TIP145 – TIP146 – TIP147

PNP SILICON DARLINGTONS, SILICON POWER TRANSISTORS

They are silicon epitaxial-base PNP transistors in monolithic Darlington configuration and are mounted in SOT93 plastic packtage.
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			-5.0	V
I_C	Collector Current	I_C		-10	A
		I_{CM}		-15	
I_B	Base Current			-0.5	A
P_T	Power Dissipation	@ T_{mb} = 25° C		125	Watts
T_J	Junction Temperature			150	°C
T_S	Storage Temperature			-65 to +150	

THERMAL CHARACTERISTICS

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

TIP145 – TIP146 – TIP147

ELECTRICAL CHARACTERISTICS

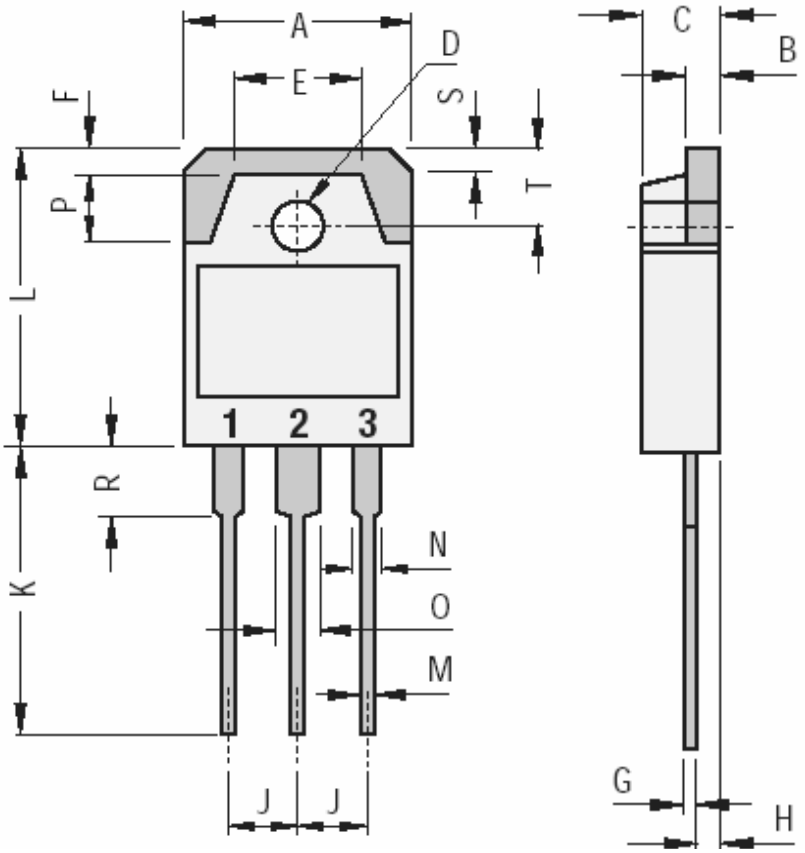
TC=25°C unless otherwise noted

Symbol	Ratings	Test Condition(s)		Min	Typ	Max	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	-	-		
$V_{CE0(SUS)}$	Collector-Emitter Sustaining I_B= 0	I_C= -30 mA	TIP145	-60	-	-	V
			TIP146	-80	-	-	
			TIP147	-100	-	-	
h_{FE}	DC Current Gain (*)	V_{CE}= 4 V I_C= 5 A		1000	-	-	-
		V_{CE}= 4 V I_C= 10 A		500	-	-	
$V_{CE(SAT)}$	Collector-Emitter saturation Voltage (*)	I_C= -5 A I_B= -10 mA	TIP145	-	-	-2	V
			TIP146				
			TIP147				
		I_C= -10 A I_B= -40 mA	TIP145	-	-	-3	
			TIP146				
			TIP147				
V_{BE}	Base-Emitter Voltage (*)	V_{CE}= -4 V I_C= -10 A	TIP145	-	-	-3	V
			TIP146				
			TIP147				
V_F	Parallel Diode forward voltage	I_F=10 A		-	-	3.5	V
t_{on}	Turn-on Time	$V_{BE(off)}$= 4.2V, I_C= -10 A R_L= 3 Ω $I_{B(on)}$= -40mA $I_{B(off)}$= 40 mA		-	0.9	-	µs
t_{off}	Turn-on Time			-	11	-	

(*) Pulse Width = 200 µs, Duty Cycle ∠ 1.5%

TIP145 – TIP146 – TIP147

MECHANICAL DATA CASE TO3PN Non Isolated Plastic Package



DIMENSIONS (mm)		
	Min.	Max.
A	15.20	1600
B	1.90	2.10
C	4.60	5.00
D	3.10	3.30
E		9.60
F		2.00
G	0.35	0.55
H		1.40
J	5.35	5.55
K	20.00	
L	19.60	20.20
M	0.95	1.25
N		2.00
O		3.00
P		4.00
R		4.00
S		1.80
T	4.80	5.20

Pin 1 :	Base
Pin 2 :	Collector
Pin 3 :	Emitter
Case :	Collector

September 2014