

## isc Silicon NPN Darlington Power Transistor

## TIP142F

## DESCRIPTION

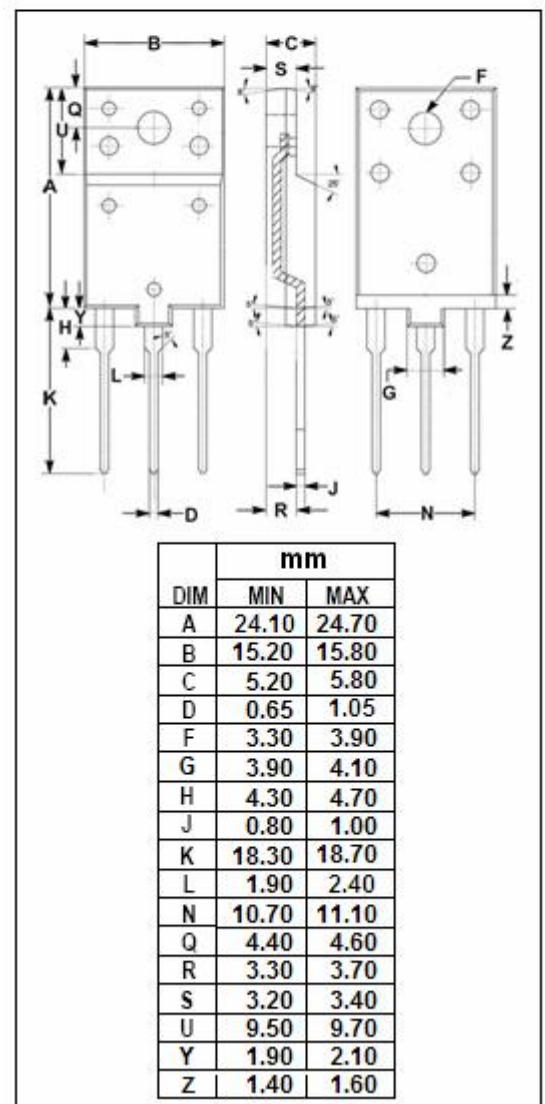
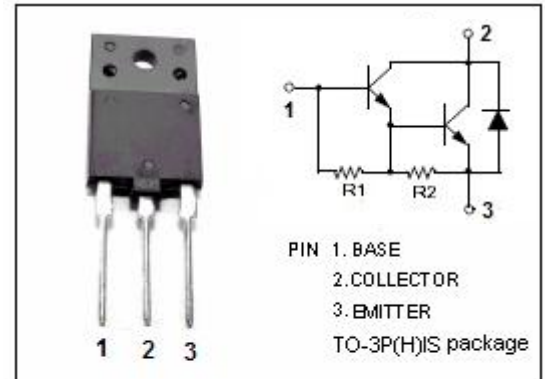
- High DC Current Gain-  
:  $h_{FE} = 1000(\text{Min}) @ I_C = 5A$
- Collector-Emitter Sustaining Voltage-  
:  $V_{CEQ(SUS)} = 100V(\text{Min})$
- Complement to Type TIP147F
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

## APPLICATIONS

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

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

SYMBOL	PARAMETER	VALUE	UNIT
$V_{CBO}$	Collector-Base Voltage	100	V
$V_{CEO}$	Collector-Emitter Voltage	100	V
$V_{EBO}$	Emitter-Base Voltage	5	V
$I_C$	Collector Current-Continuous	10	A
$I_{CM}$	Collector Current-Peak	15	A
$I_B$	Base Current- Continuous	0.5	A
$P_C$	Collector Power Dissipation @ $T_c = 25^\circ\text{C}$	60	W
$T_j$	Junction Temperature	150	$^\circ\text{C}$
$T_{stg}$	Storage Temperature Range	-65~150	$^\circ\text{C}$



**isc Silicon NPN Darlington Power Transistor****TIP142F****ELECTRICAL CHARACTERISTICS****T<sub>C</sub>=25°C unless otherwise specified**

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
V <sub>CEQ(SUS)</sub>	Collector-Emitter Sustaining Voltage	I <sub>C</sub> = 30mA, I <sub>B</sub> = 0	100			V
V <sub>CE(sat)-1</sub>	Collector-Emitter Saturation Voltage	I <sub>C</sub> = 5A, I <sub>B</sub> = 10mA			2.0	V
V <sub>CE(sat)-2</sub>	Collector-Emitter Saturation Voltage	I <sub>C</sub> = 10A, I <sub>B</sub> = 40mA			3.0	V
V <sub>BE(sat)</sub>	Base-Emitter Saturation Voltage	I <sub>C</sub> = 10A, I <sub>B</sub> = 40mA			3.5	V
V <sub>BE(on)</sub>	Base-Emitter On Voltage	I <sub>C</sub> = 10A ; V <sub>CE</sub> = 4V			3.0	V
I <sub>CBO</sub>	Collector Cutoff current	V <sub>CB</sub> = 100V, I <sub>E</sub> = 0			1	mA
I <sub>CEO</sub>	Collector Cutoff current	V <sub>CE</sub> = 50V, I <sub>B</sub> = 0			2	mA
I <sub>EBO</sub>	Emitter Cutoff Current	V <sub>EB</sub> = 5V; I <sub>C</sub> = 0			2	mA
h <sub>FE-1</sub>	DC Current Gain	I <sub>C</sub> = 5A ; V <sub>CE</sub> = 4V	1000			
h <sub>FE-2</sub>	DC Current Gain	I <sub>C</sub> = 10A ; V <sub>CE</sub> = 4V	500			

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