

SILICON POWER DARLINGTON TRANSISTORS

DESCRIPTION :

- Collector-Emitter Sustaining Voltage-
: $V_{CEO(SUS)} = 100V(\text{Min})$
- High DC Current Gain : $hFE = 1000(\text{min}) @ IC = 5.0A$
- Low Collector Saturation Voltage-
: $V_{CE(SAT)} = 2.0V(\text{Max.}) @ IC = 5.0A$
- Complement to Type TIP147
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

APPLICATIONS :

- Designed for general-purpose amplifier and low-speed switching applications.

ABSOLUTE MAXIMUM RATINGS($T_a = 25^\circ\text{C}$)

Characteristic	Symbol	TIP142	Unit
Collector-Base Voltage	V_{CBO}	100	V
Collector-Emitter Voltage	V_{CEO}	100	V
Emitter-Base Voltage	V_{EBO}	5	V
Collector Current-Continuous	I_C	10	A
Collector Current-Peak	I_{CM}	15	A
Base Current- Continuous	I_B	0.5	A
Collector Power Dissipation @ $T_C = 25^\circ\text{C}$	P_C	125	Watts
Junction Temperature	T_J	150	$^\circ\text{C}$
Storage Temperature	T_{STG}	-65 to +150	$^\circ\text{C}$

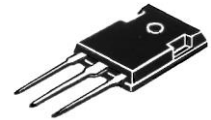
THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Thermal Resistance, Junction to Case	$R_{th\ j-c}$	1.0	$^\circ\text{C/W}$

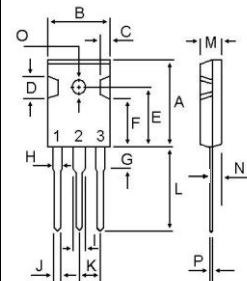
NPN

TIP142

**10 AMPERES
SILICON DARLINGTON
POWER TRANSISTOR
100 VOLTS
125 WATTS**



TO-247(3P)



PIN 1.BASE.
2.COLLECTOR
3.EMITTER

DIM	MILLIMETERS	
	MIN	MAX
A	20.80	21.80
B	15.38	16.20
C	1.90	2.70
D	5.10	6.10
E	14.50	15.50
F	11.20	13.20
G	3.75	4.35
H	1.90	2.30
I	2.90	3.30
J	1.00	1.40
K	5.26	5.66
L	19.50	20.50
M	4.68	5.36
N	2.30	2.60
O	3.45	3.85
P	0.48	0.72

ELECTRICAL CHARACTERISTICS ($T_C=25^{\circ}\text{C}$ unless otherwise noted)

Characteristic	Symbol	Min.	Max	Unit
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OFF CHARACTERISTICS

Collector-Emitter Sustaining Voltage ($I_C = 30\text{ mA}$, $I_B = 0$)	$V_{CEO(SUS)}$	100		V
Collector Cutoff Current ($V_{CB} = 100\text{ V}$, $I_E = 0$)	I_{CBO}		1.0	mA
Collector Cutoff Current ($V_{CE} = 50\text{ V}$, $I_B = 0$)	I_{CEO}		2.0	mA
Emitter Cutoff Current ($V_{EB} = 5.0\text{ V}$, $I_C = 0$)	I_{EBO}		2.0	mA

ON CHARACTERISTICS

DC Current Gain ($I_C = 5.0\text{ A}$, $V_{CE} = 4.0\text{ V}$) ($I_C = 10\text{ A}$, $V_{CE} = 4.0\text{ V}$)	h_{FE}	1000 500		
Collector-Emitter Saturation Voltage ($I_C = 5.0\text{ A}$, $I_B = 10\text{ mA}$) ($I_C = 10\text{ A}$, $I_B = 40\text{ mA}$)	$V_{CE(SAT)}$		2.0 3.0	V
Base-Emitter Saturation Voltage ($I_C = 10\text{ A}$, $I_B = 40\text{ mA}$)	$V_{BE(SAT)}$		3.5	V
Base-Emitter On Voltage ($I_C = 10\text{ A}$, $V_{CE} = 4.0\text{ V}$)	$V_{BE(ON)}$		3.0	V

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