. Collector Current

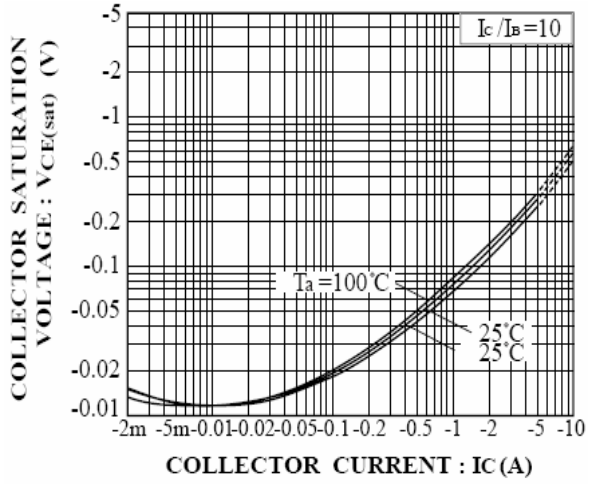


FIG.7 Collector-Emitter Saturation Voltage vs. Collector Current

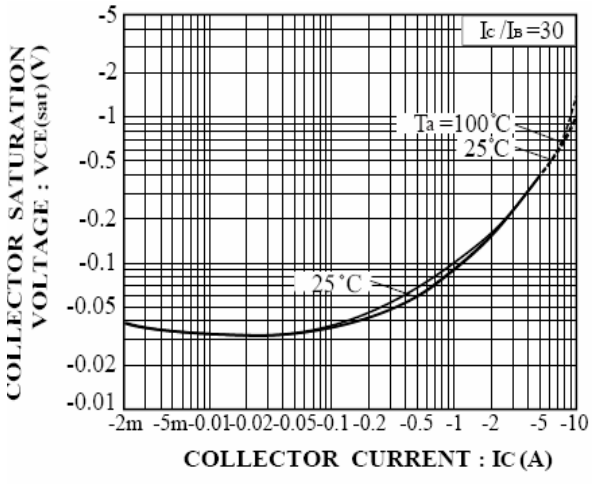


FIG.8 Collector-Emitter Saturation Voltage vs. Collector Current

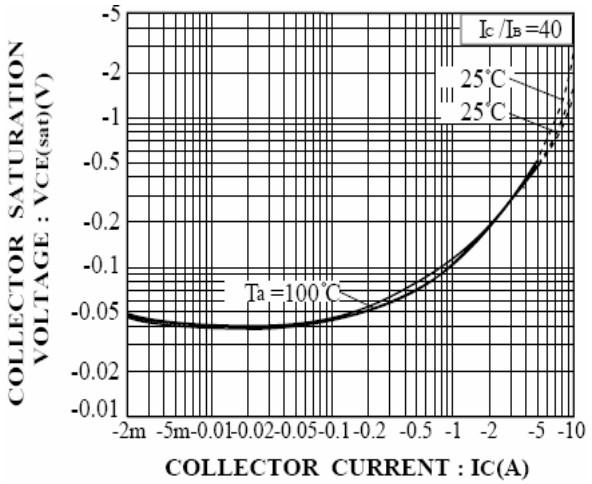


FIG.9 Collector-Emitter Saturation Voltage vs. Collector Current

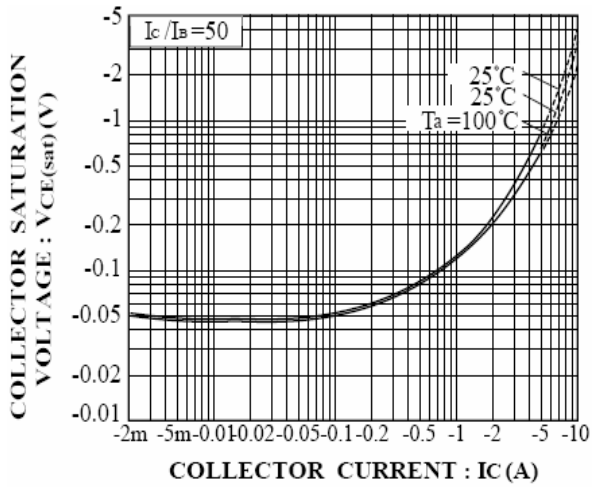


FIG.10 Collector-Emitter Saturation Voltage vs. Collector Current

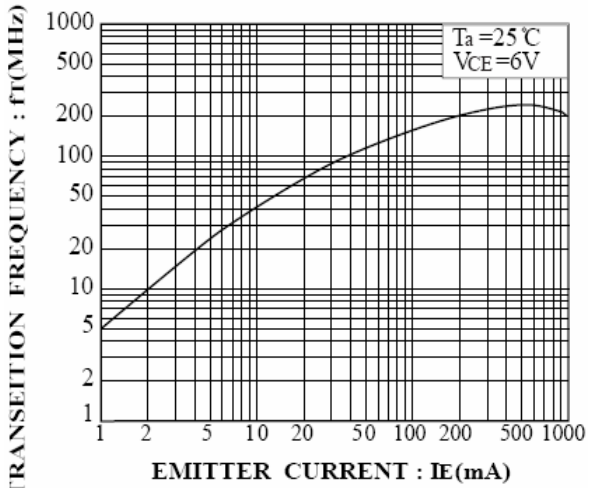


FIG.11 Gain Bandwidth Product vs. Emitter Current

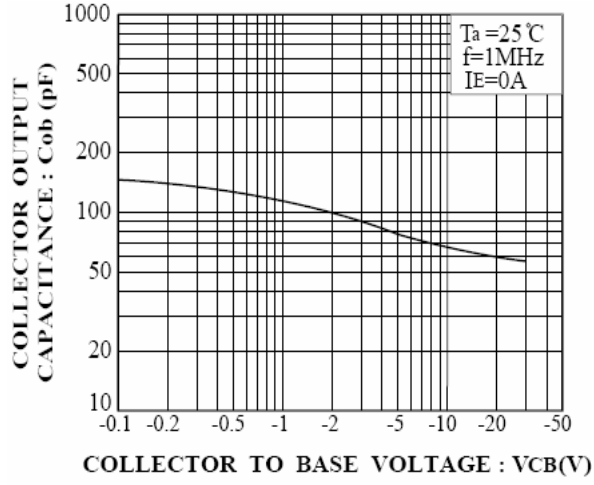


FIG.12 Collector Output Capacitance vs. Collector-Base Voltage