General Purpose Transistors

PNP Silicon

Features

- AEC-Q101 Qualified and PPAP Capable
- S Prefix for Automotive and Other Applications Requiring Unique Site and Control Change Requirements
- These Devices are Pb–Free, Halogen Free/BFR Free and are RoHS Compliant

MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Collector – Emitter Voltage	V _{CEO}	-45	V
Collector – Base Voltage	V _{CBO}	-50	V
Emitter – Base Voltage	V _{EBO}	-5.0	V
Collector Current – Continuous	Ι _C	-500	mAdc

THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Total Device Dissipation FR-5 Board, (Note 1) T _A = 25°C	P _D	460	mW
Thermal Resistance, Junction-to-Ambient	$R_{ hetaJA}$	272	°C/W
Junction and Storage Temperature	T _J , T _{stg}	-55 to +150	°C

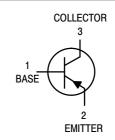
Stresses exceeding Maximum Ratings may damage the device. Maximum Ratings are stress ratings only. Functional operation above the Recommended Operating Conditions is not implied. Extended exposure to stresses above the Recommended Operating Conditions may affect device reliability.

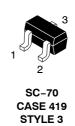
1. FR-4 Board, 1 oz. Cu, 100 mm².



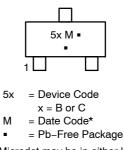
ON Semiconductor®

http://onsemi.com





MARKING DIAGRAM



(Note: Microdot may be in either location)

*Date Code orientation and/or overbar may vary depending upon manufacturing location.

ORDERING INFORMATION

See detailed ordering and shipping information in the package dimensions section on page 2 of this data sheet.

ELECTRICAL CHARACTERISTICS ($T_A = 25^{\circ}C$ unless otherwise noted.)

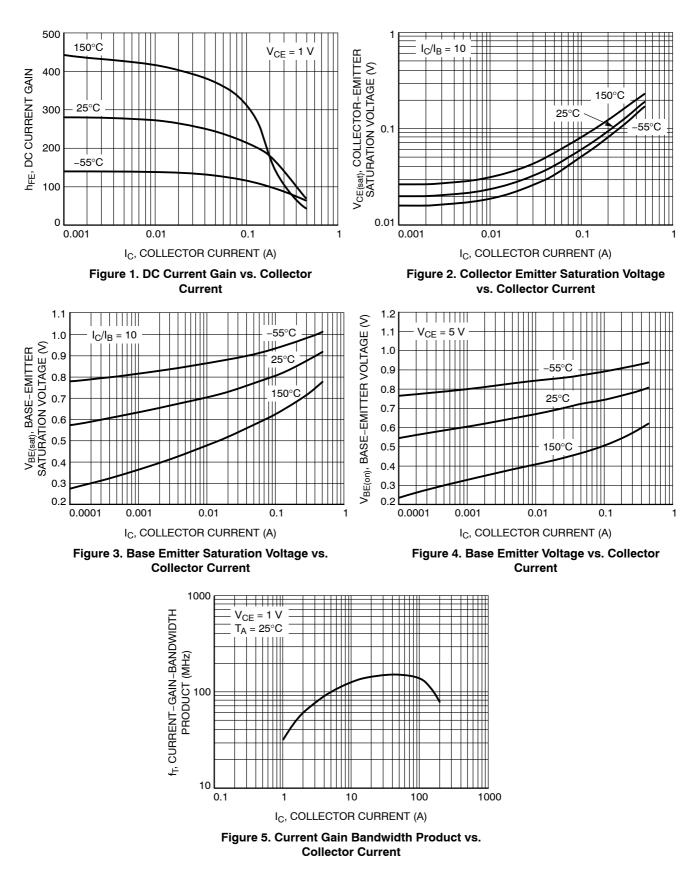
Characteristic	Symbol	Min	Тур	Max	Unit	
OFF CHARACTERISTICS		•				
Collector – Emitter Breakdown Voltage $(I_C = -10 \text{ mA})$		V _{(BR)CEO}	-45	-	-	V
Collector – Emitter Breakdown Voltage ($V_{EB} = 0$, $I_C = -10 \ \mu A$)		V _{(BR)CES}	-50	-	-	V
Emitter – Base Breakdown Voltage ($I_E = -1.0 \ \mu A$)		V _{(BR)EBO}	-5.0	-	-	V
Collector Cutoff Current $(V_{CB} = -20 \text{ V})$ $(V_{CB} = -20 \text{ V}, \text{ T}_{J} = 150^{\circ}\text{C})$		I _{CBO}		-	-100 -5.0	nA μA
ON CHARACTERISTICS						
DC Current Gain ($I_C = -100 \text{ mA}, V_{CE} = -1.0 \text{ V}$) ($I_C = -500 \text{ mA}, V_{CE} = -1.0 \text{ V}$)	BC807-25, SBC807-25 BC807-40, SBC807-40	h _{FE}	160 250 40	- - -	400 600 -	-
Collector – Emitter Saturation Voltage ($I_C = -500$ mA, $I_B = -50$ mA)		V _{CE(sat)}	-	-	-0.7	V
Base – Emitter On Voltage $(I_C = -500 \text{ mA}, I_B = -1.0 \text{ V})$		V _{BE(on)}	-	-	-1.2	V
SMALL-SIGNAL CHARACTERISTICS		•				
Current – Gain – Bandwidth Product ($I_C = -10$ mA, $V_{CE} = -5.0$ Vdc, f = 100 MHz)		f _T	100	-	-	MHz
Output Capacitance (V _{CB} = -10 V, f = 1.0 MHz)		C _{obo}	-	10	-	pF

