Medium power transistor (-30V, -2.0A) 2SA2049

Features

- 1) High speed switching. (Tf: Typ.: 20ns at Ic = -2.0A)
- 2) Low saturation voltage, typically

(Typ.: -250mV at Ic = -1.0A, IB = -100mA)

- 3) Strong discharge power for inductive load and capacitance load.
- 4) Complements the 2SC5731

Applications

Small signal low frequency amplifier High speed switching

Structure

PNP Silicon epitaxial planar transistor

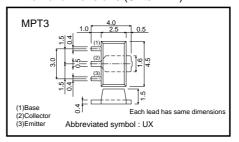
Packaging specifications

	Package	Taping
Type	Code	T100
	Basic ordering unit (pieces)	1000
2SA2049		0

● Absolute maximum ratings (Ta=25°C)

Parameter	Symbol	Limits	Unit
Collector-base voltage	Vсво	-30	V
Collector-emitter voltage	Vceo	-30	V
Emitter-base voltage	Vево	-6	V
Collector current	Ic	-2.0	Α
Collector current	Іср	-4.0	A *1
Dower dissination	D-	500	mW
Power dissipation	Pc	2.0	W *2
Junction temperature	Tj	150	°C
Range of storage temperature	Tstg	-55~+150	°C

●External dimensions (Units : mm)



^{*1} Pw=100ms
*2 Mounted on a 40×40×0.7 (mm) ceramic substrate

●Electrical characteristics (Ta=25°C)

Parameter	Symbol	Min.	Тур.	Max.	Unit	Conditions	
Collector-base breakdown voltage	ВУсво	-30	_	_	V	Ic= -100μA	
Collector-emitter breakdown voltage	BVceo	-30	_	_	V	Ic=-1mA	
Emitter-base breakdown voltage	ВУево	-6	_	_	V	I _E = -100μA	
Collector cut-off current	Ісво	_	_	-1.0	μΑ	V _{CB} = -20V	
Emitter cut-off current	ІЕВО	_	_	-1.0	μΑ	V _{EB} = -4V	
Collector-emitter saturation voltage	VCE (sat)	_	-250	-500	mV	Ic= -1.0A, I _B = -100mA	
DC current gain	hfe	120	_	390	_	VcE= -2V, Ic= -100mA	
Transition frequency	f⊤	_	350	_	MHz	Vc=-10V, I=100mA, f=10MHz	
Collector output capacitance	Cob	_	25	_	pF	Vcb= -10V, Ie=0A, f=1MHz	
Turn-on time	Ton	_	25	_	ns	Ic= -2.0A	
Storage time	Tstg	_	100	_	ns	Ів1= –200mA Ів2=200mA	
Fall time	Tf	_	20	_	ns	Vcc≒ –25V	

●hfe RANK

Q	R
120–270	180-390

•Electrical characteristic curves

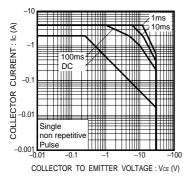


Fig.1 Safe Operating Area

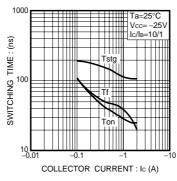


Fig.2 Switching Time

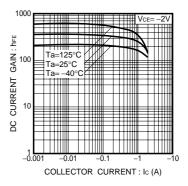


Fig.3 DC Current Gain vs. Collector Current (I)

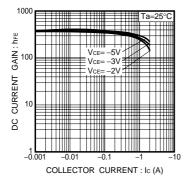


Fig.4 DC Current Gain vs. Collector Current (II)

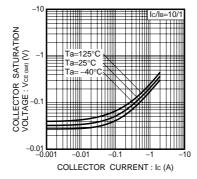


Fig.5 Collector-Emitter Saturation Voltage vs. Collector Current (I)

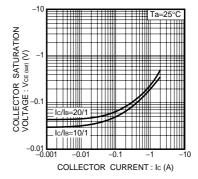


Fig.6 Collector-Emitter Saturation Voltage vs. Collector Current (II)

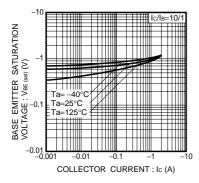


Fig.7 Base-Emitter Saturation Voltage vs.Collecter Current

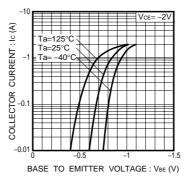


Fig.8 Grounded Emitter
Propagation Characteristics

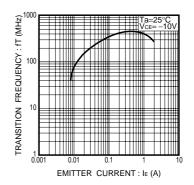


Fig.9 Transition Frequency

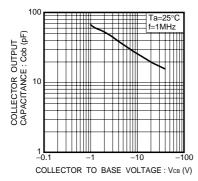
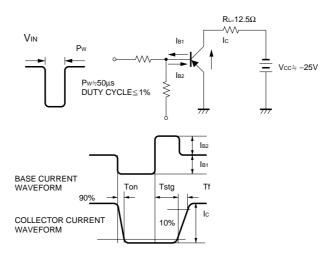


Fig.10 Collector Output Capacitance

•Switching characteristics measurement circuits



Notes

- No technical content pages of this document may be reproduced in any form or transmitted by any
 means without prior permission of ROHM CO.,LTD.
- The contents described herein are subject to change without notice. The specifications for the
 product described in this document are for reference only. Upon actual use, therefore, please request
 that specifications to be separately delivered.
- Application circuit diagrams and circuit constants contained herein are shown as examples of standard
 use and operation. Please pay careful attention to the peripheral conditions when designing circuits
 and deciding upon circuit constants in the set.
- Any data, including, but not limited to application circuit diagrams information, described herein are intended only as illustrations of such devices and not as the specifications for such devices. ROHM CO.,LTD. disclaims any warranty that any use of such devices shall be free from infringement of any third party's intellectual property rights or other proprietary rights, and further, assumes no liability of whatsoever nature in the event of any such infringement, or arising from or connected with or related to the use of such devices.
- Upon the sale of any such devices, other than for buyer's right to use such devices itself, resell or
 otherwise dispose of the same, no express or implied right or license to practice or commercially
 exploit any intellectual property rights or other proprietary rights owned or controlled by
- ROHM CO., LTD. is granted to any such buyer.
- Products listed in this document use silicon as a basic material.
 Products listed in this document are no antiradiation design.

The products listed in this document are designed to be used with ordinary electronic equipment or devices (such as audio visual equipment, office-automation equipment, communications devices, electrical appliances and electronic toys).

Should you intend to use these products with equipment or devices which require an extremely high level of reliability and the malfunction of with would directly endanger human life (such as medical instruments, transportation equipment, aerospace machinery, nuclear-reactor controllers, fuel controllers and other safety devices), please be sure to consult with our sales representative in advance.

About Export Control Order in Japan

Products described herein are the objects of controlled goods in Annex 1 (Item 16) of Export Trade Control Order in Japan.

In case of export from Japan, please confirm if it applies to "objective" criteria or an "informed" (by MITI clause) on the basis of "catch all controls for Non-Proliferation of Weapons of Mass Destruction.

