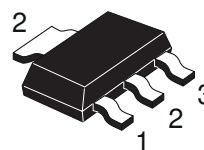


MEDIUM POWER AMPLIFIER

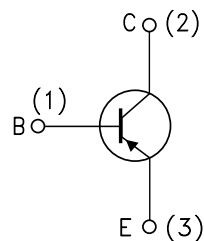
ADVANCE DATA

- SILICON EPITAXIAL PLANAR PNP TRANSISTORS
- MINIATURE PLASTIC PACKAGE FOR APPLICATION IN SURFACE MOUNTING CIRCUITS
- GENERAL PURPOSE MAINLY INTENDED FOR USE IN MEDIUM POWER INDUSTRIAL APPLICATION AND FOR AUDIO AMPLIFIER OUTPUT STAGE
- NPN COMPLEMENTS ARE BCP55 AND BCP56 RESPECTIVELY



SOT-223

INTERNAL SCHEMATIC DIAGRAM



SC08810

ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value		Unit
		BCP52	BCP53	
V_{CBO}	Collector-Base Voltage ($I_E = 0$)	-60	-100	V
V_{CEO}	Collector-Emitter Voltage ($I_B = 0$)	-60	-80	V
V_{CER}	Collector-Emitter Voltage ($R_{BE} = 1K\Omega$)	-60	-100	V
V_{EBO}	Emitter-Base Voltage ($I_C = 0$)	-5		V
I_C	Collector Current	-1		A
I_{CM}	Collector Peak Current ($t_p < 5$ ms)	-1.5		A
I_B	Base Current	-0.1		A
I_{BM}	Base Peak Current ($t_p <$ ms)	-0.2		A
P_{tot}	Total Dissipation at $T_c = 25^\circ C$	2		W
T_{stg}	Storage Temperature	-65 to 150		$^\circ C$
T_j	Max. Operating Junction Temperature	150		$^\circ C$

THERMAL DATA

$R_{thj-amb}$ •	Thermal Resistance Junction-Ambient	Max	62.5	$^{\circ}\text{C/W}$
$R_{thj-tab}$ •	Thermal Resistance Junction-Collector Tab	Max	8	$^{\circ}\text{C/W}$

• Mounted on a ceramic substrate area = 30 x 35 x 0.7 mm

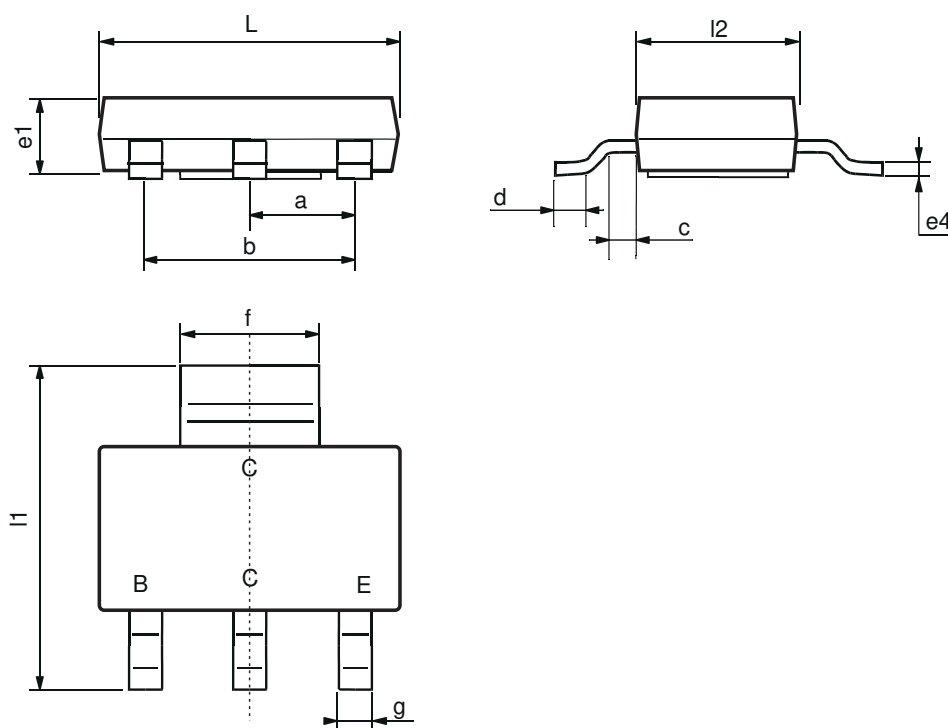
ELECTRICAL CHARACTERISTICS ($T_{case} = 25^{\circ}\text{C}$ unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I_{CBO}	Collector Cut-off Current ($I_E = 0$)	$V_{CB} = -30\text{ V}$ $V_{CB} = -30\text{ V}$ $T_j = 125^{\circ}\text{C}$			-100 -10	nA μA
$V_{(BR)CBO}$	Collector-Base Breakdown Voltage ($I_E = 0$)	$I_C = -100\text{ }\mu\text{A}$ for BCP52 for BCP53	-60 -100			V V
$V_{(BR)CEO}^*$	Collector-Emitter Breakdown Voltage ($I_B = 0$)	$I_C = -20\text{ mA}$ for BCP52 for BCP53	-60 -80			V V
$V_{(BR)CER}$	Collector-Emitter Breakdown Voltage ($R_{BE} = 1\text{ K}\Omega$)	$I_C = -100\text{ }\mu\text{A}$ for BCP52 for BCP53	-60 -100			V V
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage ($I_C = 0$)	$I_C = -10\text{ }\mu\text{A}$	-5			V
$V_{CE(sat)}^*$	Collector-Emitter Saturation Voltage	$I_C = -500\text{ mA}$ $I_B = -50\text{ mA}$			-0.5	V
$V_{BE(on)}^*$	Base-Emitter On Voltage	$I_C = -500\text{ mA}$ $V_{CE} = -2\text{ V}$			-1	V
h_{FE}^*	DC Current Gain	$I_C = -5\text{ mA}$ $V_{CE} = -2\text{ V}$ $I_C = -150\text{ mA}$ $V_{CE} = -2\text{ V}$ for Gr. 6 $I_C = -150\text{ mA}$ $V_{CE} = -2\text{ V}$ for Gr. 10 $I_C = -150\text{ mA}$ $V_{CE} = -2\text{ V}$ for Gr. 16 $I_C = -500\text{ mA}$ $V_{CE} = -2\text{ V}$	25 40 63 100 25		100 160 250	
f_T	Transition Frequency	$I_C = -10\text{ mA}$ $V_{CE} = -5\text{ V}$ $f = 35\text{ MHz}$		50		MHz

* Pulsed: Pulse duration = 300 μs , duty cycle $\leq 1.5\%$

SOT-223 MECHANICAL DATA

DIM.	mm			mils		
	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.
a	2.27	2.3	2.33	89.4	90.6	91.7
b	4.57	4.6	4.63	179.9	181.1	182.3
c	0.2	0.4	0.6	7.9	15.7	23.6
d	0.63	0.65	0.67	24.8	25.6	26.4
e1	1.5	1.6	1.7	59.1	63	66.9
e4			0.32			12.6
f	2.9	3	3.1	114.2	118.1	122.1
g	0.67	0.7	0.73	26.4	27.6	28.7
l1	6.7	7	7.3	263.8	275.6	287.4
l2	3.5	3.5	3.7	137.8	137.8	145.7
L	6.3	6.5	6.7	248	255.9	263.8



P008B

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 results 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.

© 1997 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