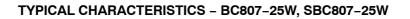
ORDERING INFORMATION

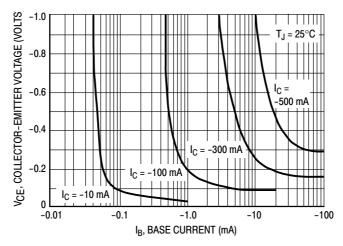
Device	Specific Marking	Package	Shipping [†]	
BC807-25WT1G			2000 / Tana & Daal	
SBC807-25T1G	5B	SC–70 (Pb–Free)	3000 / Tape & Reel	
BC807-25WT3G		(10,000 / Tape & Reel	
BC807-40WT1G		SC–70 (Pb–Free)	3000 / Tape & Reel	
SBC807-40WT1G	5C			
BC807-40WT3G		10,0		

+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.

TYPICAL CHARACTERISTICS - BC807-25W, SBC807-25W









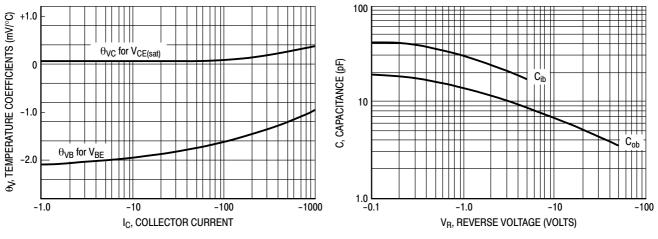
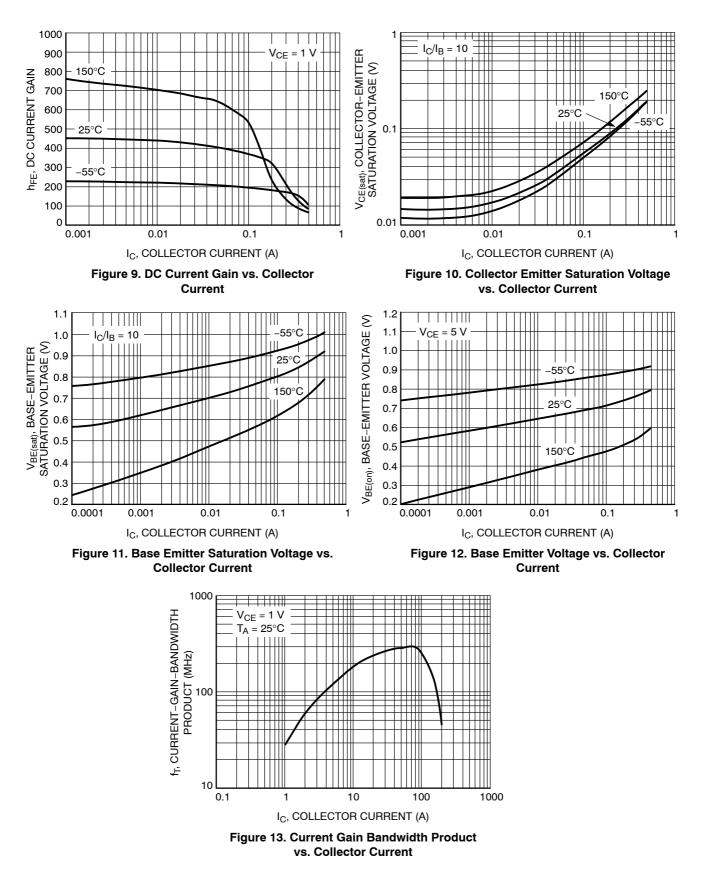
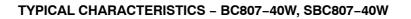


