

●Electrical characteristics (Ta=25°C)

<It is the same ratings for the Tr.1 and Tr.2>

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-emitter breakdown voltage	BV_{CEO}	30	-	-	V	$I_C = 1mA$
Collector-base breakdown voltage	BV_{CBO}	30	-	-	V	$I_C = 100\mu A$
Emitter-base breakdown voltage	BV_{EBO}	6	-	-	V	$I_E = 100\mu A$
Collector cut-off current	I_{CBO}	-	-	1	μA	$V_{CB} = 30V$
Emitter cut-off current	I_{EBO}	-	-	1	μA	$V_{EB} = 4V$
Collector-emitter saturation voltage	$V_{CE(sat)}^{*1}$	-	200	400	mV	$I_C = 1A, I_B = 50mA$
DC current gain	h_{FE}	200	-	500	-	$V_{CE} = 2V, I_C = 500mA$
Transition frequency	f_T^{*1}	-	270	-	MHz	$V_{CE} = 10V$ $I_E = -100mA, f = 100MHz$
Collector output capacitance	C_{ob}	-	16	-	pF	$V_{CB} = 10V, I_E = 0A$ $f = 1MHz$
Turn-on time	t_{on}^{*2}	-	25	-	ns	$I_C = 1.5A, I_{B1} = 150mA,$ $I_{B2} = -150mA, V_{CC} \approx 12V$
Storage time	t_{stg}^{*2}	-	300	-	ns	
Fall time	t_f^{*2}	-	20	-	ns	

*1 Pulsed

*2 See switching time test circuit

●Electrical characteristic curves (Ta=25°C)

Fig.1 Typical Output Characteristics

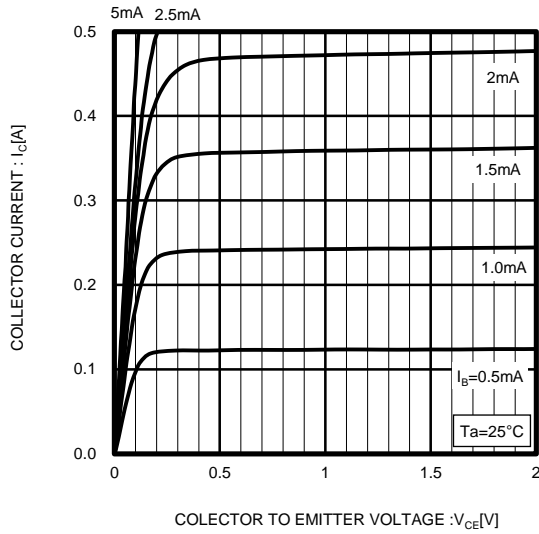


Fig.2 DC Current Gain vs. Collector Current (I)

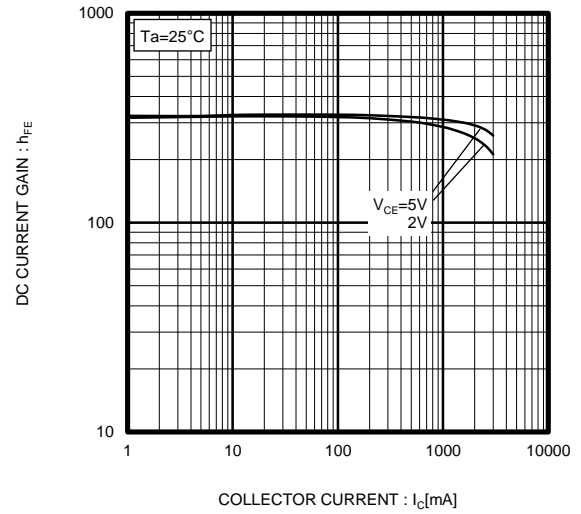


Fig3. DC Current Gain vs. Collector Current (II)

