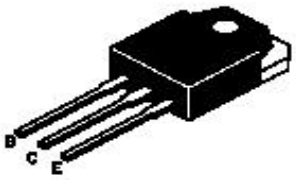
Continental Device India Limited

An ISO/TS 16949, ISO 9001 and ISO 14001 Certified Company

SILICON PLANAR DARLINGTON POWER TRANSISTORS

TIP140, 141, 142 NPN
TIP145, 146, 147 PNP



TO- 3PN Non Isolated Plastic Package

Designed for General Purpose Amplifier and Low Frequency Switching Applications

ABSOLUTE MAXIMUM RATINGS

DESCRIPTION	SYMBOL	TIP140 TIP145	TIP141 TIP146	TIP142 TIP147	UNIT
Collector Base Voltage	V_{CBO}	60	80	100	V
Collector Emitter Voltage	V_{CEO}	60	80	100	V
Emitter Base Voltage	V_{EB0}	5.0			V
Collector Current Continuous	I_C	10			A
Collector Current Peak	*I_{CM}	15			A
Base Current Continuous	I_B	0.5			A
Total Power Dissipation at T_c = 25ºC	P_D	125			W
Operating and Storage Junction Temperature Range	T_j, T_{stg}	- 65 to +150			ºC

***5ms ≤ 10% Duty Cycle**

THERMAL RESISTANCE

From Junction to case	$R_{th\ (j-c)}$	1.0	ºC/W
From Junction to Ambient in free air	$R_{th\ (j-a)}$	35.7	ºC/W

ELECTRICAL CHARACTERISTICS (T_c=25ºC unless specified otherwise)

DESCRIPTION	SYMBOL	TEST CONDITION	MIN	TYP	MAX	UNIT
Collector Emitter Sustaining Voltage	**$V_{CEO\ (sus)}$	I_C =30mA, I_B=0				
		TIP140/145	60			V
		TIP141/146	80			V
		TIP142/147	100			V
Collector Cutoff Current	I_{CEO}	V_{CE} =1/2 rated V_{CEO}, I_B=0			2.0	mA
Collector Cutoff Current	I_{CBO}	V_{CB} =Rated V_{CBO}, I_E=0			1.0	mA
Emitter Cutoff Current	I_{EBO}	V_{EB} =5.0 V, I_C=0			2.0	mA
DC Current Gain	**h_{FE}	I_C =5A, V_{CE} =4V	1000			
		I_C =10A, V_{CE} =4 V	500			
Collector Emitter Saturation Voltage	**$V_{CE\ (sat)}$	I_C =5A, I_B=10mA			2.0	V
		I_C =10A, I_B =40mA			3.0	V
Base Emitter Saturation Voltage	**$V_{BE\ (sat)}$	I_C =10A, I_B =40mA			3.5	V
Base Emitter On Voltage	**$V_{BE\ (on)}$	I_C =10A, V_{CE} =4 V			3.0	V

SWITCHING TIME

DESCRIPTION	SYMBOL	TEST CONDITION	MIN	TYP	MAX	UNIT
Delay Time	t_d	V_{CC}=30V, I_C=5A, I_B=20mA, Duty Cycle ≤ 2%, I_{B1}=I_{B2}, R_C & R_B varied T_j=25ºC		0.15		µs
Rise Time	t_r			0.55		µs
Storage Time	t_s			2.5		µs
Fall Time	t_f			2.5		µs

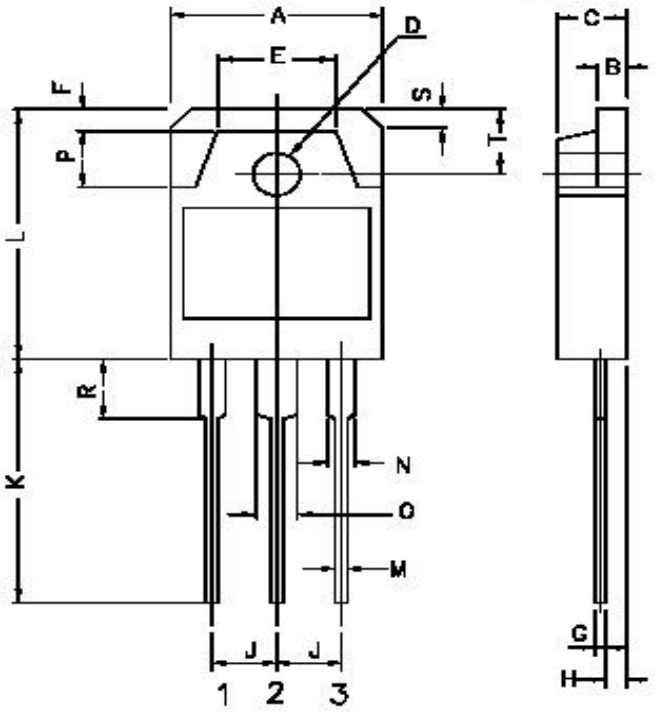
****Pulsed test : Pulse witdh = 300µs, duty cycle ≤ 2%**

TIP140_147 Rev190706E

TIP140, 141, 142 NPN
TIP145, 146, 147 PNP

TO- 3PN Non Isolated
Plastic Package

TO—3PN Plastic Package

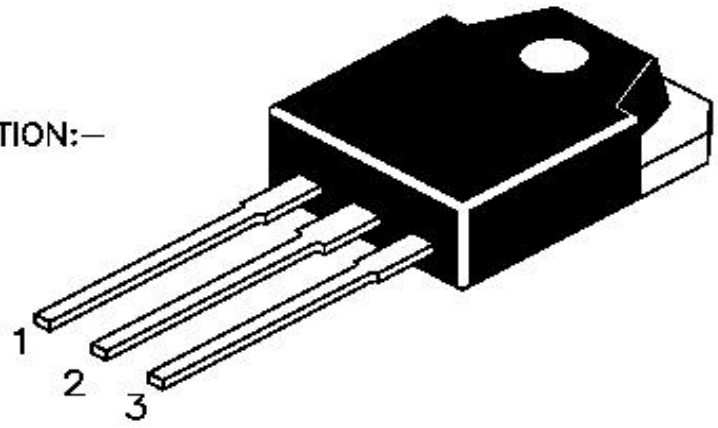


ALL DIMENSIONS ARE IN M.M.

DIM	MIN	MAX
A	15.2	16.0
B	1.9	2.1
C	4.6	5.0
D	3.1	3.3
E	—	9.6
F	—	2.0
G	0.55	0.85
H	—	1.4
J	5.35	5.55
K	20.0	—
L	19.6	20.2
M	0.95	1.25
N	—	2.0
O	—	3.0
P	—	4.0
R	—	4.0
S	—	1.8
T	4.8	5.2

PIN CONFIGURATION:—

1. BASE
2. COLLECTOR
3. EMITTER



Packing Detail

PACKAGE	STANDARD PACK		INNER CARTON BOX		OUTER CARTON BOX		
	Detail	Net Weight/Qty.	Size	Qty.	Size	Qty.	Gr. Wt.
TO—3PN	100pcs/polybag	639gm/100pcs	3"X7.5"X7.5"	0.3K	18"X15"X9"	3K	21kgs

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Component Disposal Instructions

1. CDIL Semiconductor Devices are RoHS compliant, customers are requested to please dispose as per prevailing Environmental Legislation of their Country.

2. In Europe, please dispose as per EU Directive 2002/96/EC on Waste Electrical and Electronic Equipment (WEEE).

Disclaimer

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