

TIP105

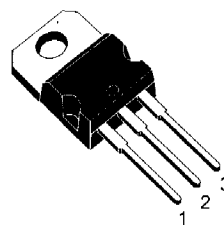
PNP SILICON POWER DARLINGTON TRANSISTOR

APPLICATIONS

- LINEAR AND SWITCHING INDUSTRIAL EQUIPMENT
- AUDIO POWER AMPLIFIER
- GENERAL POWER SWITCHING
- DC-AC CONVERTER
- EASY DRIVER FOR LOW VOLTAGE DC MOTOR

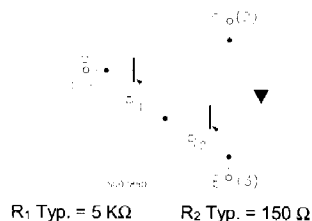
DESCRIPTION

The TIP105 is a silicon Epitaxial-Base PNP transistor in monolithic Darlington configuration mounted in TO-220 plastic package intended for use in power linear and switching applications. The preferred complementary NPN type is the TIP102.



TO-220

INTERNAL SCHEMATIC DIAGRAM



ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value	Unit
V_{CBO}	Collector-Base Voltage ($I_E = 0$)	-60	V
V_{CEO}	Collector-Emitter Voltage ($I_B = 0$)	-60	V
V_{EBO}	Emitter-Base Voltage ($I_C = 0$)	-5	V
I_C	Collector Current	-8	A
I_{CM}	Collector Peak Current	-15	A
I_B	Base Current	-1	A
P_{tot}	Total Dissipation at $T_{case} \leq 25^\circ C$ $T_{amb} \leq 25^\circ C$	80 2	W W
T_{stg}	Storage Temperature	-65 to 150	$^\circ C$
T_j	Max. Operating Junction Temperature	150	$^\circ C$

NJ Semi-Conductors reserves the right to change test conditions, parameter limits and package dimensions without notice. Information furnished by NJ Semi-Conductors is believed to be both accurate and reliable at the time of going to press. However, NJ Semi-Conductors assumes no responsibility for any errors or omissions discovered in its use. NJ Semi-Conductors encourages customers to verify that datasheets are current before placing orders.

TIP105

THERMAL DATA

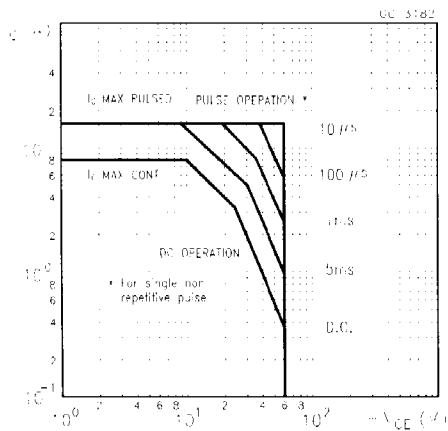
$R_{thj-case}$	Thermal Resistance Junction-case	Max	1.56	$^{\circ}C/W$
$R_{thj-amb}$	Thermal Resistance Junction-ambient	Max	62.5	$^{\circ}C/W$

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

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit	
I_{CEO}	Collector Cut-off Current ($I_B = 0$)	$V_{CE} = -30 V$			-50	μA	
I_{CBO}	Collector Cut-off Current ($I_E = 0$)	$V_{CE} = -60 V$			-50	μA	
I_{EBO}	Emitter Cut-off Current ($I_C = 0$)	$V_{EB} = -5 V$			-8	mA	
$V_{CEO(sus)}^*$	Collector-Emitter Sustaining Voltage ($I_B = 0$)	$I_C = -30 mA$	-60			V	
$V_{CE(sat)}^*$	Collector-Emitter Saturation Voltage	$I_C = -3 A$ $I_C = -8 A$			-2 -2.5	V V	
V_{BE}^*	Base-Emitter Voltage	$I_C = -8 A$ $V_{CE} = -4 V$			-2.8	V	
h_{FE}^*	DC Current Gain	$I_C = -3 A$ $I_C = -8 A$ $I_C = -3 A$ Group R Group O Group Y	$V_{CE} = -4 V$ $V_{CE} = -4 V$ $V_{CE} = -4 V$	2000 200		18000 5000 9000 18000	
V_F^*	Forward Voltage of Commutation Diode ($I_B = 0$)	$I_F = -I_C = 10 A$			-2.8	V	

The product is pre-selected in DC current gain (Group R, Group O and Group Y). STMicroelectronics reserves the right to ship either groups according to production availability. Please contact your nearest STMicroelectronics sales office for delivery details.

Safe Operating Area



DC Current Gain

