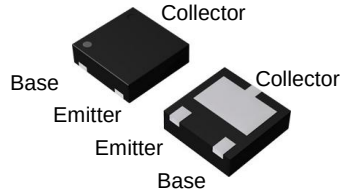
2SCR562F3

NPN 6A 30V Middle Power Transistor Datasheet

Parameter	Value
V_{CEO}	30V
I_C	6A

●Outline

HUML2020L3

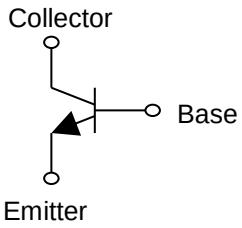


2SCR562F3

●Features

1) Suitable for Middle Power Driver
2) Low $V_{CE(sat)}$
   $V_{CE(sat)}$= 180mV(Max.) (I_C/I_B=3A/60mA)
3) High collector current
   I_C = 6A (max) , I_{CP} = 7A (max)
4) Leadless small SMD package "HUML2020L3"
   Excellent thermal and electrical conductivity
5) Lead Free/RoHS Compliant.

●Inner circuit



●Applications

Load switch, Battery-driven devices, Power management
Charging circuits, Power switches (e.g. motors, fans)

●Packaging specifications

Part No.	Package	Package size (mm)	Taping code	Reel size (mm)	Tape width (mm)	Basic ordering unit (pcs)	Marking
2SCR562F3	HUML2020L3	2020	TR	180	8	3,000	NT

© 2013 ROHM Co., Ltd. All rights reserved.

●Absolute maximum ratings (Ta = 25°C)

Parameter		Symbol	Values	Unit
Collector-base voltage		V_{CBO}	30	V
Collector-emitter voltage		V_{CEO}	30	V
Emitter-base voltage		V_{EBO}	6	V
Collector current	DC	I_C	6.0	A
	Pulsed	I_{CP} *1	7.0	A
Base Current		I_B	0.6	A
Power dissipation		P_D *2	1.0	W
		P_D *3	2.1	W
Junction temperature		T_j	150	°C
Range of storage temperature		T_{stg}	−55 to +150	°C

*1 Pw=1ms , single pulse
*2 Mounted on an FR4 board (25.4×25.4×1.6mm , 645mm^2 Cu PAD)
*3 Pw=10s , Mounted on an FR4 board (25.4×25.4×1.6mm , 645mm^2 Cu PAD)

●Electrical characteristics (Ta = 25°C)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Collector-emitter breakdown voltage	BV_{CEO}	I_C = 1mA	30	-	-	V
Collector-base breakdown voltage	BV_{CBO}	I_C = 100μA	30	-	-	V
Emitter-base breakdown voltage	BV_{EBO}	I_E = 100μA	6	-	-	V
Collector cut-off current	I_{CBO}	V_{CB} = 20V	-	-	0.5	μA
Emitter cut-off current	I_{EBO}	V_{EB} = 4V	-	-	0.5	μA
Collector-emitter saturation voltage	$V_{CE(sat)}$	I_C = 3A, I_B = 60mA	-	120	180	mV
Base-emitter saturation voltage	$V_{BE(sat)}$	I_C = 3A, I_B = 60mA	-	0.9	1.2	V
DC current gain	h_{FE}	V_{CE} = 2V, I_C = 500mA	200	-	500	-
Transition frequency	f_T	V_{CE} = 10V, I_E = −500mA f=100MHz	-	270	-	MHz
Output capacitance	C_{ob}	V_{CB} = 10V, I_E = 0A f = 1MHz	-	40	-	pF

© 2013 ROHM Co., Ltd. All rights reserved.

●**Electrical characteristic curves**(Ta = 25°C)

