SGS-THOMSON MICROELECTRONICS

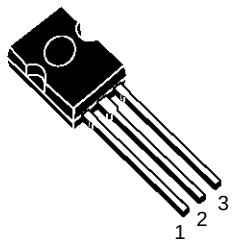
SGS122

COMPLEMENTARY SILICON POWER DARLINGTON TRANSISTORS

- SGS-THOMSON PREFERRED SALESTYPES

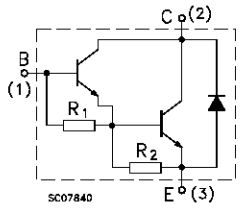
DESCRIPTION

The SGS122 is silicon epitaxial-base NPN power transistors in monolithic Darlington configuration Jedec SOT-82 plastic package, intented for use in power linear and switching applications.



SOT-82

INTERNAL SCHEMATIC DIAGRAM



R_1 Typ. = 5 KΩ R_2 Typ. = 150 Ω

ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value	Unit
V_{CBO}	Collector-Base Voltage (I_E = 0)	100	V
V_{CEO}	Collector-Emitter Voltage (I_B = 0)	100	V
V_{EBO}	Emitter-Base Voltage (I_C = 0)	5	V
I_C	Collector Current	5	A
I_{CM}	Collector Peak Current	8	A
I_B	Base Current	0.1	A
P_{tot}	Total Dissipation at $T_{case} \leq 25\ ^oC$ $T_{amb} \leq 25\ ^oC$	65 2	W W
T_{stg}	Storage Temperature	-65 to 150	^oC
T_j	Max. Operating Junction Temperature	150	^oC

* For PNP types voltage and current values are negative.

THERMAL DATA

$R_{thj\text{-}case}$	Thermal Resistance Junction-case	Max	1.92	$^oC/W$

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

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I_{CEO}	Collector Cut-off Current (I_B = 0)	V_{CE} = half rated V_{CEO}			0.5	mA
I_{CBO}	Collector Cut-off Current (I_B = 0)	V_{CB} = half rated V_{CBO}			0.2	mA
I_{EBO}	Emitter Cut-off Current (I_C = 0)	V_{EB} = 5 V			2	mA
$V_{CEO(sus)}$*	Collector-Emitter Sustaining Voltage (I_B = 0)	I_C = 30 mA	100			V
$V_{CE(sat)}$*	Collector-Emitter Saturation Voltage	I_C = 3 A I_B = 12 mA I_C = 5 A I_B = 20 mA			2 4	V V
V_{BE}*	Base-Emitter Voltage	I_C = 3 A V_{CE} = 3 V			2.5	V
h_{FE}*	DC Current Gain	I_C = 0.5 A V_{CE} = 3 V I_C = 3 A V_{CE} = 3 V	1000 1000			

* Pulsed: pulse duration = 300 μs, duty cycle ≤ 2%
* For PNP types voltage and current values are negative.

SOT-82 MECHANICAL DATA

DIM.	mm			inch		
	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.
A	7.4		7.8	0.291		0.307
B	10.5		11.3	0.413		0.445
b	0.7		0.9	0.028		0.035
b1	0.49		0.75	0.019		0.030
C	2.4		2.7	0.04		0.106
c1		1.2			0.047	
D		15.7			0.618	
e		2.2			0.087	
e3		4.4			0.173	
F		3.8			0.150	
H			2.54		0.100