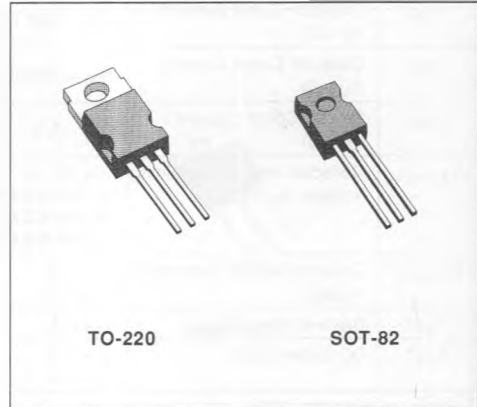


POWER DARLINGTONS

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.



INTERNAL SCHEMATIC DIAGRAMS



ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	NPN NPN PNP PNP	Value			Unit
			TIP130 SGS130	TIP131 SGS131	TIP132 SGS132	
V_{CBO}	Collector-base Voltage ($I_E = 0$)		60	80	100	V
V_{CEO}	Collector-emitter Voltage ($I_B = 0$)		60	80	100	V
V_{EBO}	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 $T_{case} \leq 25^\circ C$ $T_{amb} \leq 25^\circ C$			70		W
T_{stg}	Storage Temperature			-65 to 150		$^\circ C$
T_j	Junction Temperature			150		$^\circ C$

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	$^{\circ}C/W$

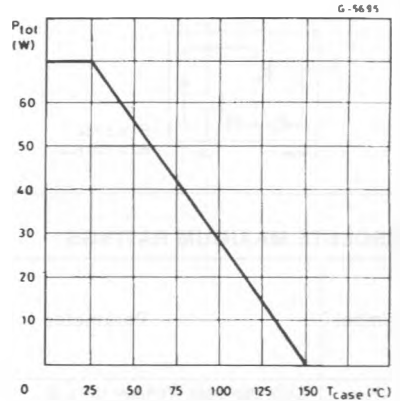
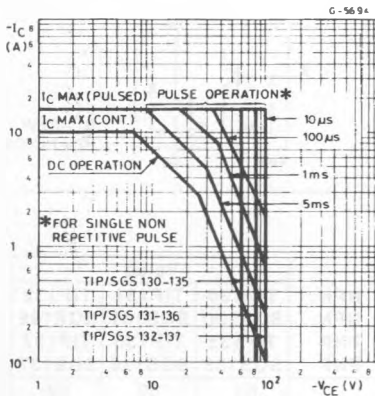
ELECTRICAL CHARACTERISTICS ($T_{case} = 25^{\circ}C$ unless otherwise specified)

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 ($I_C = 0$)	$V_{EB} = 5 V$			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	$I_C = 4 A$ $I_B = 16 \text{ mA}$ $I_C = 6 A$ $I_B = 30 \text{ mA}$			2 3	V V
V_{BE}^*	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	

* 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