Fig.1 Ground Emitter Propagation Characteristics

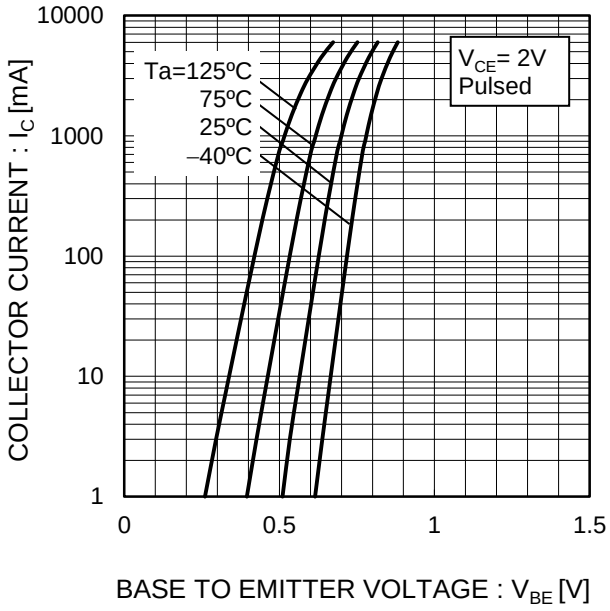


Fig.2 Typical Output Characteristics

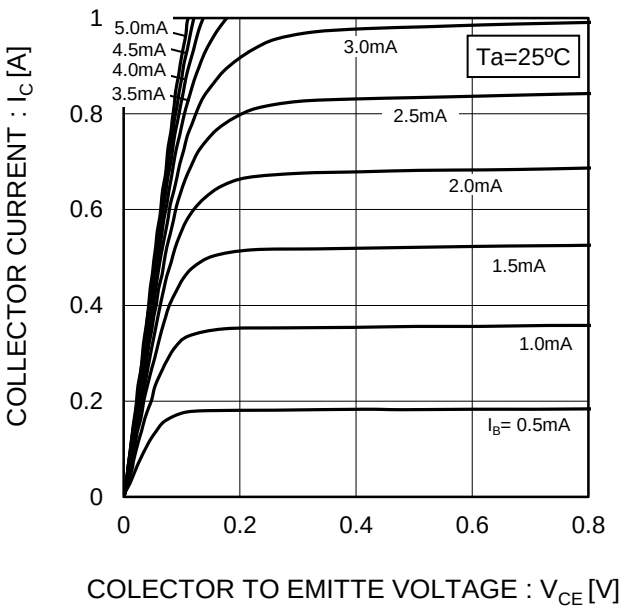


Fig.3 DC Current Gain vs. Collector Current(I)

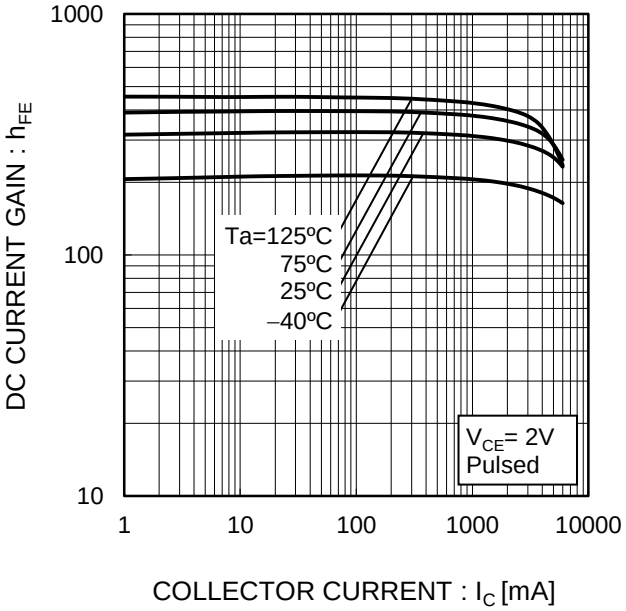
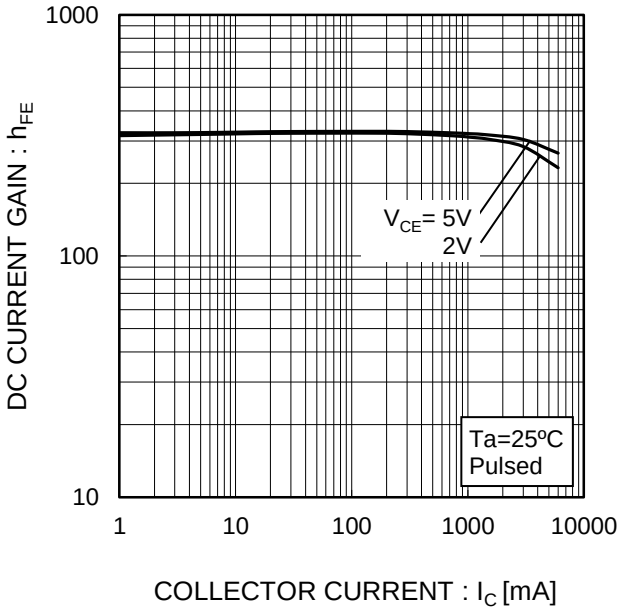


Fig.4 DC Current Gain vs. Collector Current(II)



© 2013 ROHM Co., Ltd. All rights reserved.

