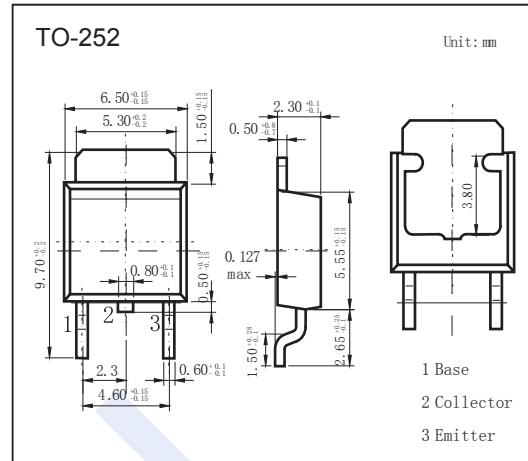


PNP Transistors

2SB1184

■ Features

- Low $V_{CE(sat)}$, $V_{CE(sat)} = -0.5V$
- Complementary to 2SD1760



■ Absolute Maximum Ratings $T_a = 25^\circ C$

Parameter	Symbol	Rating	Unit	
Collector - Base Voltage	V_{CBO}	-60	V	
Collector - Emitter Voltage	V_{CEO}	-50		
Emitter - Base Voltage	V_{EBO}	-5		
Collector Current - Continuous	I_C	-3	A	
Collector Power Dissipation	P_C	$T_c=25^\circ C$	15	W
		$T_a = 25^\circ C$	1	
Junction Temperature	T_J	150	$^\circ C$	
Storage Temperature range	T_{stg}	-55 to 150		

■ Electrical Characteristics $T_a = 25^\circ C$

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector- base breakdown voltage	V_{CBO}	$I_C = -100 \mu A, I_E = 0$	-60			V
Collector- emitter breakdown voltage	V_{CEO}	$I_C = -1 mA, I_B = 0$	-50			
Emitter - base breakdown voltage	V_{EBO}	$I_E = -100 \mu A, I_C = 0$	-5			
Collector-base cut-off current	I_{CBO}	$V_{CB} = -50V, I_E = 0$			-1	μA
Emitter cut-off current	I_{EBO}	$V_{EB} = -4V, I_C = 0$			-1	
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = -2 A, I_B = -200mA$			-1	V
Base - emitter saturation voltage	$V_{BE(sat)}$	$I_C = -2 A, I_B = -200mA$			-1.2	
DC current gain	h_{FE}	$V_{CE} = -3V, I_C = -500 mA$	120		390	
Collector output capacitance	C_{ob}	$V_{CB} = -10V, I_E = 0, f = 1MHz$		50		pF
Transition frequency	f_T	$V_{CE} = -5V, I_E = 500mA, f = 30 MHz$		70		MHZ

■ Classification of h_{FE}

Type	2SB1184-Q	2SB1184-R
Range	120-270	180-390

PNP Transistors

2SB1184

■ Typical Characteristics

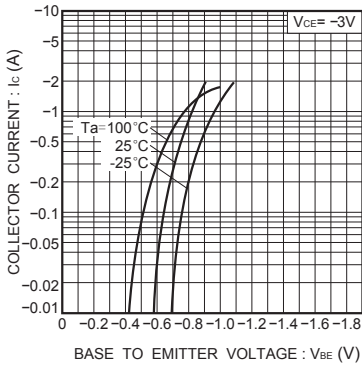


Fig.1 Grounded emitter propagation characteristics

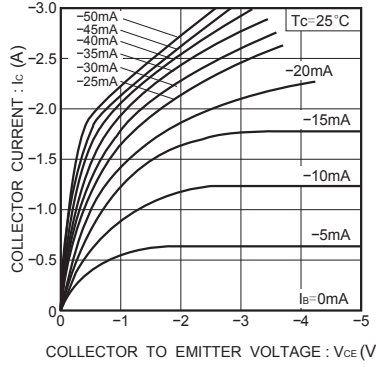


Fig.2 Grounded emitter output characteristics (I)

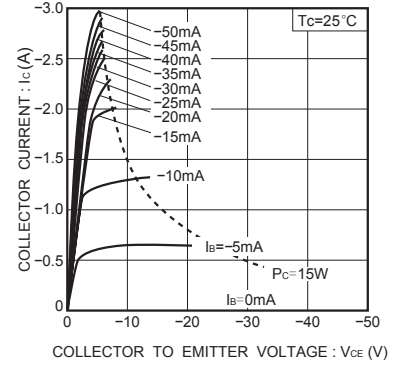


Fig.3 Grounded emitter output characteristics (II)

