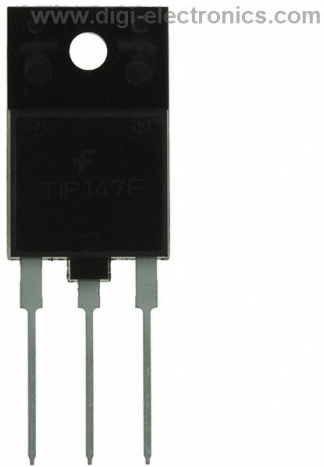


# TIP147FTU Datasheet



<https://www.DiGi-Electronics.com>

DiGi Electronics Part Number	TIP147FTU-DG
Manufacturer	<a href="#">onsemi</a>
Manufacturer Product Number	TIP147FTU
Description	TRANS PNP DARL 100V 10A TO3PF
Detailed Description	Bipolar (BJT) Transistor PNP - Darlington 100 V 10 A 125 W Through Hole TO-3PF



Tel: +00 852-30501935

RFQ Email: [Info@DiGi-Electronics.com](mailto:Info@DiGi-Electronics.com)

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## Purchase and inquiry

Manufacturer Product Number:

TIP147FTU

Series:

-

Transistor Type:

PNP - Darlington

Voltage - Collector Emitter Breakdown (Max):

100 V

Current - Collector Cutoff (Max):

2mA

Power - Max:

125 W

Operating Temperature:

150°C (TJ)

Package / Case:

TO-3P-3 Full Pack

Base Product Number:

TIP147

Manufacturer:

onsemi

Product Status:

Obsolete

Current - Collector (Ic) (Max):

10 A

Vce Saturation (Max) @ Ib, Ic:

3V @ 40mA, 10A

DC Current Gain (hFE) (Min) @ Ic, Vce:

1000 @ 5A, 4V

Frequency - Transition:

-

Mounting Type:

Through Hole

Supplier Device Package:

TO-3PF

## Environmental & Export classification

RoHS Status:

ROHS3 Compliant

REACH Status:

REACH Unaffected

HTSUS:

8541.29.0095

Moisture Sensitivity Level (MSL):

Not Applicable

ECCN:

EAR99





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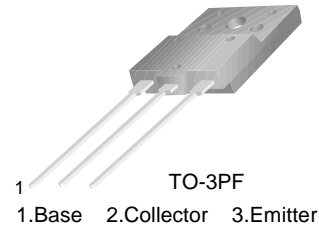
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## TIP145F/146F/147F

### Monolithic Construction With Built In Base-Emitter Shunt Resistors

- High DC Current Gain :  $h_{FE} = 1000$  @  $V_{CE} = -4V$ ,  $I_C = -5A$  (Min.)
- Industrial Use
- Complement to TIP140F/141F/142F

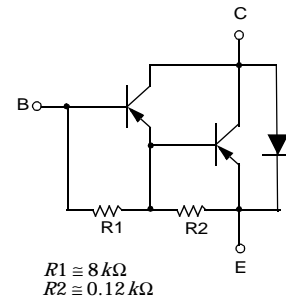


### PNP Epitaxial Darlington Transistor

#### Absolute Maximum Ratings $T_C=25^\circ\text{C}$ unless otherwise noted

Symbol	Parameter	Value	Units
$V_{CBO}$	Collector-Emitter Voltage : TIP145F	- 60	V
	: TIP146F	- 80	V
	: TIP147F	- 100	V
$V_{CEO}$	Collector-Emitter Voltage : TIP145F	- 60	V
	: TIP146F	- 80	V
	: TIP147F	- 100	V
$V_{EBO}$	Emitter-Base Voltage	- 5	V
$I_C$	Collector Current (DC)	- 10	A
$I_{CP}$	Collector Current (Pulse)	- 15	A
$I_B$	Base Current (DC)	- 0.5	A
$P_C$	Collector Dissipation ( $T_C=25^\circ\text{C}$ )	60	W
$T_J$	Junction Temperature	150	$^\circ\text{C}$
$T_{STG}$	Storage Temperature	- 65 ~ 150	$^\circ\text{C}$