●**Electrical characteristic curves**(Ta = 25°C)

Fig.5 Collector-Emitter Saturation Voltage vs. Collector Current (I)

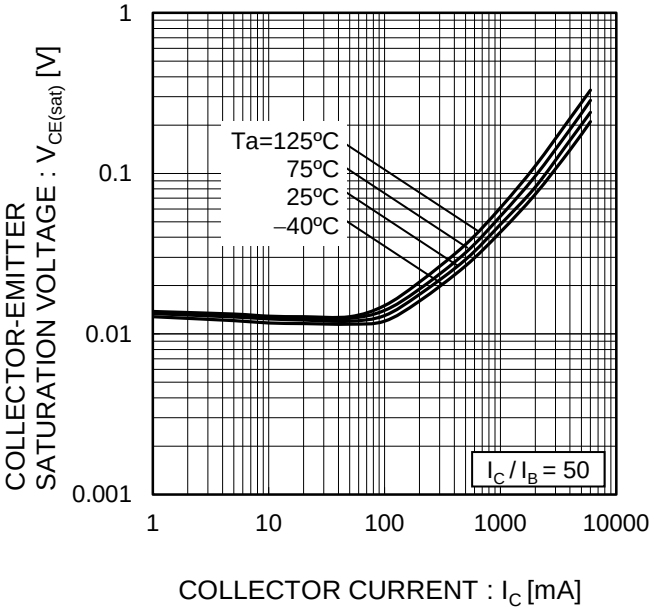


Fig.6 Collector-Emitter Saturation Voltage vs. Collector Current (II)