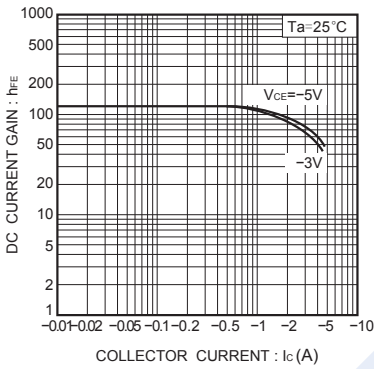


Fig.4 DC current gain vs. collector current (I)

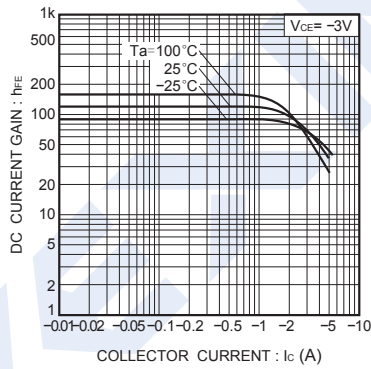


Fig.5 DC current gain vs. collector current (II)

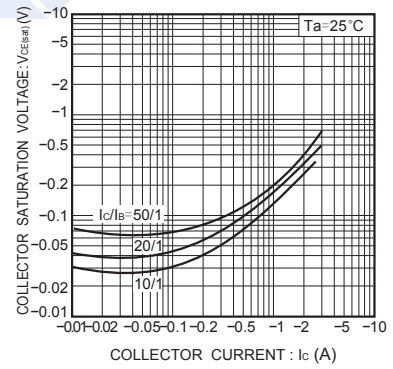


Fig.6 Collector-emitter saturation voltage vs. collector current

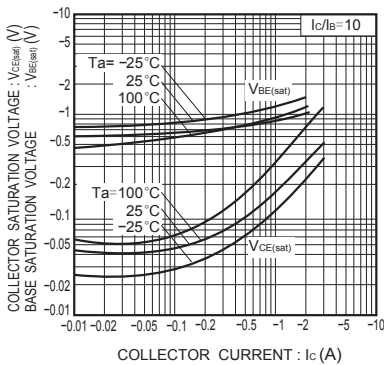


Fig.7 Collector-emitter saturation voltage vs. collector current
Base-emitter saturation voltage vs. collector current

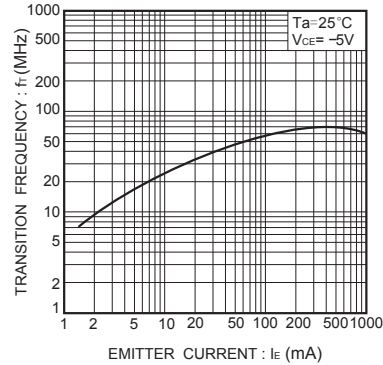


Fig.8 Gain bandwidth product vs. emitter current

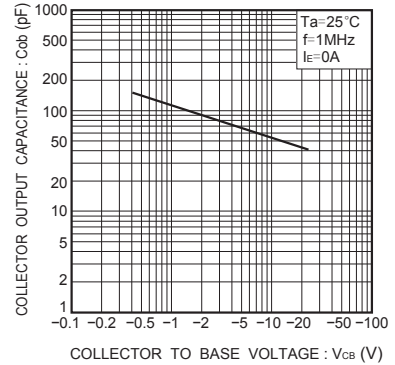


Fig.9 Collector output capacitance vs. collector base voltage

PNP Transistors

2SB1184

■ Typical Characteristics

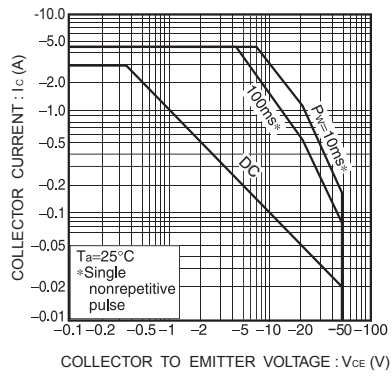


Fig.10 Safe operation area