



ELECTRONICS, INC.
 44 FARRAND STREET
 BLOOMFIELD, NJ 07003
 (973) 748-5089
<http://www.nteinc.com>

TIP150, TIP151, TIP152 Silicon NPN Power Darlington Transistor TO-220 Type Package

Description:

The TIP150, TIP151, and TIP152 are silicon NPN power Darlington transistors in a TO-220 type package designed for use in automotive ignition, switching, and motor control applications.

Features:

- Collector-Emmitter Sustaining Voltage:
 - $V_{CEO(sus)} = 300V \text{ min (TIP150)}$
 - $V_{CEO(sus)} = 350V \text{ min (TIP151)}$
 - $V_{CEO(sus)} = 400V \text{ min (TIP152)}$
- Collector-Emmitter Saturation Voltage: $V_{CE(sat)} = 2V \text{ max at } I_C = 5A$
- Reverse-Base SOA: 300V to 400V at 7A

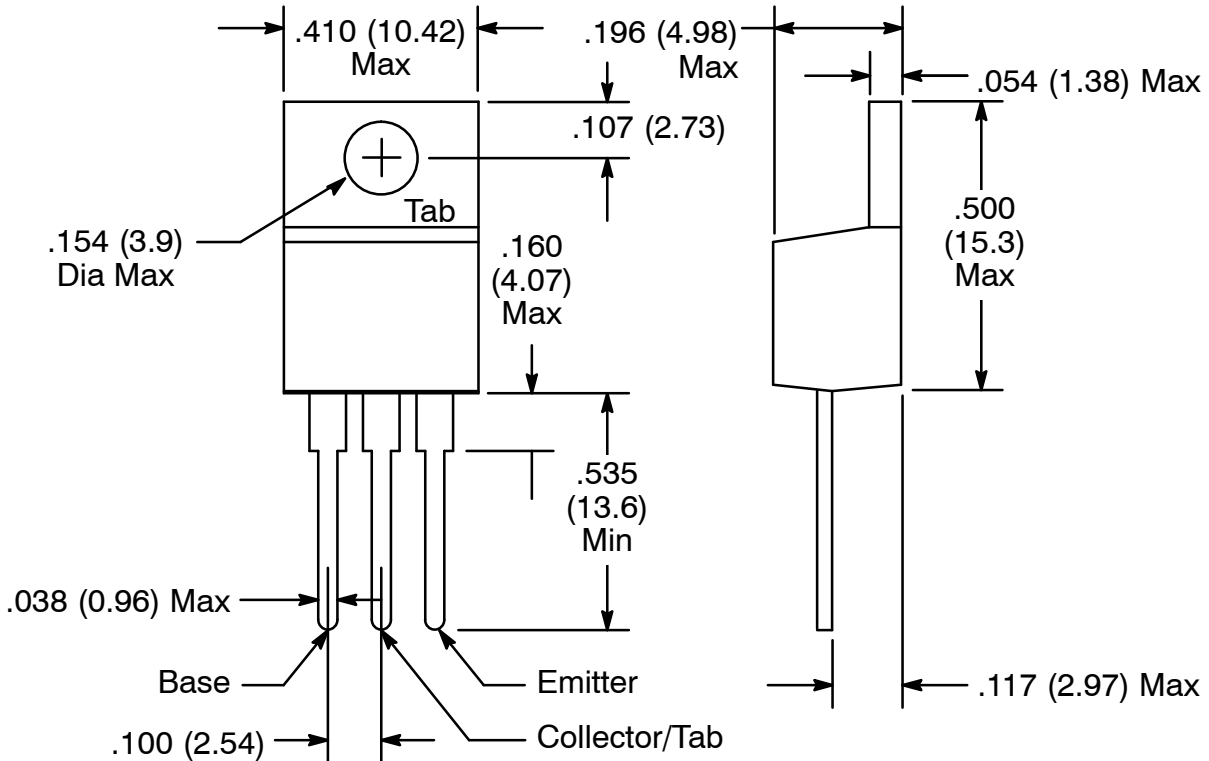
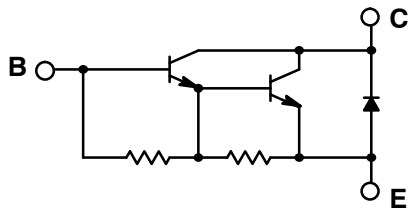
Absolute Maximum Ratings:

Collector-Emmitter Voltage, V_{CEO}	
TIP150	300V
TIP151	350V
TIP152	400V
Collector-Base Voltage, V_{CBO}	
TIP150	300V
TIP151	350V
TIP152	400V
Emitter-Base Voltage, V_{EBO}	
8V	
Collector Current, I_C	
Continuous	7A
Peak	10A
Base Current, I_B	
1.5A	
Total Power Dissipation ($T_C = +25^\circ C$), P_D	
80W	
Derate above $25^\circ C$	
0.64W/ $^\circ C$	
Operating Junction Temperature Range, T_J	
-65° to $+150^\circ C$	
Storage Temperature Range, T_{stg}	
-65° to $+150^\circ C$	
Thermal Resistance, Junction-to-Case, R_{thJC}	
1.56 $^\circ C/W$	