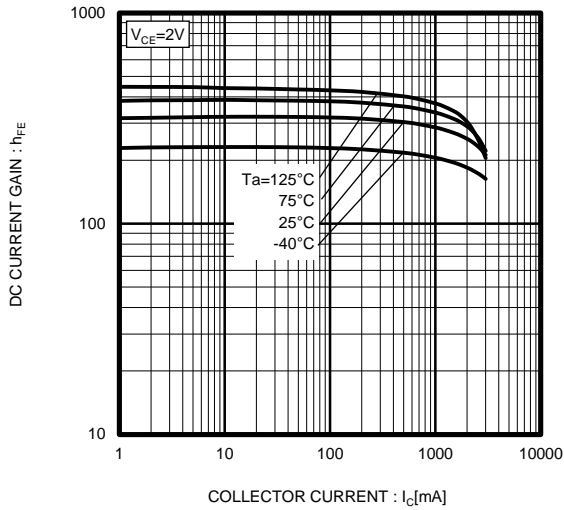


Fig.4 Collector-Emitter Saturation Voltage vs. Collector Current (I)

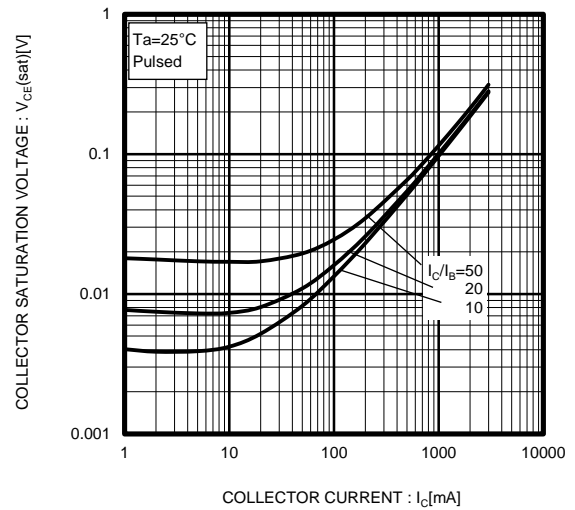


Fig.5 Collector-Emitter Saturation Voltage vs. Collector Current (II)

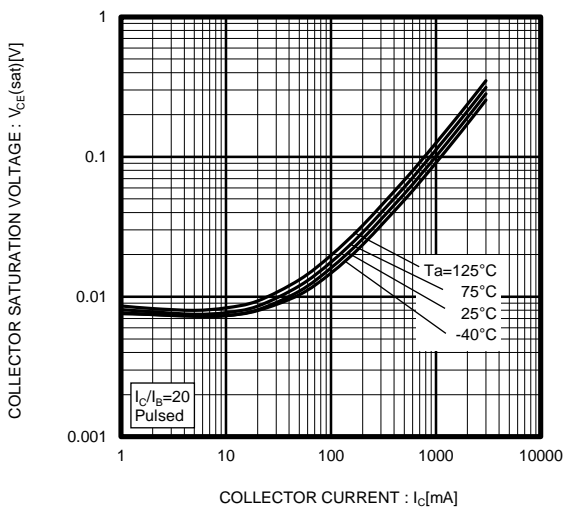


Fig.6 Ground Emitter Propagation Characteristics

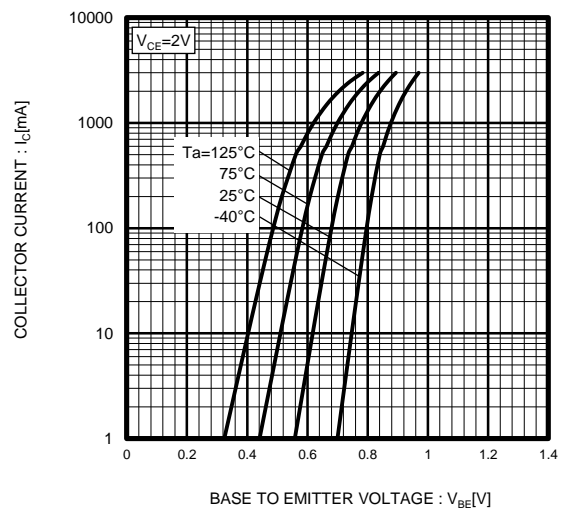


Fig.7 Emitter Input Capacitance vs. Emitter-Base Voltage
Collector Output Capacitance vs. Collector-Base Voltage

