



TIP145, TIP146, TIP147

NPN SILICON DARLINGTONS, SILICON POWER TRANSISTORS

They are silicon epitaxial-base PNP transistors in monolithic Darlington configuration and are mounted in SOT93 plastic package.

They are intended for use in power linear and switching application.
The complementary are TIP140, TIP141, TIP142.

Compliance to RoHS.

ABSOLUTE MAXIMUM RATINGS

Symbol	Ratings		Value	Unit
V_{CEO}	Collector-Emitter Voltage	TIP145	-60	V
		TIP146	-80	
		TIP147	-100	
V_{CBO}	Collector-Base Voltage	TIP145	-60	V
		TIP146	-80	
		TIP147	-100	
V_{EBO}	Emitter-Base Voltage	TIP145	-5.0	V
		TIP146		
		TIP147		
I_C	Collector Current	I_C	TIP145	A
			TIP146	
			TIP147	
		I_{CM}	TIP145	
			TIP146	
			TIP147	
I_B	Base Current	TIP145	-0.5	A
		TIP146		
		TIP147		
P_T	Power Dissipation	@ $T_{mb} = 25^\circ C$	TIP145	Watts
			TIP146	
			TIP147	
T_J	Junction Temperature	TIP145	150	$^\circ C$
		TIP146		
		TIP147		
T_S	Storage Temperature	TIP145	-65 to +150	
		TIP146		
		TIP147		



TIP145, TIP146, TIP147

THERMAL CHARACTERISTICS

Symbol	Ratings	Value	Unit
$R_{thJ\text{-}mb}$	Thermal Resistance Junction - Case	TIP145 TIP146 TIP147	1 °C / W

ELECTRICAL CHARACTERISTICS

TC=25°C unless otherwise noted

Symbol	Ratings	Test Condition(s)		Min	Typ	Mx	Unit
I_{CEO}	Collector Cutoff Current $I_B = 0$	$V_{CE} = -30 V$	TIP145	-	-	-2	mA
		$V_{CE} = -40 V$	TIP146	-	-		
		$V_{CE} = -50 V$	TIP147	-	-		
I_{EBO}	Emitter Cutoff Current $I_C = 0$	$V_{BE} = -5 V$	TIP145	-	-	-2	mA
			TIP146	-	-		
			TIP147	-	-		
I_{CBO}	Collector Cutoff Current $I_E = 0$	$V_{CB} = -60 V$	TIP145	-	-	-1	mA
		$V_{CB} = -80 V$	TIP146	-	-		
		$V_{CB} = -100 V$	TIP147	-	-		
$V_{CEO(\text{SUS})}$	Collector-Emitter Sustaining $I_B = 0$	$I_C = -30 \text{ mA}$	TIP145	-60	-	-	V
			TIP146	-80	-		
			TIP147	-100	-		

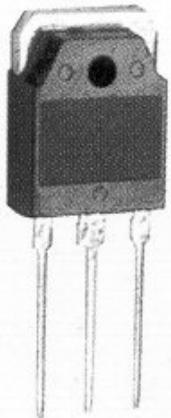
Symbol	Ratings	Test Condition(s)		Min	Typ	Mx	Unit
h_{FE}	DC Current Gain (*)	$V_{CE} = 4 V, I_C = 5 A$	TIP145	1000	-	-	-
		$V_{CE} = 4 V, I_C = 10 A$	TIP146	500	-	-	
$V_{CE(\text{SAT})}$	Collector-Emitter saturation Voltage (*)	$I_C = -5 A, I_B = -10 \text{ mA}$	TIP145	-	-	-2	V
			TIP146	-	-	-3	
V_{BE}	Base-Emitter Voltage (*)	$V_{CE} = -4 V, I_C = -10 A$	TIP145	-	-	-3	V
			TIP146	-	-	-3	
V_F	Parallel Diode forward voltage	$I_F = 10 A$	TIP147	-	-	3.5	V
t_{on}	Turn-on Time	$V_{BE(\text{off})} = 4.2 V, I_C = -10 A, R_L = 3 \Omega$	-	0.9	-	μs	
t_{off}	Turn-on Time	$I_{B(on)} = -40 \text{ mA}, I_{B(off)} = 40 \text{ mA}$	-	11	-		

(*) Pulse Width = 200 μs , Duty Cycle $\leq 1.5\%$

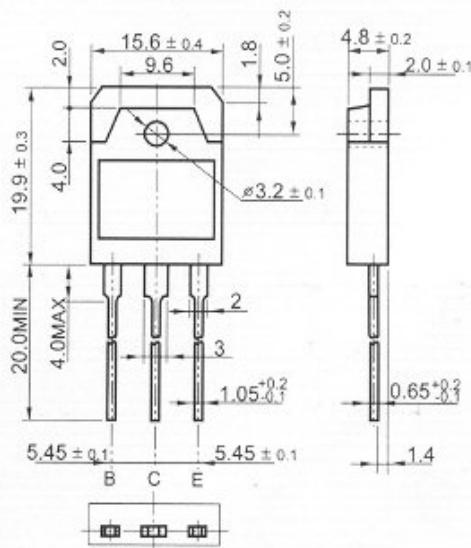


TIP145, TIP146, TIP147

MECHANICAL DATA CASE TO-3PN (SOT93)



TO-3PN



*Information furnished is believed to be accurate and reliable. However, CS assumes no responsibility for the consequences of use of such information nor for errors that could appear.
Data are subject to change without notice*