Medium Power Transistor (–32V, –1A)

2SB1132 / 2SA1515S / 2SB1237

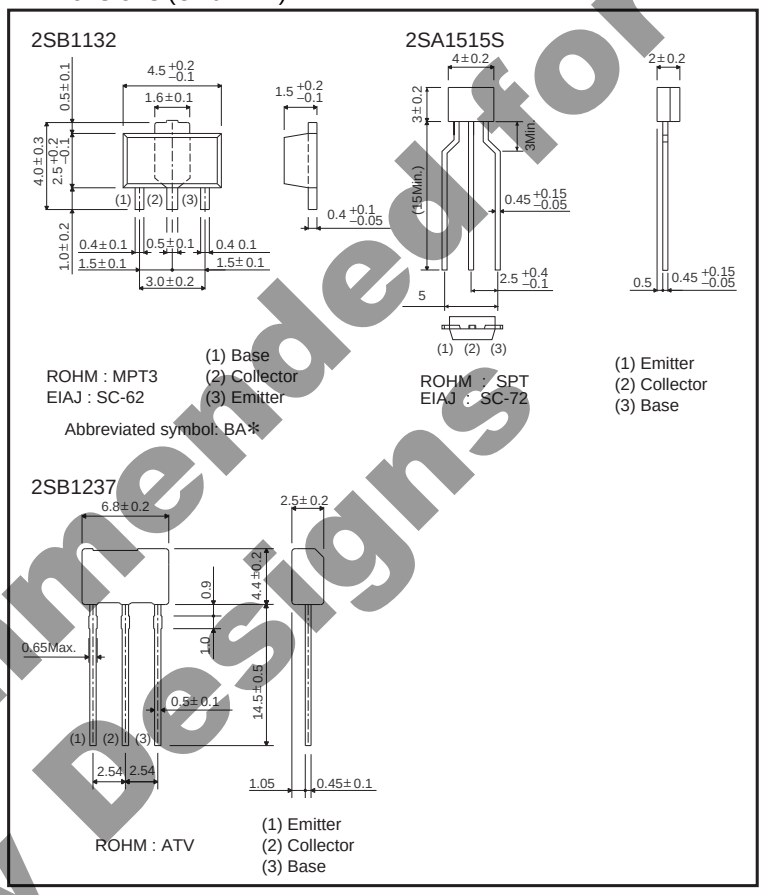
●Features

1) Low $V_{CE(sat)}$.
   $V_{CE(sat)}$ = –0.2V(Typ.)
   (I_C / I_B = –500mA / –50mA)
2) Compliments 2SD1664 / 2SD1858

●Structure

Epitaxial planar type
PNP silicon transistor

●Dimensions (Unit : mm)



* Denotes h_{FE}

●Absolute maximum ratings (Ta=25°C)

Parameter		Symbol	Limits	Unit	
Collector-base voltage		V_{CBO}	–40	V	
Collector-emitter voltage		V_{CEO}	–32	V	
Emitter-base voltage		V_{EBO}	–5	V	
Collector current		I_C	–1	A(DC)	
			–2	A(Pulse)	✻1
Collector power dissipation	2SB1132	P_C	0.5	W	
			2		✻2
	2SA1515S		0.3		
	2SB1237		1		✻3
Junction temperature		Tj	150	℃	
Storage temperature		Tstg	–55 to +150	℃	

✻1 Single pulse, Pw=100ms
✻2 When mounted on a 40×40×0.7 mm ceramic board.
✻3 Printed circuit board, 1.7 mm thick, collector copper plating 100mm^2 or larger.

●Electrical characteristics (Ta=25°C)

Parameter		Symbol	Min.	Typ.	Max.	Unit	Conditions	
Collector-base breakdown voltage		BV_{CBO}	–40	–	–	V	I_C= –50μA	
Collector-emitter breakdown voltage		BV_{CEO}	–32	–	–	V	I_C= –1mA	
Emitter-base breakdown voltage		BV_{EBO}	–5	–	–	V	I_E= –50μA	
Collector cutoff current		I_{CBO}	–	–	–0.5	μA	V_{CB}= –20V	
Emitter cutoff current		I_{EBO}	–	–	–0.5	μA	V_{EB}= –4V	
Collector-emitter saturation voltage		$V_{CE(sat)}$	–	–0.2	–0.5	V	I_C/I_B= –500mA/–50mA	✻
DC current transfer ratio	2SB1132, 2SB1237	h_{FE}	120	–	390	–	V_{CE}= –3V, I_C= –0.1A	✻
	2SA1515S		120	–	390	–		
Transition frequency		f_T	–	150	–	MHz	V_{CE}= –5V, I_E=50mA, f=30MHz	
Output capacitance		Cob	–	20	30	pF	V_{CB}= –10V, I_E=0A, f=1MHz	

✻ Measured using pulse current.

