

RoHS Compliant Product
A suffix of "-C" specifies halogen and lead free

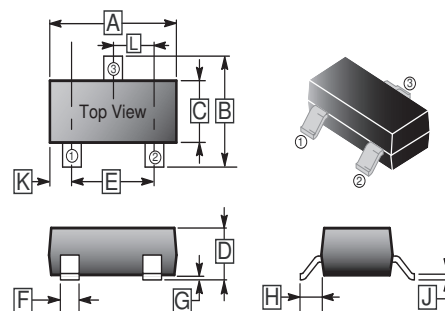
FEATURES

- Low $V_{CE(sat)}$, $V_{CE(sat)} \leq -0.5V (I_C / I_B = -0.5A / -50mA)$
- $I_C = -0.8A$
- Complements of the 2SD1781

CLASSIFICATION OF h_{FE}

Product-Rank	2SB1197-P	2SB1197-Q	2SB1197-R
Range	82~180	120~270	180~390
Marking	AHP	AHQ	AHR

SOT-23



PACKAGE INFORMATION

Package	MPQ	LeaderSize
SOT-23	3K	7' inch

REF.	Millimeter		REF.	Millimeter	
	Min.	Max.		Min.	Max.
A	2.80	3.04	G	0.09	0.18
B	2.10	2.55	H	0.45	0.60
C	1.20	1.40	J	0.08	0.177
D	0.89	1.15	K	0.6 REF.	
E	1.78	2.04	L	0.89	1.02
F	0.30	0.50			

ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ C$ unless otherwise specified)

Parameter	Symbol	Ratings	Unit
Collector to Base Voltage	V_{CBO}	-40	V
Collector to Emitter Voltage	V_{CEO}	-32	V
Emitter to Base Voltage	V_{EBO}	-5	V
Collector Current	I_C	-800	mA
Total Power Dissipation	P_C	200	mW
Junction & Storage Temperature	T_J, T_{STG}	+150, -55 ~ +150	$^\circ C$

ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ C$ unless otherwise specified)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Collector-base breakdown voltage	BV_{CBO}	-40	-	-	V	$I_C = -50\mu A, I_E = 0$
Collector-emitter breakdown voltage	BV_{CEO}	-32	-	-	V	$I_C = -1mA, I_B = 0$
Emitter-base breakdown voltage	BV_{EBO}	-5	-	-	V	$I_E = -50\mu A, I_C = 0$
Collector cut-off current	I_{CBO}	-	-	-0.5	μA	$V_{CB} = -20V, I_E = 0$
Emitter cut-off current	I_{EBO}	-	-	-0.5	μA	$V_{EB} = -4V, I_C = 0$
Collector-emitter saturation voltage	$V_{CE(sat)}$	-	-	-0.5	V	$I_C = -500mA, I_B = -50mA$
DC current gain	h_{FE}	82	-	390		$V_{CE} = -3V, I_C = -100mA$
Transition frequency	f_T	50	200	-	MHz	$V_{CE} = -5V, I_C = -50mA, f = 100MHz$
Collector output capacitance	C_{OB}	-	12	30	pF	$V_{CB} = -10V, I_E = 0, f = 1MHz$

CHARACTERISTIC CURVES

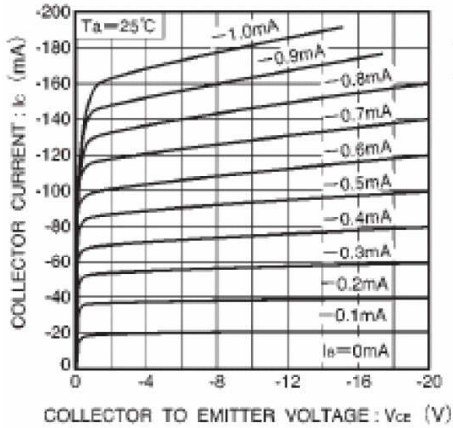


Fig.2 Grounded emitter output characteristics (I)

