



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		-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	@ $T_{mb} = 25^\circ \text{C}$	125	Watts
T_J	Junction Temperature		150	$^\circ\text{C}$
T_S	Storage Temperature		-65 to +150	

THERMAL CHARACTERISTICS

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

TIP145 – TIP146 – TIP147

ELECTRICAL CHARACTERISTICS

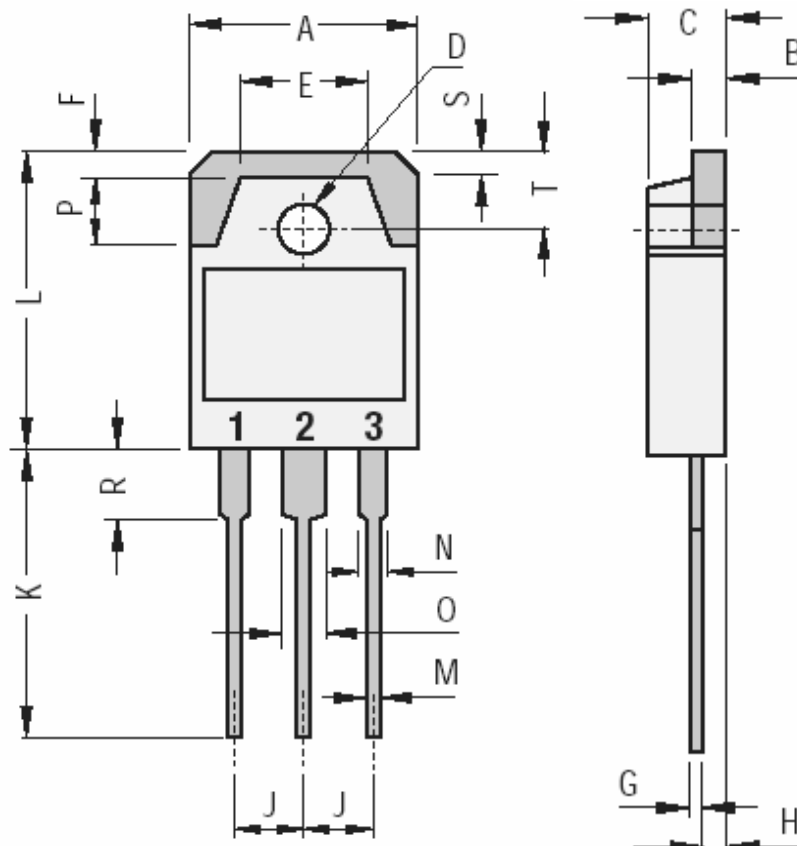
TC=25°C unless otherwise noted

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 $\angle 1.5\%$

TIP145 – TIP146 – TIP147

MECHANICAL DATA CASE TO3PN Non Isolated Plastic Package



DIMENSIONS (mm)		
	Min.	Max.
A	15.20	16.00
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 2012

Information furnished is believed to be accurate and reliable. However, Comset Semiconductors assumes no responsibility for the consequences of use of such information nor for any infringement of patents or other rights of third parties which may result from its use. Data are subject to change without notice. Comset Semiconductors makes no warranty, representation or guarantee regarding the suitability of its products for any particular purpose, nor does Comset Semiconductors assume any liability arising out of the application or use of any product and specifically disclaims any and all liability, including without limitation consequential or incidental damages. Comset Semiconductors' products are not authorized for use as critical components in life support devices or systems.