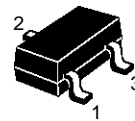


SMALL SIGNAL NPN DARLINGTON TRANSISTORS

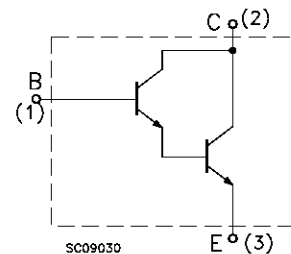
Type	Marking
BCV27	FF
BCV47	FG

- SILICON EPITAXIAL PLANAR NPN DARLINGTON TRANSISTORS
- MINIATURE PLASTIC PACKAGE FOR APPLICATION IN SURFACE MOUNTING CIRCUITS
- GENERAL PURPOSE DARLINGTON HIGH GAIN, HIGH INPUT IMPEDANCE
- PNP COMPLEMENTS ARE BCV26 AND BCV46



SOT-23

INTERNAL SCHEMATIC DIAGRAM



ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value		Unit
		BCV27	BCV47	
V_{CBO}	Collector-Base Voltage ($I_E = 0$)	40	80	V
V_{CEO}	Collector-Emitter Voltage ($I_B = 0$)	30	60	V
V_{EBO}	Emitter-Base Voltage ($I_C = 0$)	10		V
I_C	Collector Current	0.5		A
I_{CM}	Collector Peak Current	0.8		A
P_{tot}	Total Dissipation at $T_C = 25^\circ\text{C}$	350		mW
T_{stg}	Storage Temperature	-65 to 150		$^\circ\text{C}$
T_j	Max. Operating Junction Temperature	150		$^\circ\text{C}$

BCV27/BCV47

THERMAL DATA

$R_{thj-amb}$ •	Thermal Resistance Junction-Ambient	Max	358	$^{\circ}\text{C/W}$
R_{thj-SR} •	Thermal Resistance Junction-Substrate	Max	260	$^{\circ}\text{C/W}$