●Packaging specifications and h_{FE}

Type	h_{FE}	Package	Taping		
		Code	T100	TP	TU2
		Basic ordering unit (pieces)	1000	5000	2500
2SB1132	QR		○	–	–
2SA1515S	QR		–	○	–
2SB1237	QR		–	–	○

h_{FE} values are classified as follows :

Item	Q	R
h_{FE}	120 to 270	180 to 390

●Electrical characteristics curves

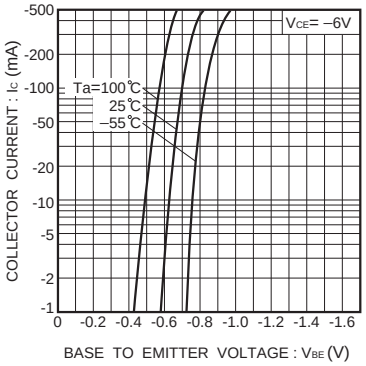


Fig.1 Grounded emitter propagation characteristics

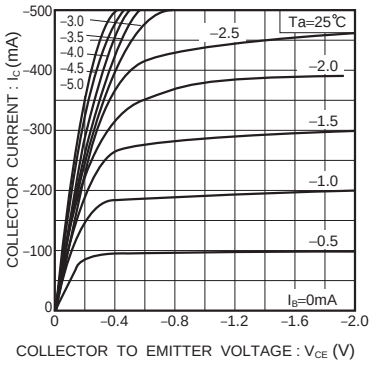


Fig.2 Grounded emitter output characteristics

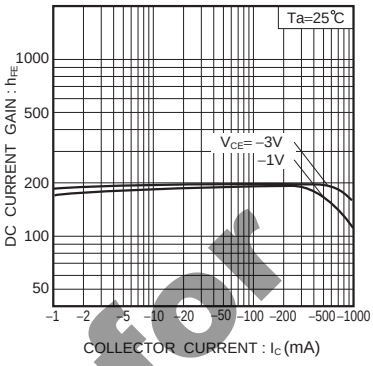


Fig.3 DC current gain vs. collector current(I)

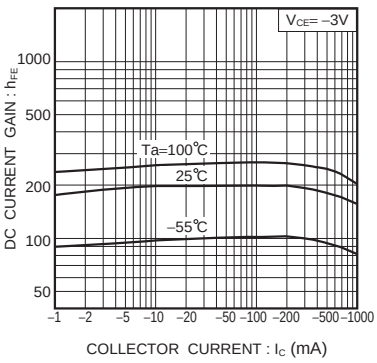


Fig.4 DC current gain vs. collector current(II)

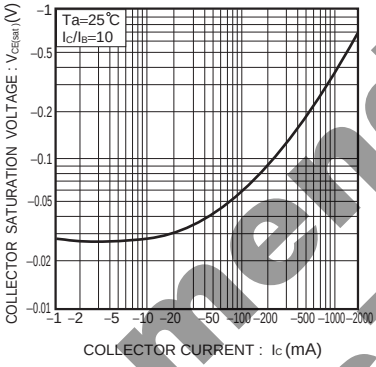


Fig.5 Collector-emitter saturation voltage vs. collector current

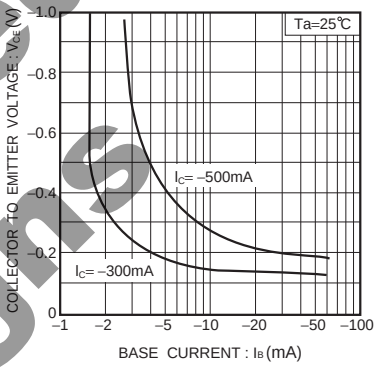


Fig.6 Collector-emitter saturation voltage vs. base current

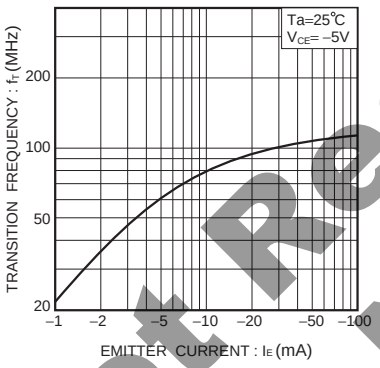


Fig.7 Gain bandwidth product vs. emitter current

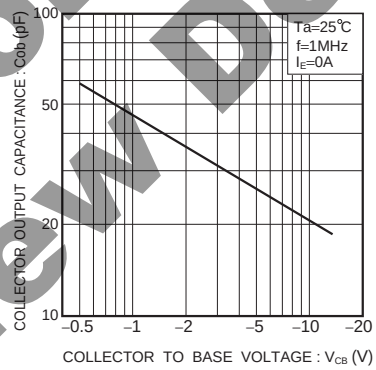


Fig.8 Collector output capacitance vs.collector-base voltage

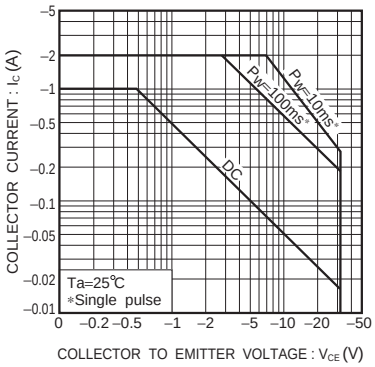


Fig.9 Safe operation area (2SB1132)