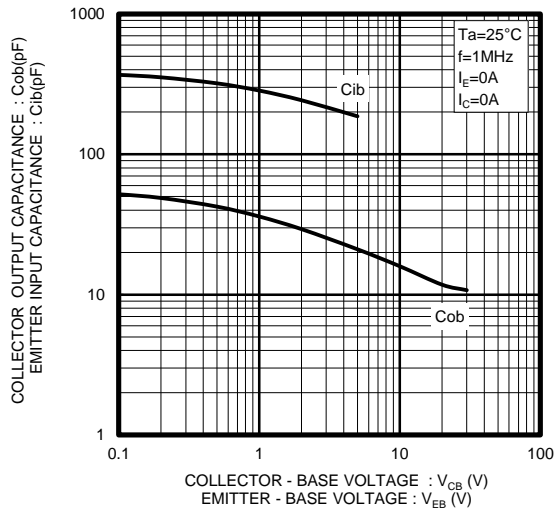


Fig.8 Gain Bandwidth Product vs. Emitter Current

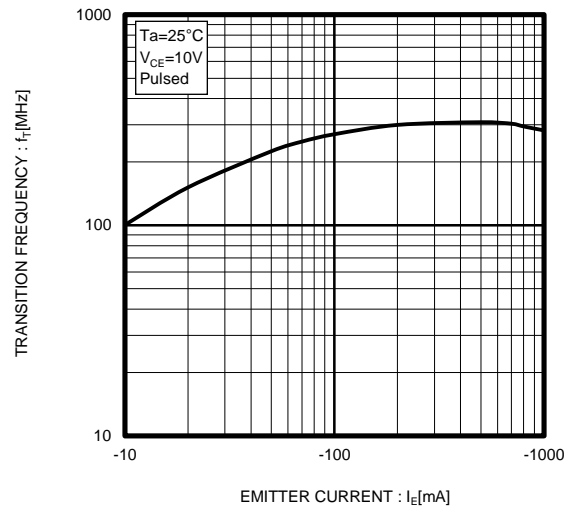
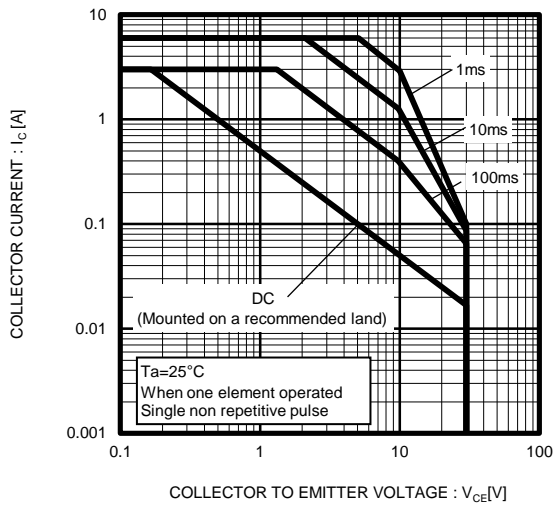
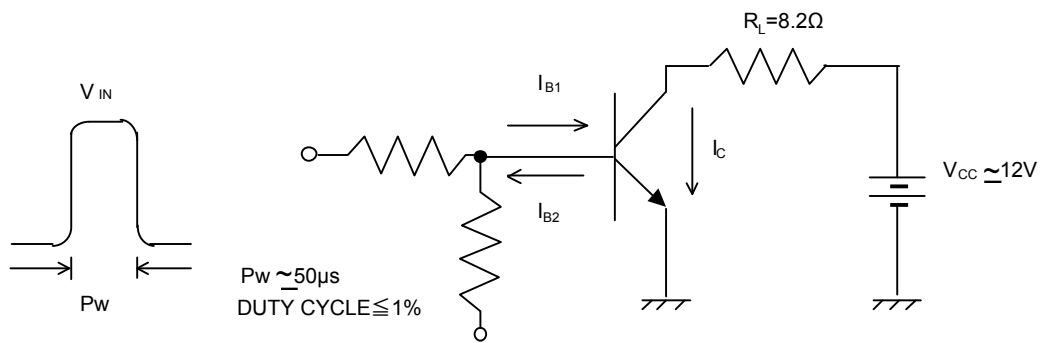


