



SGS-THOMSON
MICROELECTRONICS

TIP/SGS130-131-132
TIP/SGS135-136-137

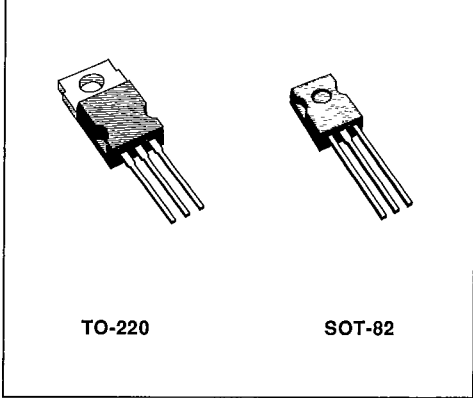
SGS-THOMSON

30E D

POWER DARLINGTONS

DESCRIPTION

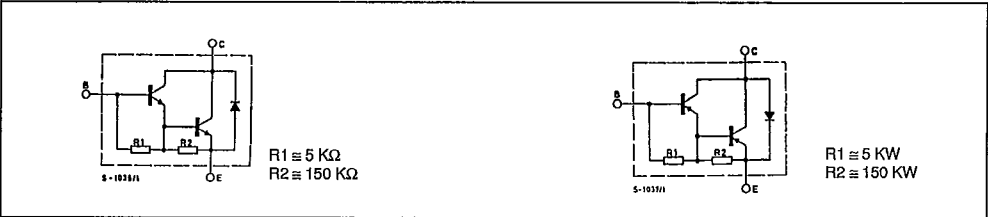
The TIP130, TIP131, TIP132 and SGS130, SGS131, SGS132 are silicon epitaxial-base NPN transistors in monolithic Darlington configuration respectively in TO-220 and SOT-82 plastic package. They are intended for use in linear and switching applications. The complementary PNP types are the TIP135, TIP136 TIP137 and SGS135, SGS136, SGS137 respectively.



TO-220

SOT-82

INTERNAL SCHEMATIC DIAGRAMS



ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	NPN NPN PNP PNP	Value			Unit
			TIP130 SGS130	TIP131 SGS131	TIP132 SGS132	
V _{CB0}	Collector-base Voltage (I _E = 0)		60	80	100	V
V _{CE0}	Collector-emitter Voltage (I _B = 0)		60	80	100	V
V _{EB0}	Emitter-base Voltage (I _C = 0)		5			V
I _C	Collector Current		8			A
I _{CM}	Collector Peak Current		12			A
I _B	Base Current		0.3			A
P _{tot}	Total Power Dissipation at T _{case} ≤ 25 °C T _{amb} ≤ 25 °C		70			W
T _{stg}	Storage Temperature		- 65 to 150			°C
T _j	Junction Temperature		150			°C

For PNP types voltage and current values are negative.

Thermal Data

$R_{th\ j-case}$	Thermal Resistance Junction-case	Max	1.78	$^{\circ}C/W$
$R_{th\ j-amb}$	Thermal Resistance Junction-ambient	Max	63.5	$^{\circ}C/W$

T-33-29

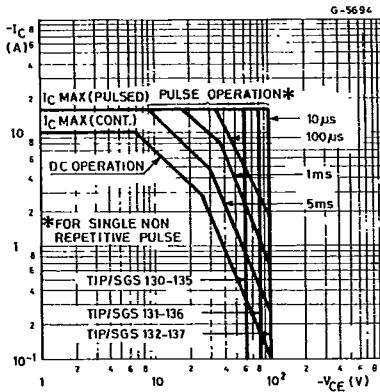
ELECTRICAL CHARACTERISTICS ($T_{case} = 25^{\circ}C$ unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I_{CEO}	Collector Cutoff Current ($I_B = 0$)	$V_{CE} = \text{Half Rated } V_{CEO}$			0.5	mA
I_{CBO}	Collector Cutoff Current ($I_E = 0$)	$V_{CB} = \text{Rated } V_{CBO}$			0.2	mA
I_{EBO}	Emitter Cutoff Current ($I_C = 0$)	$V_{EB} = 5\text{ V}$			5	mA
$V_{CEO(sus)}^*$	Collector-emitter Sustaining Voltage ($I_B = 0$)	$I_C = 30\text{ mA}$ for TIP/SGS130 and TIP/SGS135 for TIP/SGS131 and TIP/SGS136 for TIP/SGS132 and TIP/SGS137	60 80 100			V V V
$V_{CE(sat)}^*$	Collector-emitter Saturation Voltage	$I_C = 4\text{ A}$ $I_B = 16\text{ mA}$ $I_C = 6\text{ A}$ $I_B = 30\text{ mA}$			2 3	V V
V_{BE}^*	Base-emitter Voltage	$I_C = 4\text{ A}$ $V_{CE} = 4\text{ V}$			2.5	V
h_{FE}^*	DC current Gain	$I_C = 1\text{ A}$ $V_{CE} = 4\text{ V}$ $I_C = 4\text{ A}$ $V_{CE} = 4\text{ V}$	500 1000			15000

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

Safe Operating Areas.

Power Derating Chart.



For the others characteristics see TIP100/105 series.