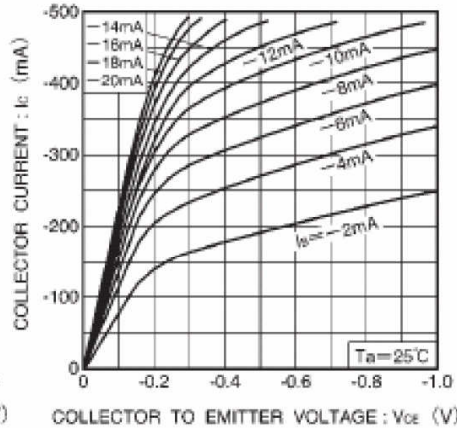


Fig.3 Grounded emitter output characteristics (II)

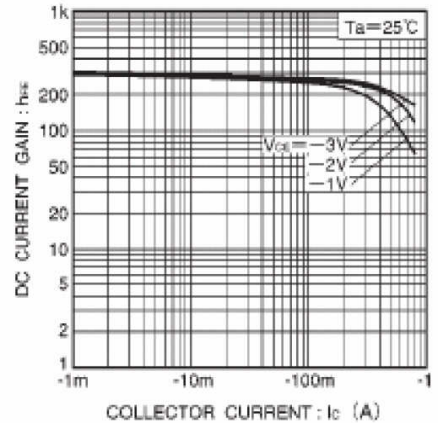


Fig.4 DC current gain vs. collector current

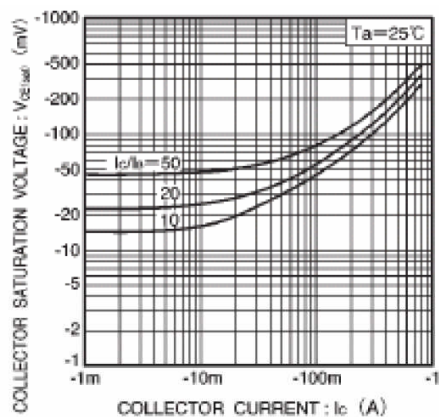


Fig.5 Collector-emitter saturation voltage vs. collector current

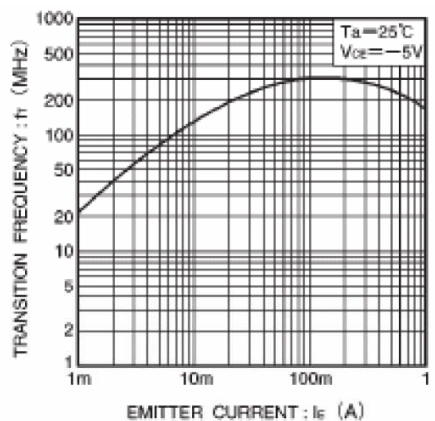


Fig.6 Gain bandwidth product vs. emitter current

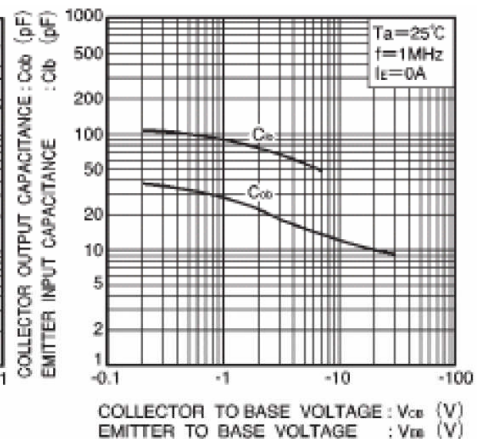


Fig.7 Collector output capacitance vs. collector-base voltage
Emitter input capacitance vs. emitter-base voltage

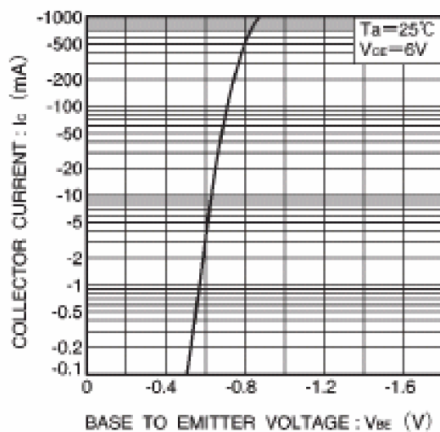


Fig.1 Grounded emitter propagation characteristics