

PNP TIP105-106-107 SILICON DARLINGTON POWER TRANSISTORS

PNP epitaxial-base transistors in a monolithic Darlington circuit and housed in a TO-220 envelope. They are designed for general purpose amplifier and low-speed switching applications.

NPN complements are TIP100-101-102

Compliance to RoHS.

ABSOLUTE MAXIMUM RATINGS

Symbol	Ratings		Value	Unit	
V_{CBO}	Collector-Base Voltage		TIP105	-60	V
			TIP106	-80	
			TIP107	-100	
V_{CEO}	Collector-Emitter Voltage		TIP105	-60	V
			TIP106	-80	
			TIP107	-100	
V_{EBO}	Emitter-Base Voltage		TIP105	-5	V
			TIP106		
			TIP107		
I_C	Collector Current		TIP105	-8	A
			TIP106		
			TIP107		
I_{CM}	Collector Peak Current		TIP105	-15	A
			TIP106		
			TIP107		
I_B	Base Current		TIP105	-1	A
			TIP106		
			TIP107		
P_T	Power Dissipation	@ $T_c < 25^\circ$	TIP105	80	Watts
		@ $T_a < 25^\circ$	TIP106		
			TIP107		
				TIP105	
		TIP106			
		TIP107			
T_J	Junction Temperature		TIP105	150	$^\circ\text{C}$
			TIP106		
			TIP107		
T_s	Storage Temperature range		TIP105	-65 to +150	
			TIP106		
			TIP107		

PNP TIP105-106-107

THERMAL CHARACTERISTICS

Symbol	Ratings	Value	Unit
$R_{thJ-case}$	From junction-case	1.56	°C/W
$R_{thJ-amb}$	From junction-ambient	62.5	°C/W

ELECTRICAL CHARACTERISTICS

TC=25°C unless otherwise noted

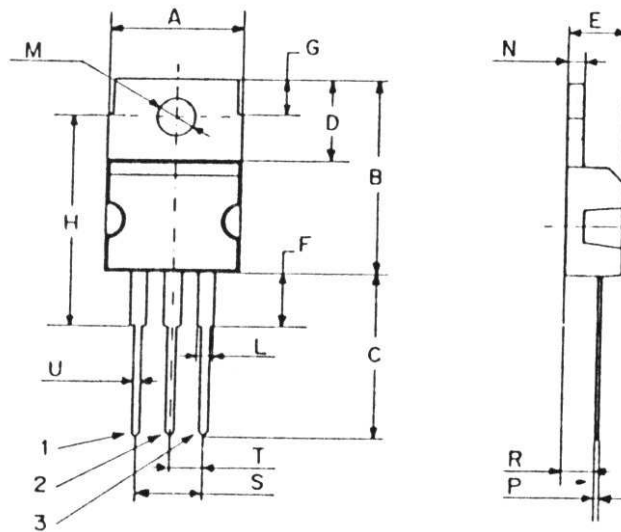
Symbol	Ratings	Test Condition(s)		Min	Typ	Max	Unit
I_{CBO}	Collector Cutoff Current	$I_E = 0, V_{CB} = -V_{CBOmax}$	TIP105	-	-	-50	μA
			TIP106				
			TIP107				
I_{CEO}	Collector Cutoff Current	$I_E = 0,$ $V_{CE} = -1/2 V_{CEOmax}$	TIP105	-	-	-50	μA
			TIP106				
			TIP107				
I_{EBO}	Emitter Cutoff Current	$V_{EB} = -5 V, I_C = 0$	TIP105	-	-	-8	mA
			TIP106				
			TIP107				
V_{CEO}	Collector-Emitter Breakdown Voltage (*)	$I_C = -30 mA, I_B = 0$	TIP105	-60	-	-	V
			TIP106	-80	-	-	
			TIP107	-100	-	-	
$V_{CE(SAT)}$	Collector-Emitter saturation Voltage (*)	$I_C = -3 A, I_B = -6 mA$	TIP105	-	-	-2	V
			TIP106				
			TIP107				
		$I_C = -8 A, I_B = -80 mA$	TIP105	-	-	-2.5	
			TIP106				
			TIP107				
$V_{BE(on)}$	Base-Emitter Voltage (*)	$I_C = -8 A, V_{CE} = -4 V$	TIP105	-	-	-2.8	V
			TIP106				
			TIP107				
h_{FE}	DC Current Gain (*)	$V_{CE} = -4 V, I_C = -3 A$	TIP105	1000	-	20k	-
			TIP106				
			TIP107				
		$V_{CE} = -4 V, I_C = -8 A$	TIP105	200	-	-	
			TIP106				
			TIP107				
C_{OB}	Output Capacitance	$I_E = 0, V_{CB} = -10 V,$ $f = 1MHz$	TIP105	-	-	300	pF
			TIP106				
			TIP107				

(*) Pulse Width $\approx 300 \mu s$, Duty Cycle $\angle 2.0\%$

PNP TIP105-106-107

MECHANICAL DATA CASE TO-220

DIMENSIONS (mm)		
	Min.	Max.
A	9,90	10,30
B	15,65	15,90
C	13,20	13,40
D	6,45	6,65
E	4,30	4,50
F	2,70	3,15
G	2,60	3,00
H	15,75	17,15
L	1,15	1,40
M	3,50	3,70
N	-	1,37
P	0,46	0,55
R	2,50	2,70
S	4,98	5,08
T	2,49	2,54
U	0,70	0,90



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 results 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.