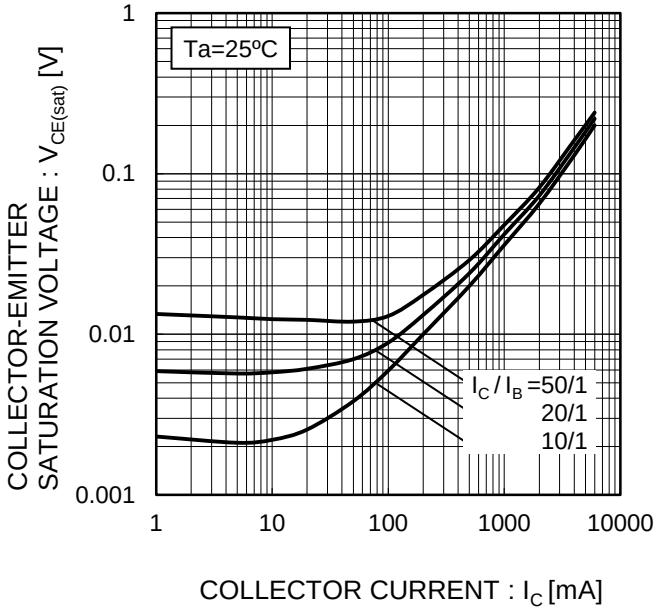


Fig.7 Base-Emitter Saturation Voltage vs. Collector Current

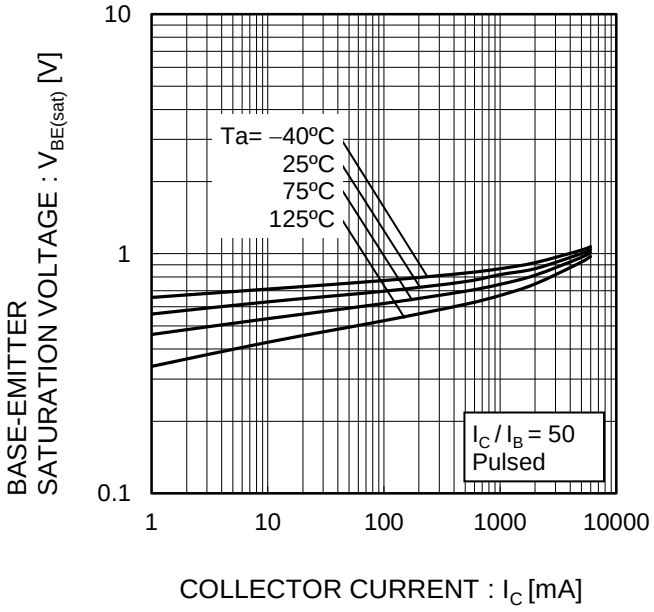
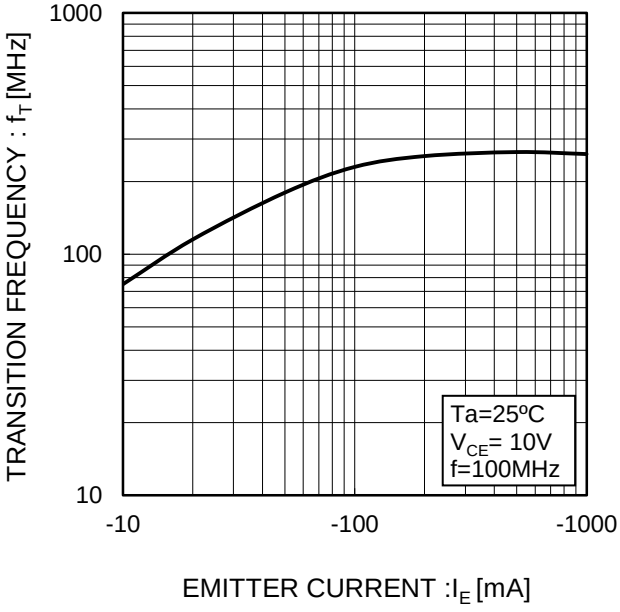


Fig.8 Gain Bandwidth Product vs. Emitter Current



© 2013 ROHM Co., Ltd. All rights reserved.

●**Electrical characteristic curves**(Ta = 25°C)

Fig.9 Emitter input capacitance vs. Emitter-Base Voltage
Collector output capacitance vs. Collector-Base Voltage

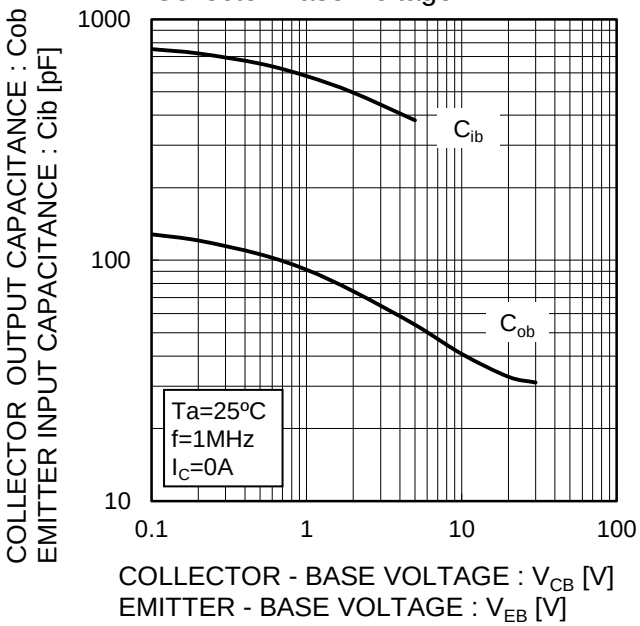
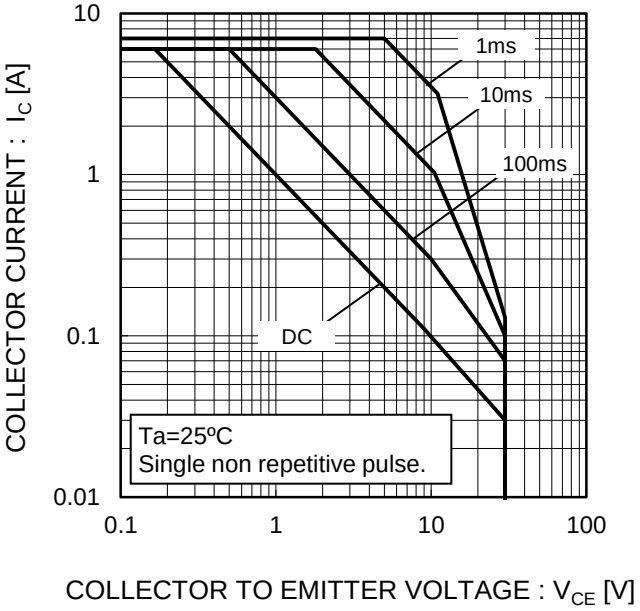


