

Ordering number : ENN7540

NPN Epitaxial Planar Silicon Transistor

15GN01M

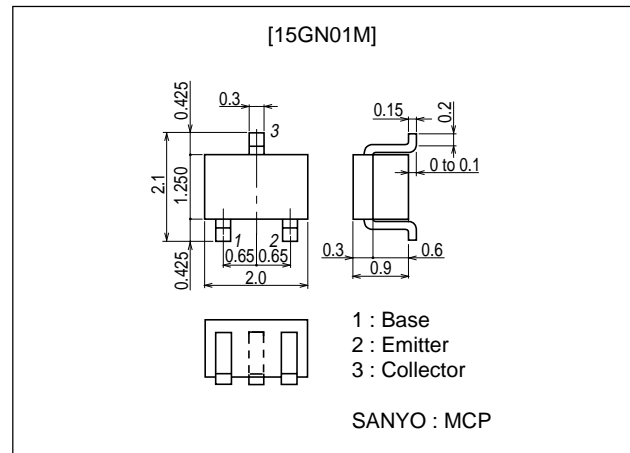
VHF to UHF Band High-frequency Switching, High-frequency General-Purpose Amplifier Applications

Features

- Small ON-resistance [$R_{on}=2\Omega$ ($I_B=3mA$)].
- Small output capacitance [$C_{ob}=1.1pF$ ($V_{CB}=10V$)].

Package Dimensions

unit : mm
2059B



Specifications

Absolute Maximum Ratings at $T_a=25^\circ C$

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V_{CBO}		15	V
Collector-to-Emitter Voltage	V_{CEO}		8	V
Emitter-to-Base Voltage	V_{EBO}		3	V
Collector Current	I_C		50	mA
Collector Dissipation	P_C	Mounted on a ceramic board(250mm ² X0.8mm)	400	mW
Junction Temperature	T_J		150	$^\circ C$
Storage Temperature	T_{stg}		-55 to +150	$^\circ C$

Electrical Characteristics at $T_a=25^\circ C$

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	I_{CBO}	$V_{CB}=10V, I_E=0$			0.5	μA
Emitter Cutoff Current	I_{EBO}	$V_{EB}=2V, I_C=0$			0.5	μA
DC Current Gain	h_{FE}	$V_{CE}=5V, I_C=10mA$	200		400	
Gain-Bandwidth Product	f_T	$V_{CE}=5V, I_C=10mA$	1.0	1.5		GHz
Output Capacitance	C_{ob}	$V_{CB}=10V, f=1MHz$		1.1	1.5	pF
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=20mA, I_B=2mA$		0.06	0.12	V
Output ON resistance	R_{on}	$I_B=3mA, f=10kHz$		2.0		Ω

