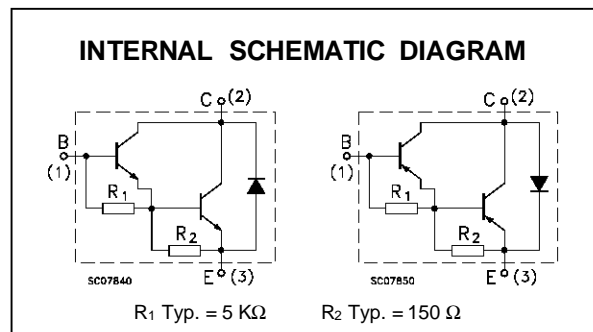
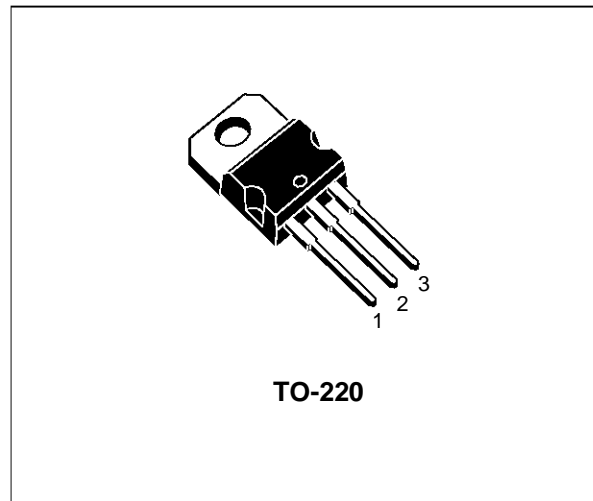


**COMPLEMENTARY SILICON POWER  
DARLINGTON TRANSISTORS**

- TIP131, TIP132, TIP135 AND TIP137 ARE SGS-THOMSON PREFERRED SALESTYPES

**DESCRIPTION**

The TIP130, TIP131 and TIP132 are silicon epitaxial-base NPN power transistors in monolithic Darlington configuration, mounted in Jedec TO-220 plastic package. They are intended for use in power linear and switching applications. The complementary PNP types are TIP135, TIP136 and TIP137.



**ABSOLUTE MAXIMUM RATINGS**

Symbol	Parameter	Value				Unit
		NPN	TIP130	TIP131	TIP132	
		PNP	TIP135	TIP136	TIP137	
V <sub>CBO</sub>	Collector-Base Voltage (I <sub>E</sub> = 0)		60	80	100	V
V <sub>CEO</sub>	Collector-Emitter Voltage (I <sub>B</sub> = 0)		60	80	100	V
V <sub>EBO</sub>	Emitter-Base Voltage (I <sub>C</sub> = 0)			5		V
I <sub>C</sub>	Collector Current			8		A
I <sub>CM</sub>	Collector Peak Current			12		A
I <sub>B</sub>	Base Current			0.3		A
P <sub>tot</sub>	Total Dissipation at T <sub>case</sub> ≤ 25 °C T <sub>amb</sub> ≤ 25 °C			70 2		W W
T <sub>stg</sub>	Storage Temperature			-65 to 150		°C
T <sub>j</sub>	Max. Operating Junction Temperature			150		°C

\* For PNP types voltage and current values are negative.