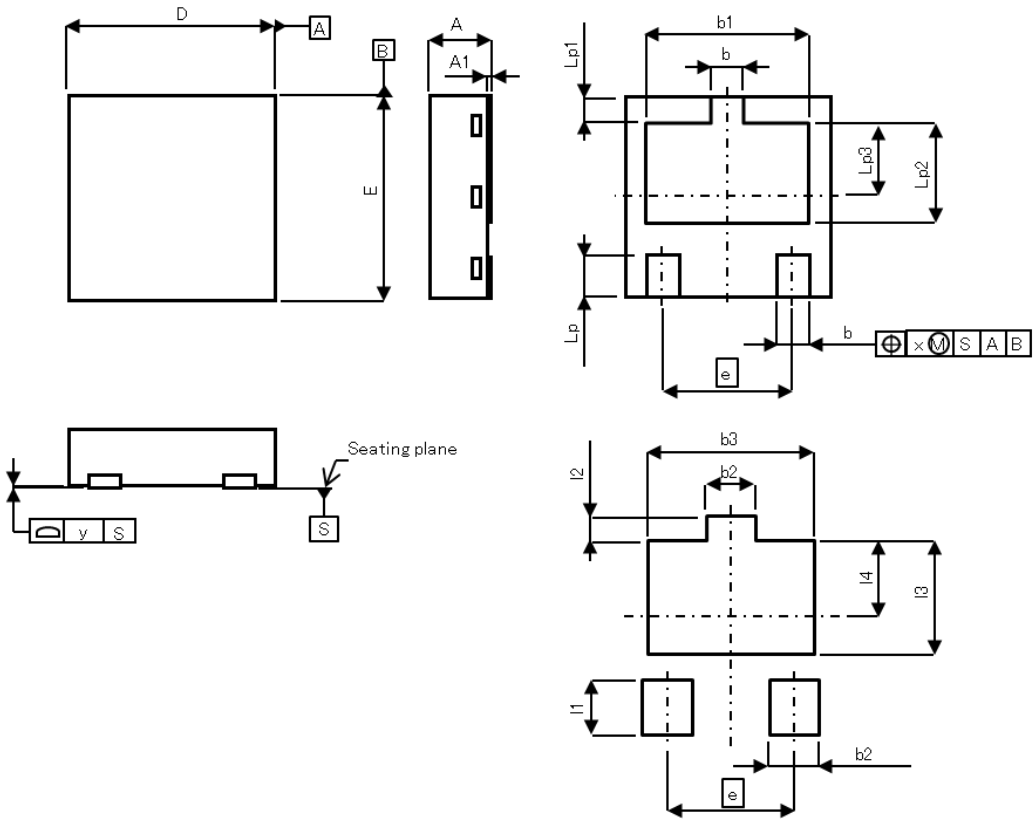
Fig.10 Safe Operating Area



© 2013 ROHM Co., Ltd. All rights reserved.

●**Dimensions** (Unit : mm)

HUML2020L3



Pattern of terminal position areas
[Not a recommended pattern of soldering pads]

DIM	MILIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	0.55	0.65	0.022	0.026
A1	0.00	0.05	0.000	0.002
b	0.25	0.35	0.010	0.014
b1	1.40	1.60	0.055	0.063
D	1.90	2.10	0.075	0.083
E	1.90	2.10	0.075	0.083
e	1.30		0.051	
Lp	0.35	0.45	0.014	0.018
Lp1	0.25 REF		0.01 REF	
Lp2	0.90	1.10	0.035	0.043
Lp3	0.70	0.80	0.028	0.031
x	-	0.10	-	0.004
y	-	0.10	-	0.004

DIM	MILIMETERS		INCHES	
	MIN	MAX	MIN	MAX
b2	-	0.45	-	0.018
b3	-	1.60	-	0.063
l1	-	0.55	-	0.022
l2	0.25 REF		0.01 REF	
l3	-	1.10	-	0.043
l4	-	0.80	-	0.031

Dimension in mm / inches

© 2013 ROHM Co., Ltd. All rights reserved.

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/

© 2013 ROHM Co., Ltd. All rights reserved.

2SCR562F3 - Web Page

Part Number	2SCR562F3
Package	HUML2020L3
Unit Quantity	3000
Minimum Package Quantity	3000
Packing Type	Taping
Constitution Materials List	inquiry
RoHS	Yes