DATA SHEET

2SB1424

PNP GENERAL PURPOSE TRANSISTORS

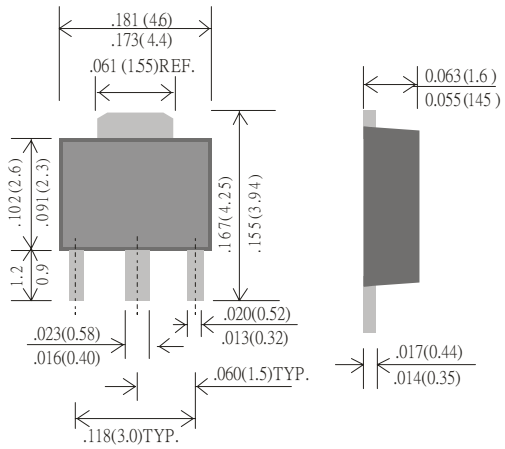
VOLTAGE **-20 Volts** **CURRENT** **-3.0 Ampere**

FEATURES

- PNP SILICON EPITAXIAL PLANAR TRANSISTOR FOR SWITCHING AND AMPLIFIER APPLICATIONS
- LOW COLLECTOR-EMITTER SATURATION VOLTAGE $V_{CE(SAT)}$ = -0.2V (TYP.)
- COLLECTOR CURRENT I_C/ I_B = -2A / -0.1A

MECHANICAL DATA

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



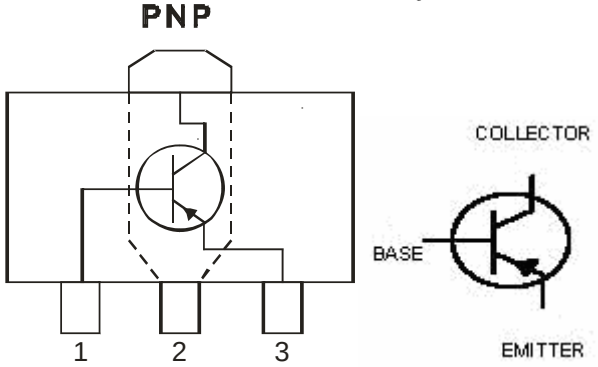
CASE：SOT-89

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}	-20	V
EMITTER-BASE VOLTAGE	V_{EBO}	-6.0	V
COLLECTOR CURRENT-CONTINUOUS	I_C	-3.0	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 = -50μA , I_E =0	$V_{(BR)CBO}$	-20	-	V
EMITTER-BASE BREAKDOWN VOLTAGE	I_E = -50μA , I_C =0	$V_{(BR)EBO}$	-6.0	-	V
EMITTER CUT-OFF CURRENT	V_{EB} = -5V , I_C =0	I_{EBO}	-	-0.1	μA
COLLECTOR CUT-OFF CURRENT	V_{CB} = -20V , I_E =0	I_{CBO}	-	-0.1	μA
ON CHARACTERISTICS (NOTE 2)					
DC CURRENT GAIN	I_C = -100mA , V_{CE} = -2V	h_{FE}	120	390	
COLLECTOR-EMITTER SATURATION VOLTAGE	I_C = -2A , I_B = -100mA	$V_{CE(SAT)}$	-	-0.5	V
SMALL-SIGNAL CHARACTERISTICS					
INPUT CAPACITANCE	V_{CB} =-10V, I_E =0, f=1.0MHz	Cob	35 (TYP.)		pF
CURRENT-GAIN-BANDWIDTH PRODUCT	I_C = -500mA , V_{CE} = -2V, f =100MHz	f_T	240 (TYP.)		MHz

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

CLASSIFICATION OF h_{FE}

RANK	Q	R
RANGE	120 ~ 270	180 ~ 390

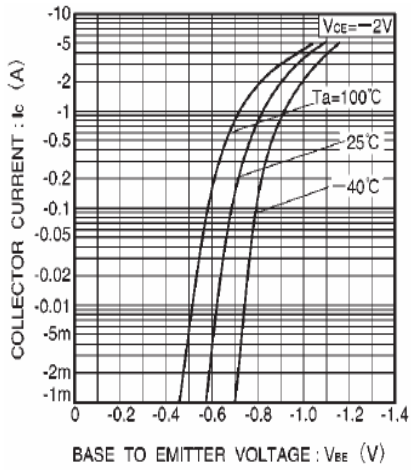


Fig.1 Grounded emitter propagation characteristics

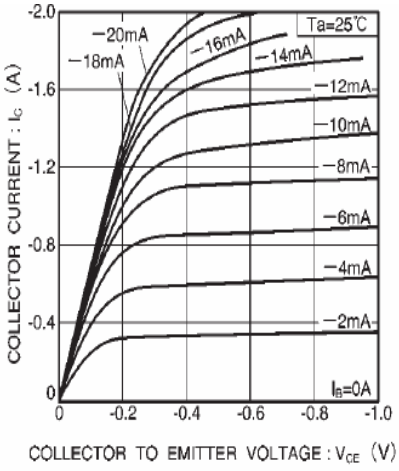


Fig.2 Grounded emitter output characteristics (Ⅰ)