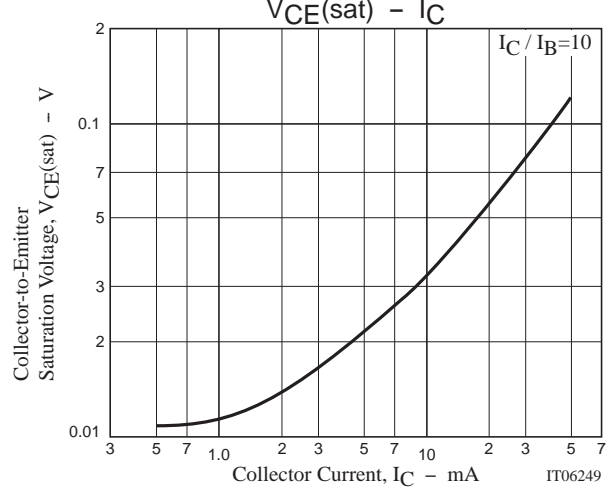
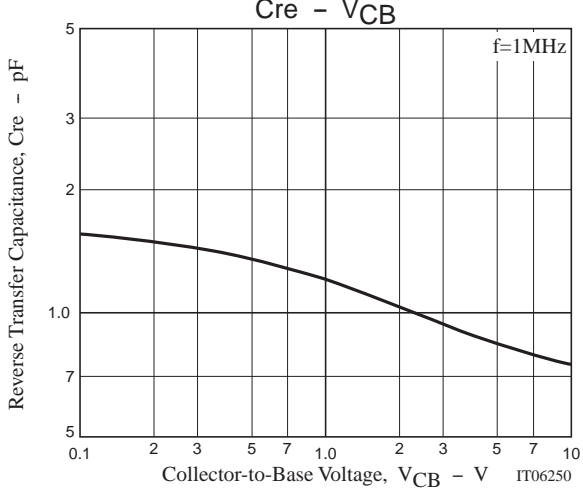
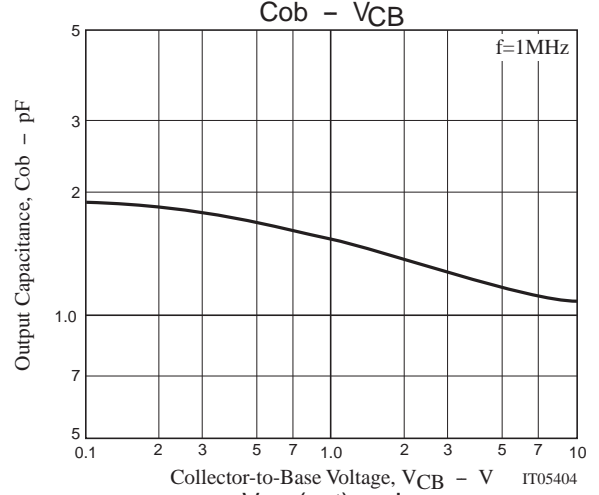
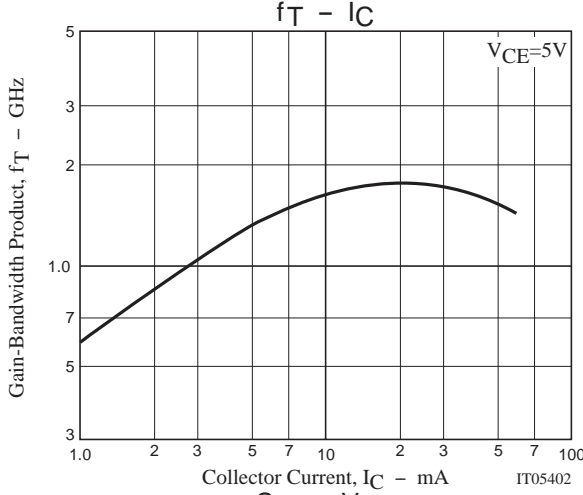
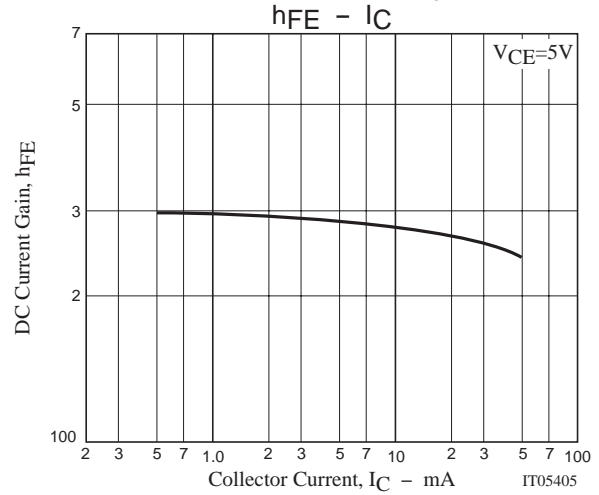
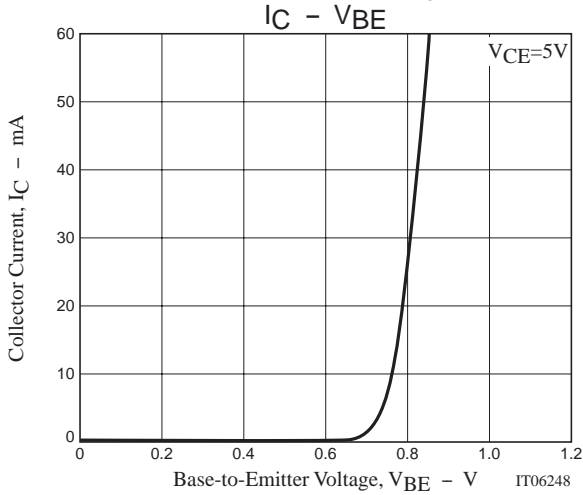
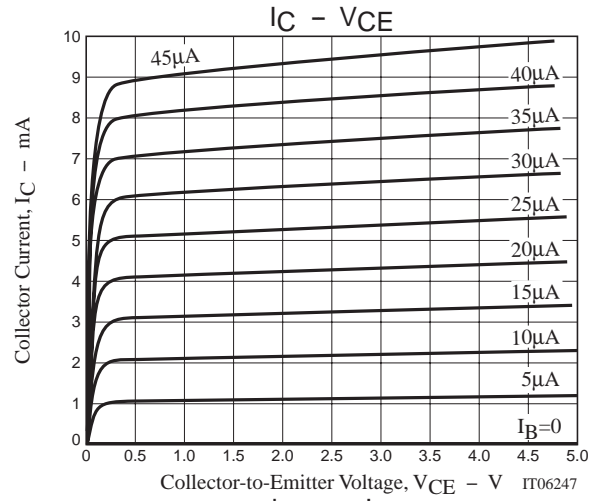
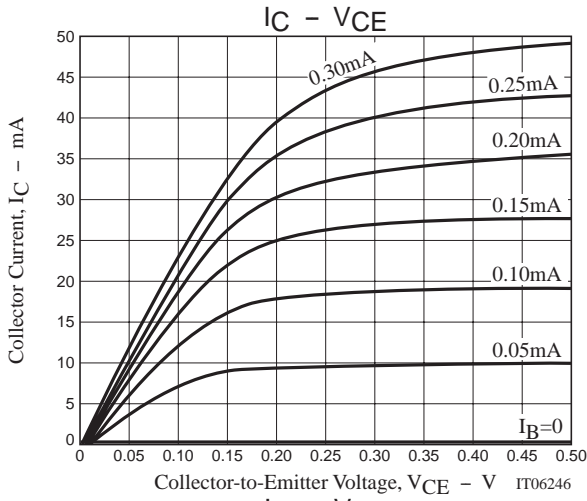
Marking : ZA

