NPN TIP110-111-112

SILICON DARLINGTON POWER TRANSISTORS

NPN epitaxial-base transistors in a monolithic Dalrington circuit and housed in a TO-220 enveloppe.
They are designed for general purpose amplifier and low-speed switching applications.
PNP complements are TIP115-116-117

Compliance to RoHS·

ABSOLUTE MAXIMUM RATINGS

Symbol	Ratings			Value	Unit
V_{CBO}	Collector-Base Voltage		TIP110	60	V
			TIP111	80	
			TIP112	100	
V_{CEO}	Collector-Emitter Voltage		TIP110	60	V
			TIP111	80	
			TIP112	100	
V_{EBO}	Emitter-Base Voltage		TIP110	5	V
			TIP111		
			TIP112		
I_C	Collector Current		TIP110	2	A
			TIP111		
			TIP112		
I_{CM}	Collector Peak Current		TIP110	4	A
			TIP111		
			TIP112		
I_B	Base Current		TIP110	50	mA
			TIP111		
			TIP112		
P_T	Power Dissipation	@ T_c < 25°	TIP110	50	Watts
			TIP111		
			TIP112		
		@ T_a < 25°	TIP110	2	
			TIP111		
			TIP112		
T_J	Junction Temperature		TIP110	150	°C
			TIP111		
			TIP112		
T_s	Storage Temperature range		TIP110	-65 to +150	
			TIP111		
			TIP112		

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THERMAL CHARACTERISTICS

Symbol	Ratings		Value	Unit
$R_{thJ\text{-}case}$	From junction-case	TIP110 TIP111 TIP112	2.5	°C/W
$R_{thJ\text{-}amb}$	From junction-ambient	TIP110 TIP111 TIP112	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_{CBO}max	TIP110 TIP111 TIP112	-	-	1	mA
I_{CEO}	Collector Cutoff Current	I_E= 0, V_{CE} = 1/2 V_{CEO}max	TIP110 TIP111 TIP112	-	-	2	mA
I_{EBO}	Emitter Cutoff Current	V_{EB}= 5 V, I_C= 0	TIP110 TIP111 TIP112	-	-	2	mA
V_{CEO}	Collector-Emitter Breakdown Voltage (*)	I_C= 30 mA, I_B= 0	TIP110 TIP111 TIP112	60 80 100	- - -	- - -	V
$V_{CE(SAT)}$	Collector-Emitter saturation Voltage (*)	I_C= 2 A, I_B= 8 mA	TIP110 TIP111 TIP112	-	-	2.5	V
$V_{BE(on)}$	Base-Emitter Voltage (*)	I_C= 2 A, V_{CE}= 4 V	TIP110 TIP111 TIP112	-	-	2.8	V
h_{FE}	DC Current Gain (*)	V_{CE}= 4 V, I_C= 1 A	TIP110 TIP111 TIP112	1000	-	-	-
		V_{CE}= 4 V, I_C= 2 A	TIP110 TIP111 TIP112	500	-	-	
C_{OB}	Output Capacitance	I_E= 0, V_{CB} = 10 V f= 0.1MHz	TIP110 TIP111 TIP112	-	-	100	pF

(*) Pulse Width ≈ 300 μs, Duty Cycle ∠ 2.0%

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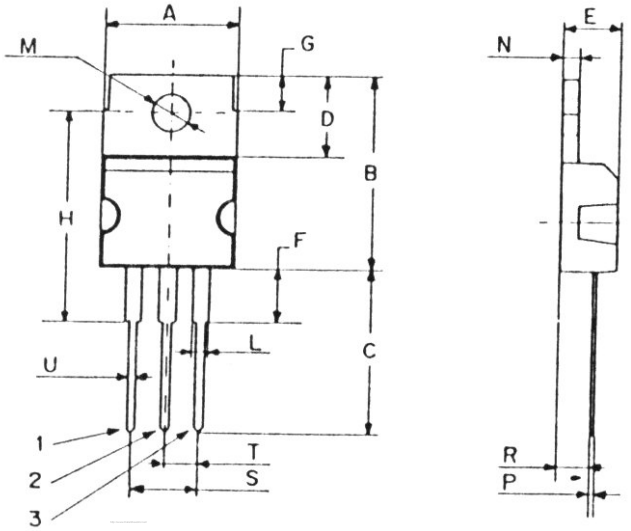
MECHANICAL DATA CASE TO-220

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

Revised August 2012

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