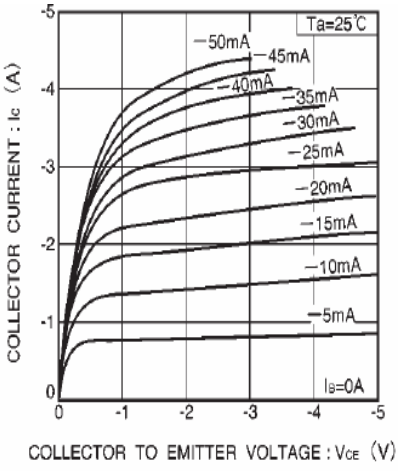


Fig.3 Grounded emitter output characteristics (Ⅱ)

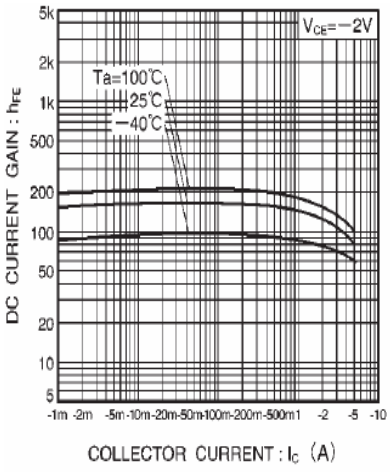


Fig.4 DC current gain vs. collector current

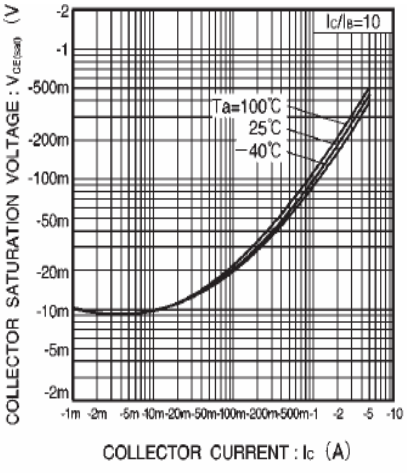


Fig.5 Collector-emitter saturation voltage vs. collector current (Ⅰ)

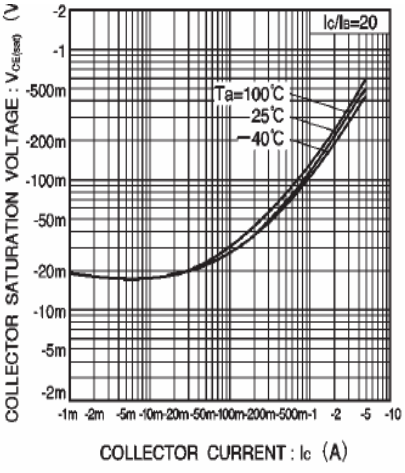


Fig.6 Collector-emitter saturation voltage vs. collector current (Ⅱ)

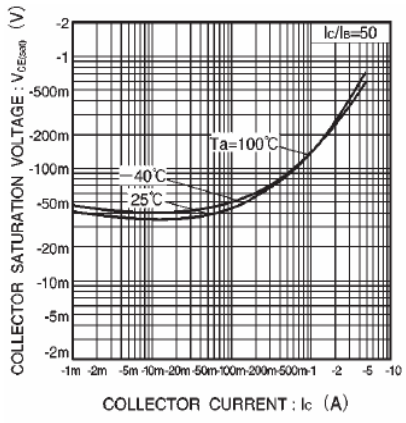


Fig.7 Collector-emitter saturation voltage vs. collector current (Ⅲ)

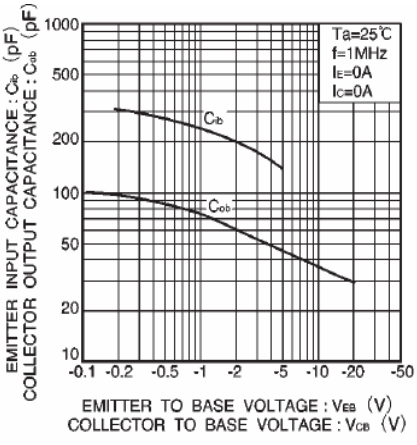


Fig.8 Gain bandwidth product vs. emitter current
Collector output capacitance vs. collector-base voltage

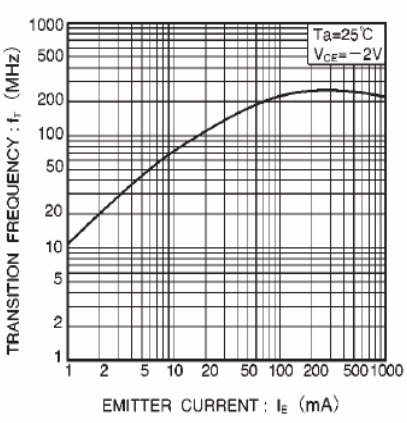


Fig.9 Emitter input capacitance vs. emitter base voltage