## TIP130/TIP131/TIP132/TIP135/TIP136/TIP137

### THERMAL DATA

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

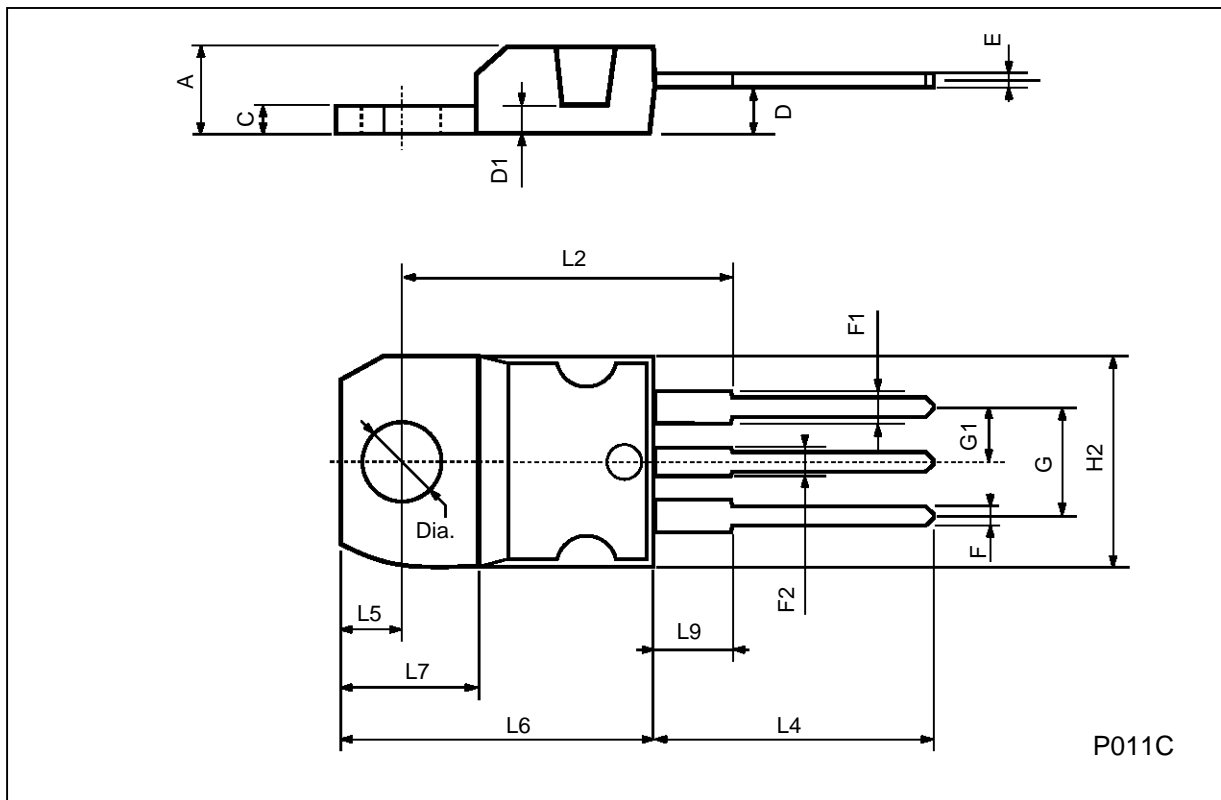
### ELECTRICAL CHARACTERISTICS ( $T_{case} = 25^{\circ}C$ unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
$I_{CEO}$	Collector Cut-off Current ( $I_B = 0$ )	$V_{CE} = \text{Half Rates } V_{CEO}$			0.5	mA
$I_{CBO}$	Collector Cut-off Current ( $I_B = 0$ )	$V_{CB} = \text{Half Rates } V_{CBO}$			0.2	mA
$I_{EBO}$	Emitter Cut-off Current ( $I_C = 0$ )	$V_{EB} = 5 V$			5	mA
$V_{CEO(sus)}^*$	Collector-Emitter Sustaining Voltage ( $I_B = 0$ )	$I_C = 30 \text{ mA}$ for <b>TIP130/135</b> for <b>TIP131/136</b> for <b>TIP132/137</b>	60 80 100			V V V
$V_{CE(sat)}^*$	Collector-Emitter Saturation Voltage	$I_C = 4 A$ $I_B = 16 \text{ mA}$ $I_C = 6 A$ $I_B = 30 \text{ mA}$			2 4	V V
$V_{BE(on)}^*$	Base-Emitter Voltage	$I_C = 4 A$ $V_{CE} = 4 V$			2.5	V
$h_{FE}^*$	DC Current Gain	$I_C = 1 A$ $V_{CE} = 4 V$ $I_C = 4 A$ $V_{CE} = 4 V$	500 1000		15000	

\* For PNP types voltage and current values are negative.

**TO-220 MECHANICAL DATA**

DIM.	mm			inch		
	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.
A	4.40		4.60	0.173		0.181
C	1.23		1.32	0.048		0.051
D	2.40		2.72	0.094		0.107
D1		1.27			0.050	
E	0.49		0.70	0.019		0.027
F	0.61		0.88	0.024		0.034
F1	1.14		1.70	0.044		0.067
F2	1.14		1.70	0.044		0.067
G	4.95		5.15	0.194		0.203
G1	2.4		2.7	0.094		0.106
H2	10.0		10.40	0.393		0.409
L2		16.4			0.645	
L4	13.0		14.0	0.511		0.551
L5	2.65		2.95	0.104		0.116
L6	15.25		15.75	0.600		0.620
L7	6.2		6.6	0.244		0.260
L9	3.5		3.93	0.137		0.154
DIA.	3.75		3.85	0.147		0.151



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