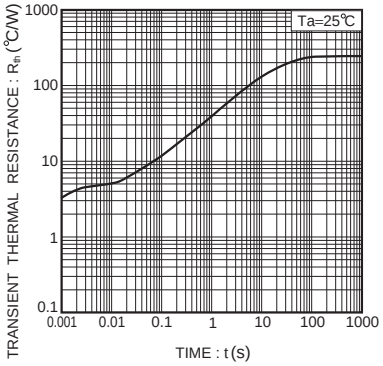


Fig.10 Transient thermal resistance (2SB1132)

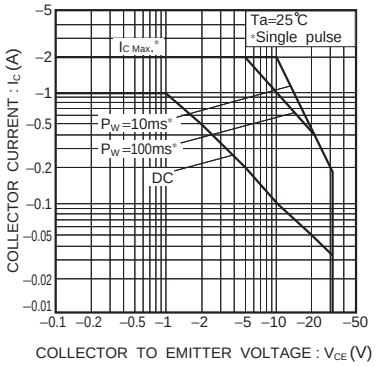


Fig.11 Safe operation area (2SB1237)

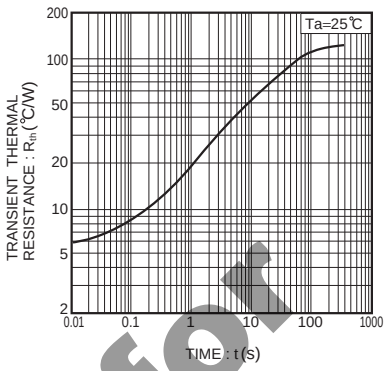


Fig.12 Transient thermal resistance (2SB1237)

Notes

1) The information contained herein is subject to change without notice.

2) Before you use our Products, please contact our sales representative and verify the latest specifications :

3) Although ROHM is continuously working to improve product reliability and quality, semiconductors can break down and malfunction due to various factors.
Therefore, in order to prevent personal injury or fire arising from failure, please take safety measures such as complying with the derating characteristics, implementing redundant and fire prevention designs, and utilizing backups and fail-safe procedures. ROHM shall have no responsibility for any damages arising out of the use of our Poducts beyond the rating specified by ROHM.

4) Examples of application circuits, circuit constants and any other information contained herein are provided only to illustrate the standard usage and operations of the Products. The peripheral conditions must be taken into account when designing circuits for mass production.

5) The technical information specified herein is intended only to show the typical functions of and examples of application circuits for the Products. ROHM does not grant you, explicitly or implicitly, any license to use or exercise intellectual property or other rights held by ROHM or any other parties. ROHM shall have no responsibility whatsoever for any dispute arising out of the use of such technical information.

6) The Products are intended for use in general electronic equipment (i.e. AV/OA devices, communication, consumer systems, gaming/entertainment sets) as well as the applications indicated in this document.

7) The Products specified in this document are not designed to be radiation tolerant.

8) For use of our Products in applications requiring a high degree of reliability (as exemplified below), please contact and consult with a ROHM representative : transportation equipment (i.e. cars, ships, trains), primary communication equipment, traffic lights, fire/crime prevention, safety equipment, medical systems, servers, solar cells, and power transmission systems.

9) Do not use our Products in applications requiring extremely high reliability, such as aerospace equipment, nuclear power control systems, and submarine repeaters.

10) ROHM shall have no responsibility for any damages or injury arising from non-compliance with the recommended usage conditions and specifications contained herein.

11) ROHM has used reasonable care to ensur the accuracy of the information contained in this document. However, ROHM does not warrants that such information is error-free, and ROHM shall have no responsibility for any damages arising from any inaccuracy or misprint of such information.

12) Please use the Products in accordance with any applicable environmental laws and regulations, such as the RoHS Directive. For more details, including RoHS compatibility, please contact a ROHM sales office. ROHM shall have no responsibility for any damages or losses resulting non-compliance with any applicable laws or regulations.

13) When providing our Products and technologies contained in this document to other countries, you must abide by the procedures and provisions stipulated in all applicable export laws and regulations, including without limitation the US Export Administration Regulations and the Foreign Exchange and Foreign Trade Act.

14) This document, in part or in whole, may not be reprinted or reproduced without prior consent of ROHM.

ROHM SEMICONDUCTOR

Thank you for your accessing to ROHM product informations.
More detail product informations and catalogs are available, please contact us.

ROHM Customer Support System

http://www.rohm.com/contact/