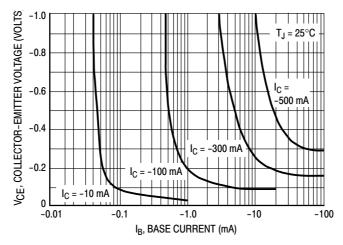
Figure 7. Temperature Coefficients

Figure 8. Capacitances

TYPICAL CHARACTERISTICS - BC807-40W, SBC807-40W









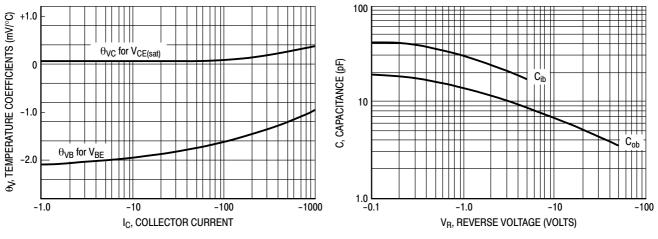


Figure 15. Temperature Coefficients

Figure 16. Capacitances

TYPICAL CHARACTERISTICS - BC807-25W, SBC807-25W, BC807-40W, SBC807-40W

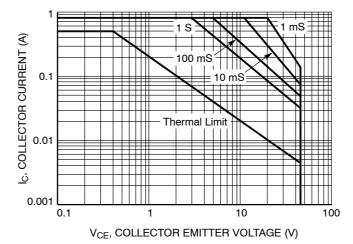


Figure 17. Safe Operating Area

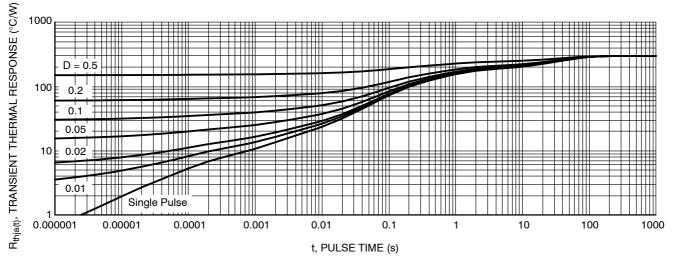
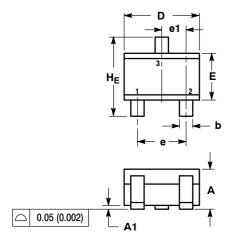
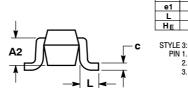


Figure 18. Thermal Response

PACKAGE DIMENSIONS

SC-70 (SOT-323) CASE 419-04 ISSUE N



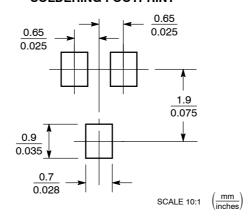


NOTES: 1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982. 2. CONTROLLING DIMENSION: INCH

PIN 1. BASE 2. EMITTER 3. COLLECTOR

	MILLIMETERS			INCHES		
DIM	MIN	NOM	MAX	MIN	NOM	MAX
Α	0.80	0.90	1.00	0.032	0.035	0.040
A1	0.00	0.05	0.10	0.000	0.002	0.004
A2	0.70 REF			0.028 REF		
b	0.30	0.35	0.40	0.012	0.014	0.016
С	0.10	0.18	0.25	0.004	0.007	0.010
D	1.80	2.10	2.20	0.071	0.083	0.087
Е	1.15	1.24	1.35	0.045	0.049	0.053
e	1.20	1.30	1.40	0.047	0.051	0.055
e1	0.65 BSC			0.026 BSC		
L	0.20	0.38	0.56	0.008	0.015	0.022
HE	2.00	2.10	2.40	0.079	0.083	0.095





*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 IIIII 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 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, 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 agsociated with such unintended or unauthorized use payers and reasonable attorney fees arising out of, directly or indirectly, any claim of personal injury or death agsociated with such unintended or unauthorized use ports and set and performance of the part. SCILLC is an Equal Opportunit//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: 81-3-5817-1050 ON Semiconductor Website: www.onsemi.com

Order Literature: http://www.onsemi.com/orderlit

For additional information, please contact your local Sales Representative