- Any and all SANYO products described or contained herein do not have specifications that can handle applications that require extremely high levels of reliability, such as life-support systems, aircraft's control systems, or other applications whose failure can be reasonably expected to result in serious physical and/or material damage. Consult with your SANYO representative nearest you before using any SANYO products described or contained herein in such applications.
- SANYO assumes no responsibility for equipment failures that result from using products at values that exceed, even momentarily, rated values (such as maximum ratings, operating condition ranges, or other parameters) listed in products specifications of any and all SANYO products described or contained herein.

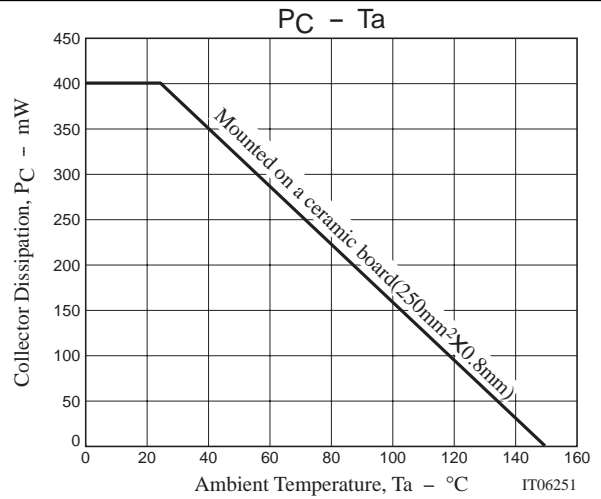
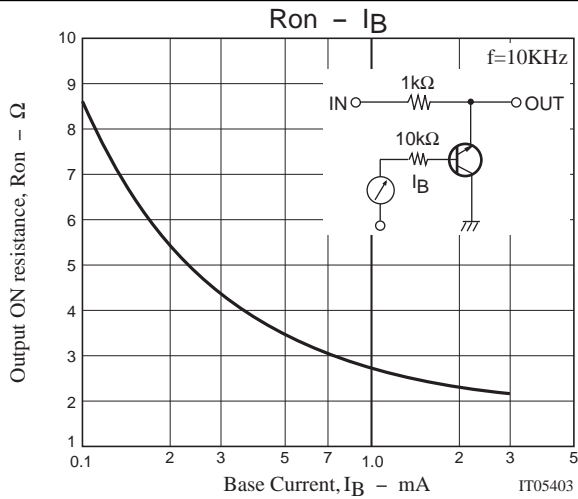
SANYO Electric Co., Ltd. Semiconductor Company
TOKYO OFFICE Tokyo Bldg., 1-10, 1 Chome, Ueno, Taito-ku, TOKYO, 110-8534 JAPAN

71003 TS IM TA-100386 No.7540-1/4

15GN01M



15GN01M



S Parameters (Common emitter)

$V_{CE}=5\text{V}$, $I_C=5\text{mA}$, $Z_O=50\Omega$

Freq(MHz)	$ S_{11} $	$\angle S_{11}$	$ S_{21} $	$\angle S_{21}$	$ S_{12} $	$\angle S_{12}$	$ S_{22} $	$\angle S_{22}$
100	0.662	-25.65	4.631	122.00	0.028	71.36	0.765	-10.50
200	0.582	-36.72	3.028	112.20	0.051	68.80	0.732	-14.15
300	0.529	-47.21	2.353	104.69	0.071	65.59	0.713	-17.91
400	0.487	-56.61	1.955	97.68	0.088	63.00	0.700	-21.58
500	0.459	-65.82	1.691	91.07	0.103	60.43	0.689	-25.23
600	0.429	-74.14	1.496	85.11	0.116	57.83	0.679	-28.81
700	0.409	-82.44	1.353	79.01	0.128	56.22	0.674	-32.38
800	0.388	-89.94	1.239	73.29	0.138	54.76	0.671	-35.89
900	0.374	-96.79	1.149	67.98	0.148	53.44	0.671	-39.34
1000	0.365	-103.28	1.072	63.13	0.156	52.60	0.670	-42.75