• Mounted on a ceramic substrate area = 0.7 mm x 2.5 cm²

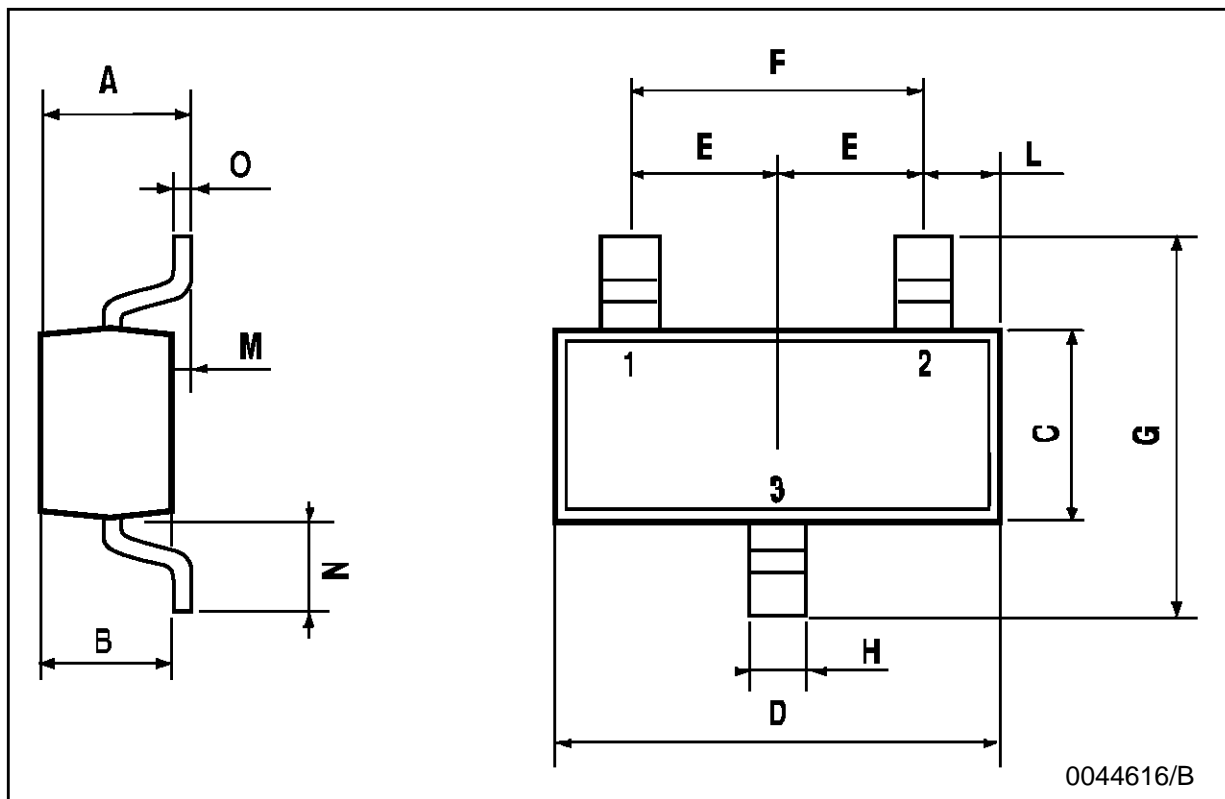
ELECTRICAL CHARACTERISTICS ($T_{case} = 25^{\circ}\text{C}$ unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I_{CBO}	Collector Cut-off Current ($I_E = 0$)	$V_{CB} = 30\text{ V}$ for BCV27 $V_{CB} = 60\text{ V}$ for BCV47			100 100	nA nA
$V_{(BR)CBO}^*$	Collector-Emitter Breakdown Voltage ($I_E = 0$)	$I_C = 10\ \mu\text{A}$ for BCV27 for BCV47	40 80			V V
$V_{(BR)CEO}^*$	Collector-Emitter Breakdown Voltage ($I_B = 0$)	$I_C = 2\text{ mA}$ for BCV27 for BCV47	30 60			V V
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage ($I_C = 0$)	$I_C = 100\text{ nA}$	10			V
$V_{CE(sat)}^*$	Collector-Emitter Saturation Voltage	$I_C = 100\text{ mA}$ $I_B = 0.1\text{ mA}$			1	V
h_{FE}^*	DC Current Gain	for BCV27 $I_C = 100\ \mu\text{A}$ $V_{CE} = 5\text{ V}$ $I_C = 10\text{ mA}$ $V_{CE} = 5\text{ V}$ $I_C = 100\text{ mA}$ $V_{CE} = 5\text{ V}$ $I_C = 500\text{ mA}$ $V_{CE} = 5\text{ V}$ for BCV47 $I_C = 100\ \mu\text{A}$ $V_{CE} = 5\text{ V}$ $I_C = 10\text{ mA}$ $V_{CE} = 5\text{ V}$ $I_C = 100\text{ mA}$ $V_{CE} = 5\text{ V}$ $I_C = 500\text{ mA}$ $V_{CE} = 5\text{ V}$	4000 10000 20000 4000			
f_T	Transition Frequency	$I_C = 10\text{ mA}$ $V_{CE} = 5\text{ V}$ $f = 100\text{ MHz}$		200		MHz
C_{CB}	Collector Base Capacitance	$I_E = 0$ $V_{CE} = 10\text{ V}$		3.5		pF

* Pulsed: Pulse duration = 300 μs , duty cycle $\leq 2\%$

SOT-23 MECHANICAL DATA

DIM.	mm			mils		
	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.
A	0.85		1.1	33.4		43.3
B	0.65		0.95	25.6		37.4
C	1.20		1.4	47.2		55.1
D	2.80		3	110.2		118
E	0.95		1.05	37.4		41.3
F	1.9		2.05	74.8		80.7
G	2.1		2.5	82.6		98.4
H	0.38		0.48	14.9		18.8
L	0.3		0.6	11.8		23.6
M	0		0.1	0		3.9
N	0.3		0.65	11.8		25.6
O	0.09		0.17	3.5		6.7



Information furnished is believed to be accurate and reliable. However, SGS-THOMSON Microelectronics assumes no responsibility for the consequences of use of such information nor for any infringement of patents or other rights of third parties which may result from its use. No license is granted by implication or otherwise under any patent or patent rights of SGS-THOMSON Microelectronics. Specifications mentioned in this publication are subject to change without notice. This publication supersedes and replaces all information previously supplied. SGS-THOMSON Microelectronics products are not authorized for use as critical components in life support devices or systems without express written approval of SGS-THOMSON Microelectronics.

© 1995 SGS-THOMSON Microelectronics - Printed in Italy - All Rights Reserved

SGS-THOMSON Microelectronics GROUP OF COMPANIES

Australia - Brazil - Canada - China - France - Germany - Hong Kong - Italy - Japan - Korea - Malaysia - Malta - Morocco - The Netherlands - Singapore - Spain - Sweden - Switzerland - Taiwan - Thailand - United Kingdom - U.S.A