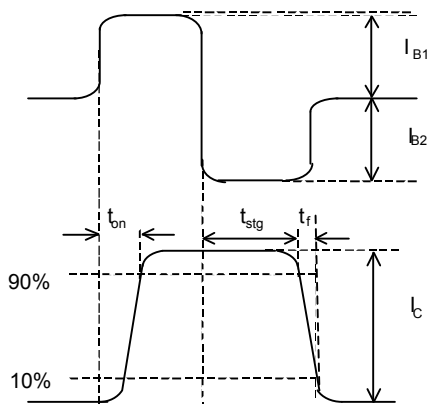
Fig.9 Safe Operating Area



● Switching time test circuit



BASE CURRENT WAVEFORM



COLLECTOR CURRENT WAVEFORM

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JAPAN	USA	EU	CHINA
CLASS III	CLASS III	CLASS II b	CLASS III
CLASS IV		CLASS III	

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 - Use of our Products in proximity to heat-producing components, plastic cords, or other flammable items
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 - Use of the Products in places subject to dew condensation
- The Products are not subject to radiation-proof design.
- Please verify and confirm characteristics of the final or mounted products in using the Products.
- In particular, if a transient load (a large amount of load applied in a short period of time, such as pulse, is applied, confirmation of performance characteristics after on-board mounting is strongly recommended. Avoid applying power exceeding normal rated power; exceeding the power rating under steady-state loading condition may negatively affect product performance and reliability.
- De-rate Power Dissipation depending on ambient temperature. When used in sealed area, confirm that it is the use in the range that does not exceed the maximum junction temperature.
- Confirm that operation temperature is within the specified range described in the product specification.
- ROHM shall not be in any way responsible or liable for failure induced under deviant condition from what is defined in this document.

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- When a highly active halogenous (chlorine, bromine, etc.) flux is used, the residue of flux may negatively affect product performance and reliability.
- In principle, the reflow soldering method must be used on a surface-mount products, the flow soldering method must be used on a through hole mount products. If the flow soldering method is preferred on a surface-mount products, please consult with the ROHM representative in advance.

For details, please refer to ROHM Mounting specification

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This Product is electrostatic sensitive product, which may be damaged due to electrostatic discharge. Please take proper caution in your manufacturing process and storage so that voltage exceeding the Products maximum rating will not be applied to Products. Please take special care under dry condition (e.g. Grounding of human body / equipment / solder iron, isolation from charged objects, setting of Ionizer, friction prevention and temperature / humidity control).

Precaution for Storage / Transportation

1. Product performance and soldered connections may deteriorate if the Products are stored in the places where:
 - [a] the Products are exposed to sea winds or corrosive gases, including Cl₂, H₂S, NH₃, SO₂, and NO₂
 - [b] the temperature or humidity exceeds those recommended by ROHM
 - [c] the Products are exposed to direct sunshine or condensation
 - [d] the Products are exposed to high Electrostatic
2. Even under ROHM recommended storage condition, solderability of products out of recommended storage time period may be degraded. It is strongly recommended to confirm solderability before using Products of which storage time is exceeding the recommended storage time period.
3. Store / transport cartons in the correct direction, which is indicated on a carton with a symbol. Otherwise bent leads may occur due to excessive stress applied when dropping of a carton.
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