

2SC2712GT1G

Medium Frequency NPN Amplifier Transistor

50 V, 200 mA, 80 MHz

The 2SC2712GT1G is designed for low to medium frequency applications such as wireless toys. The targeted design enables improved performance versus the industry standard MMBT3904* in some key parametric specifications.

Features

- Lower $V_{CE(sat)}$ *
- Higher Gain (h_{fe})*
- Higher Breakdown Voltage Rating*
- Moisture Sensitivity Level: 1
- This is a Pb-Free Device

Benefits

- Longer Battery Life
- Improved Performance Through Targeted Design

MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$)

Rating	Symbol	Value	Unit
Collector-Base Voltage	$V_{(BR)CBO}$	60	Vdc
Collector-Emitter Voltage	$V_{(BR)CEO}$	50	Vdc
Emitter-Base Voltage	$V_{(BR)EBO}$	5.0	Vdc
Collector Current - Continuous	I_C	150	mAdc
Collector Current - Peak	$I_{C(P)}$	200	mAdc
Base Current	I_B	30	mAdc

THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Power Dissipation	P_D	200	mW
Junction Temperature	T_J	150	$^\circ\text{C}$
Storage Temperature	T_{stg}	-55 to +150	$^\circ\text{C}$

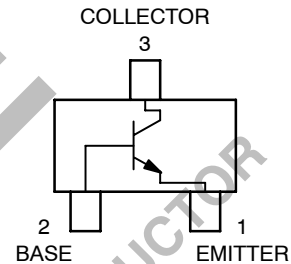
Stresses exceeding Maximum Ratings may damage the device. Maximum Ratings are stress ratings only. Functional operation above the Recommended Operating Conditions is not implied. Extended exposure to stresses above the Recommended Operating Conditions may affect device reliability.

*Specifications compared to MMBT3904.

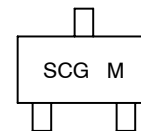


ON Semiconductor®

<http://onsemi.com>



MARKING DIAGRAMS



SCG = Specific Date Code
M = Date Code

ORDERING INFORMATION

Device	Package	Shipping†
2SC2712GT1G	SC-59 (Pb-Free)	3000/Tape & Reel

†For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specifications Brochure, BRD8011/D.

2SC2712GT1G

ELECTRICAL CHARACTERISTICS

(T_A = 25°C unless otherwise noted)

Characteristic	Symbol	Min	Max	Unit
Collector-Emitter Breakdown Voltage (I _C = 2.0 mA, I _B = 0)	V _{(BR)CEO}	50	-	Vdc
Collector-Base Breakdown Voltage (I _C = 10 μA, I _E = 0)	V _{(BR)CBO}	60	-	Vdc
Emitter-Base Breakdown Voltage (I _E = 10 μA, I _C = 0)	V _{(BR)EBO}	5.0	-	Vdc
Collector-Base Cutoff Current (V _{CB} = 60 Vdc, I _E = 0)	I _{CBO}	-	0.1	μA
Emitter Cut-off Current (V _{EB} = 5 V, I _C = 0 V)	I _{EBO}	-	0.1	μA
Collector-Emitter Cutoff Current (V _{CE} = 10 Vdc, I _B = 0) (V _{CE} = 30 Vdc, I _B = 0) (V _{CE} = 30 Vdc, I _B = 0, T _A = 80°C)	I _{CEO}	- - -	0.1 2.0 1.0	μA μA mA
DC Current Gain (Note 1) (V _{CE} = 6.0 Vdc, I _C = 2.0 mA)	h _{FE}	200	400	-
Collector-Emitter Saturation Voltage (I _C = 100 mA, I _B = 10 mA)	V _{CE(sat)}	-	0.25	Vdc

SMALL-SIGNAL CHARACTERISTICS

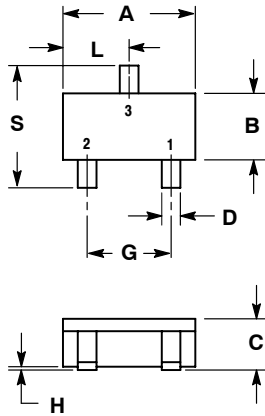
Current-Gain-Bandwidth Product (I _C = 1.0 mA, V _{CE} = 10.0 V, f = 10 MHz)	f _T	80	-	MHz
Output Capacitance (V _{CB} = 10 V, f = 1.0 MHz)	C _{obo}	-	3.5	pF
Noise Figure (I _C = 0.1 mA, V _{CE} = 6.0 Vdc, R _S = 10 kΩ, f = 1.0 kHz, BW = 200 Hz)	NF	-	10	dB