$V_{CE}=5\text{V}$, $I_C=10\text{mA}$, $Z_O=50\Omega$

Freq(MHz)	$ S_{11} $	$\angle S_{11}$	$ S_{21} $	$\angle S_{21}$	$ S_{12} $	$\angle S_{12}$	$ S_{22} $	$\angle S_{22}$
100	0.587	-31.65	6.647	118.78	0.026	71.86	0.694	-11.96
200	0.502	-46.40	4.239	108.57	0.046	68.22	0.653	-15.76
300	0.444	-59.47	3.227	100.32	0.064	65.90	0.630	-19.10
400	0.405	-70.80	2.616	93.18	0.079	63.91	0.619	-22.50
500	0.381	-81.80	2.217	86.64	0.093	62.30	0.607	-25.83
600	0.356	-91.29	1.922	80.82	0.105	60.39	0.598	-29.19
700	0.342	-101.15	1.715	74.86	0.115	59.29	0.596	-32.72
800	0.329	-109.42	1.544	69.40	0.125	58.34	0.593	-36.10
900	0.319	-116.99	1.414	64.16	0.135	57.86	0.594	-39.48
1000	0.315	-124.06	1.305	59.41	0.144	57.47	0.593	-42.80

$V_{CE}=5\text{V}$, $I_C=20\text{mA}$, $Z_O=50\Omega$

Freq(MHz)	$ S_{11} $	$\angle S_{11}$	$ S_{21} $	$\angle S_{21}$	$ S_{12} $	$\angle S_{12}$	$ S_{22} $	$\angle S_{22}$
100	0.505	-41.07	8.945	114.82	0.023	71.42	0.611	-13.64
200	0.417	-60.49	5.500	103.75	0.042	69.03	0.568	-16.14
300	0.369	-76.83	4.039	95.20	0.056	67.39	0.548	-18.89
400	0.341	-90.31	3.197	88.11	0.070	66.22	0.539	-21.75
500	0.328	-102.08	2.654	81.71	0.082	65.43	0.533	-24.77
600	0.316	-112.57	2.264	76.38	0.094	64.49	0.528	-27.99
700	0.311	-122.49	1.988	70.80	0.104	64.03	0.530	-31.32
800	0.306	-130.50	1.771	65.75	0.115	63.95	0.530	-34.57
900	0.304	-137.80	1.605	60.92	0.125	64.09	0.534	-37.93
1000	0.306	-144.30	1.470	56.51	0.135	64.16	0.537	-41.24

- Specifications of any and all SANYO products described or contained herein stipulate the performance, characteristics, and functions of the described products in the independent state, and are not guarantees of the performance, characteristics, and functions of the described products as mounted in the customer's products or equipment. To verify symptoms and states that cannot be evaluated in an independent device, the customer should always evaluate and test devices mounted in the customer's products or equipment.
- SANYO Electric Co., Ltd. strives to supply high-quality high-reliability products. However, any and all semiconductor products fail with some probability. It is possible that these probabilistic failures could give rise to accidents or events that could endanger human lives, that could give rise to smoke or fire, or that could cause damage to other property. When designing equipment, adopt safety measures so that these kinds of accidents or events cannot occur. Such measures include but are not limited to protective circuits and error prevention circuits for safe design, redundant design, and structural design.
- In the event that any or all SANYO products(including technical data,services) described or contained herein are controlled under any of applicable local export control laws and regulations, such products must not be exported without obtaining the export license from the authorities concerned in accordance with the above law.
- No part of this publication may be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopying and recording, or any information storage or retrieval system, or otherwise, without the prior written permission of SANYO Electric Co., Ltd.
- Any and all information described or contained herein are subject to change without notice due to product/technology improvement, etc. When designing equipment, refer to the "Delivery Specification" for the SANYO product that you intend to use.
- Information (including circuit diagrams and circuit parameters) herein is for example only ; it is not guaranteed for volume production. SANYO believes information herein is accurate and reliable, but no guarantees are made or implied regarding its use or any infringements of intellectual property rights or other rights of third parties.

This catalog provides information as of July, 2003. Specifications and information herein are subject to change without notice.