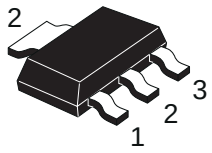
SGS-THOMSON MICROELECTRONICS

BCP52/53

MEDIUM POWER AMPLIFIER

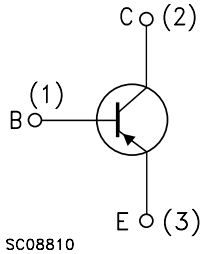
ADVANCE DATA

- 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



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} = 1KΩ)	-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 °C	2		W
T_{stg}	Storage Temperature	-65 to 150		°C
T_j	Max. Operating Junction Temperature	150		°C

THERMAL DATA

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

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

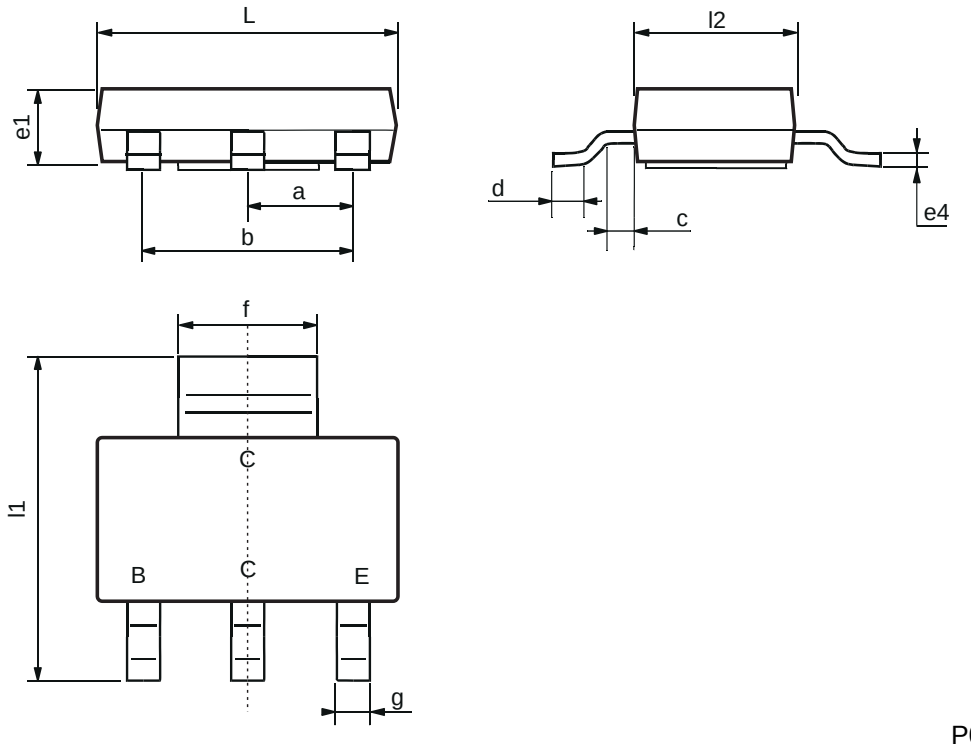
ELECTRICAL CHARACTERISTICS (T_{case} = 25 ^oC unless otherwise specified)

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

∗ Pulsed: Pulse duration = 300 µs, duty cycle ≤ 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



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