1. Pulse Test: Pulse Width ≤ 300 μs, D.C. ≤ 2%.

2SC2712GT1G

PACKAGE DIMENSIONS

SC-59
CASE 318D-04
ISSUE F

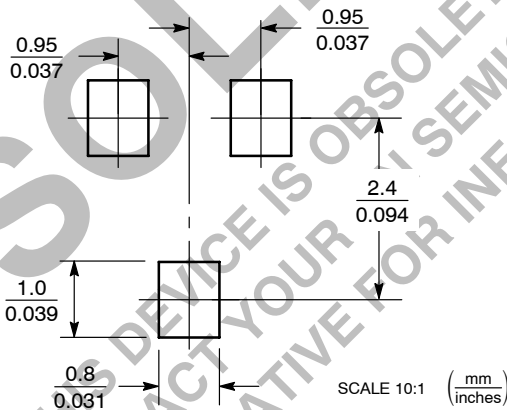


- NOTES:
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: MILLIMETER.

DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	2.70	3.10	0.1063	0.1220
B	1.30	1.70	0.0512	0.0669
C	1.00	1.30	0.0394	0.0511
D	0.35	0.50	0.0138	0.0196
G	1.70	2.10	0.0670	0.0826
H	0.013	0.100	0.0005	0.0040
J	0.09	0.18	0.0034	0.0070
K	0.20	0.60	0.0079	0.0236
L	1.25	1.65	0.0493	0.0649
S	2.50	3.00	0.0985	0.1181

- STYLE 1:
PIN 1. EMITTER
2. BASE
3. COLLECTOR

SOLDERING FOOTPRINT*



*For additional information on our Pb-Free strategy and soldering details, please download the ON Semiconductor Soldering and Mounting Techniques Reference Manual, SOLDERRM/D.

ON Semiconductor and are registered trademarks of Semiconductor Components Industries, LLC (SCILLC). SCILLC reserves the right to make changes without further notice to any products herein. SCILLC makes no warranty, representation or guarantee regarding the suitability of its products for any particular purpose, nor does SCILLC assume any liability arising out of the application or use of any product or circuit, and specifically disclaims any and all liability, including without limitation special, consequential or incidental damages. "Typical" parameters which may be provided in SCILLC data sheets and/or specifications can and do vary in different applications and actual performance may vary over time. All operating parameters, including "Typicals" must be validated for each customer application by customer's technical experts. SCILLC does not convey any license under its patent rights nor the rights of others. SCILLC products are not designed, intended, or authorized for use as components in systems intended for surgical implant into the body, or other applications intended to support or sustain life, or for any other application in which the failure of the SCILLC product could create a situation where personal injury or death may occur. Should Buyer purchase or use SCILLC products for any such unintended or unauthorized application, Buyer shall indemnify and hold SCILLC and its officers, employees, subsidiaries, affiliates, and distributors harmless against all claims, costs, damages, and expenses, and reasonable attorney fees arising out of, directly or indirectly, any claim of personal injury or death associated with such unintended or unauthorized use, even if such claim alleges that SCILLC was negligent regarding the design or manufacture of the part. SCILLC is an Equal Opportunity/Affirmative Action Employer. This literature is subject to all applicable copyright laws and is not for resale in any manner.

PUBLICATION ORDERING INFORMATION

LITERATURE FULFILLMENT:
Literature Distribution Center for ON Semiconductor
P.O. Box 5163, Denver, Colorado 80217 USA
Phone: 303-675-2175 or 800-344-3860 Toll Free USA/Canada
Fax: 303-675-2176 or 800-344-3867 Toll Free USA/Canada
Email: orderlit@onsemi.com

N. American Technical Support: 800-282-9855 Toll Free
USA/Canada
Europe, Middle East and Africa Technical Support:
Phone: 421 33 790 2910
Japan Customer Focus Center
Phone: 81-3-5773-3850

ON Semiconductor Website: www.onsemi.com
Order Literature: <http://www.onsemi.com/orderlit>

For additional information, please contact your local Sales Representative

2SC2712GT1/D