Electrical Characteristics: ($T_C = +25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
OFF Characteristics						
Collector–Emitter Breakdown Voltage TIP150	$V_{(BR)CEO}$	$I_C = 10\text{mA}, I_B = 0, \text{Note 1}$	300	–	–	V
TIP151			350	–	–	V
TIP152			400	–	–	V
Collector–Base Breakdown Voltage TIP150	$V_{(BR)CBO}$	$I_C = 1\text{mA}, I_B = 0, \text{Note 1}$	300	–	–	V
TIP151			350	–	–	V
TIP152			400	–	–	V
Collector Cutoff Current TIP150	I_{CEO}	$V_{CE} = 300\text{V}, I_B = 0$	–	–	250	μA
TIP151		$V_{CE} = 350\text{V}, I_B = 0$	–	–	250	μA
TIP152		$V_{CE} = 400\text{V}, I_B = 0$	–	–	250	μA
Emitter Cutoff Current	I_{EBO}	$V_{EB} = 8\text{V}, I_C = 0$	–	–	15	mA
ON Characteristics (Note 1)						
DC Current Gain	h_{FE}	$V_{CE} = 5\text{V}, I_C = 2.5\text{A}$	150	–	–	
		$V_{CE} = 5\text{V}, I_C = 5.0\text{A}$	50	–	–	
		$V_{CE} = 5\text{V}, I_C = 7.0\text{A}$	15	–	–	
Collector–Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = 1\text{A}, I_B = 10\text{mA}$	–	–	1.5	V
		$I_C = 2\text{A}, I_B = 100\text{mA}$	–	–	1.5	V
		$I_C = 5\text{A}, I_B = 250\text{mA}$	–	–	2.0	V
Base–Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C = 2\text{A}, I_B = 100\text{mA}$	–	–	2.2	V
		$I_C = 5\text{A}, I_B = 250\text{mA}$	–	–	2.3	V
Diode Forward Voltage	V_F	$I_F = 7\text{A}$	–	–	3.5	V
Dynamic Characteristics						
Small–Signal Current Gain	h_{fe}	$V_{CE} = 5\text{V}, I_C = 500\text{mA}, f = 1\text{kHz}$	200	–	–	
Output Capacitance	C_{ob}	$V_{CB} = 10\text{V}, I_E = 0, f = 1\text{MHz}$	–	–	150	pF
Switching Characteristics						
Delay Time	t_d	$V_{CC} = 250\text{V}, I_C = 5\text{A},$ $I_{B1} = -I_{B2} = 250\text{mA}, t_p = 20\mu\text{s},$ Duty Cycle $\leq 2\%$	–	30	–	ns
Rise Time	t_r		–	180	–	ns
Storage Time	t_s		–	3.5	–	ns
Fall Time	t_f		–	1.6	–	ns

Note 1. Pulse test: Pulse Width = $300\mu\text{s}$, Duty Cycle $\leq 2.0\%$.



X-ON Electronics

Largest Supplier of Electrical and Electronic Components

Click to view similar products for [Darlington Transistors](#) category:

Click to view products by [NTE manufacturer](#):

Other Similar products are found below :

[281287X](#) [SMMBT6427LT1G](#) [2N7371](#) [BDV64B](#) [JANTXV2N6287](#) [028710A](#) [SMMBTA64LT1G](#) [2N6350](#) [2SB1214-TL-E](#)
[SMMBTA14LT1G](#) [SBSP52T1G](#) [NJVMJD117T4G](#) [Jantx2N6058](#) [2N6353](#) [LB1205-L-E](#) [500-00005](#) [2N6053](#) [NJVMJD112G](#) [Jan2N6350](#)
[Jantx2N6352](#) [Jantx2N6350](#) [BULN2803LVS](#) [ULN2001N](#) [2SB1383](#) [2SB1560](#) [2SB852KT146B](#) [TIP112TU](#) [TIP122TU](#) [BCV27](#) [MMBTA13-](#)
[TP](#) [MMBTA14-TP](#) [MMSTA28T146](#) [BSP50H6327XTSA1](#) [KSH122TF](#) [NTE2557](#) [NJVNJD35N04T4G](#) [TIP115](#) [MPSA29-D26Z](#) [MJD127T4](#)
[FJB102TM](#) [BCV26E6327HTSA1](#) [BCV46E6327HTSA1](#) [BCV47E6327HTSA1](#) [BSP61H6327XTSA1](#) [BU941ZPFI](#) [2SB1316TL](#) [2SD1980TL](#)
[NTE2350](#) [NTE245](#) [NTE246](#)