Equivalent Circuit



#### Electrical Characteristics $T_C=25^\circ\text{C}$ unless otherwise noted

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Units	
$V_{CEO(sus)}$	Collector-Emitter Sustaining Voltage	$I_C = -30\text{mA}$ , $I_B = 0$	- 60			V	
	: TIP145F						
	: TIP146F						
$I_{CEO}$	Collector Cut-off Current	$V_{CE} = -30V$ , $I_B = 0$			- 2	mA	
	: TIP145F					mA	
	: TIP146F					mA	
$I_{CBO}$	Collector Cut-off Current	$V_{CE} = -50V$ , $I_B = 0$			- 2	mA	
	: TIP145F					mA	
	: TIP146F					mA	
$I_{EBO}$	Emitter Cut-off Current	$V_{BE} = -5V$ , $I_C = 0$			- 2	mA	
	: TIP145F						
	: TIP146F						
$h_{FE}$	DC Current Gain	$V_{CE} = -4V$ , $I_C = -5A$	1000				
	: TIP145F						
	: TIP146F						
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C = -5A$ , $I_B = -10\text{mA}$			- 2	V	
	: TIP145F					V	
	: TIP146F					V	
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	$I_C = -10A$ , $I_B = -40\text{mA}$			- 3.5	V	
	: TIP145F						
	: TIP146F						
$V_{BE(on)}$	Base-Emitter On Voltage	$V_{CE} = -4V$ , $I_C = -10A$			- 3	V	
	: TIP145F						
	: TIP146F						
$t_D$	Delay Time	$V_{CC} = -30V$ , $I_C = -5A$			0.15	$\mu\text{s}$	
$t_R$	Rise Time						
$t_{STG}$	Storage Time						
$t_f$	Fall Time						
		$I_{B1} = -20\text{mA}$ , $I_{B2} = 20\text{mA}$				0.55	$\mu\text{s}$
		$R_L = 6\Omega$				2.5	$\mu\text{s}$
						2.5	$\mu\text{s}$

# Typical Characteristics

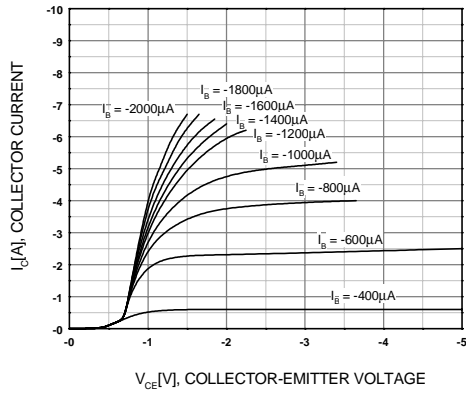


Figure 1. Static Characteristic

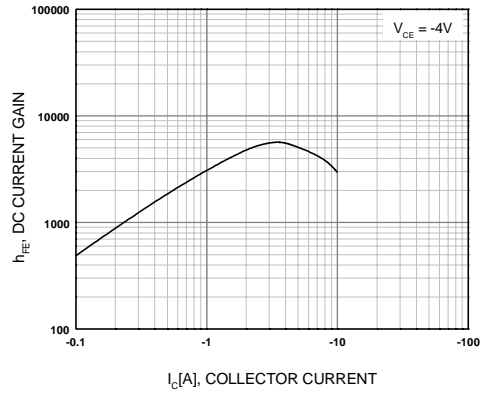


Figure 2. DC current Gain

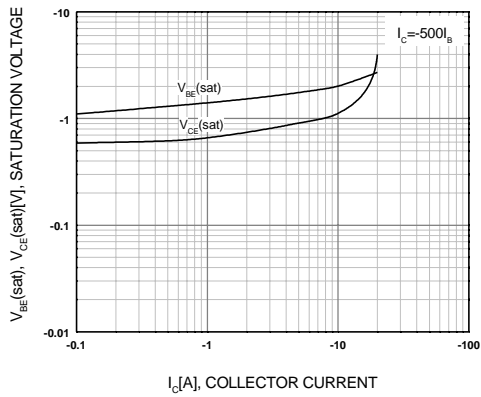


Figure 3. Collector-Emitter Saturation Voltage  
Base-Emitter Saturation Voltage

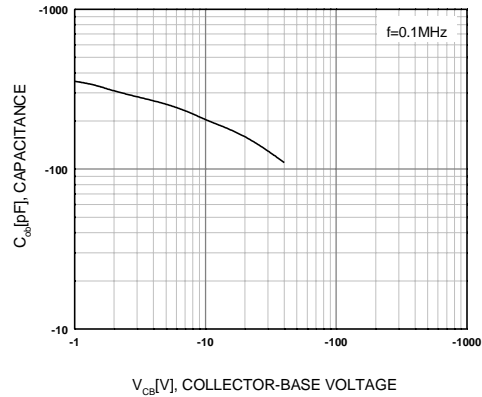


Figure 4. Collector Output Capacitance

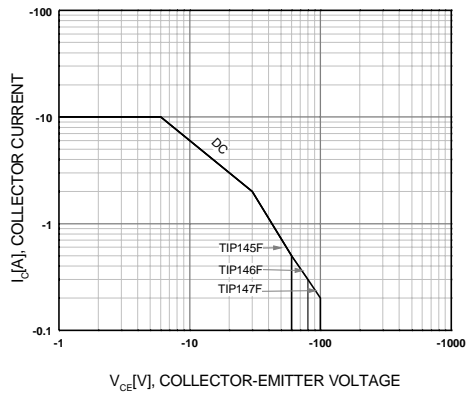


Figure 5. Safe Operating Area

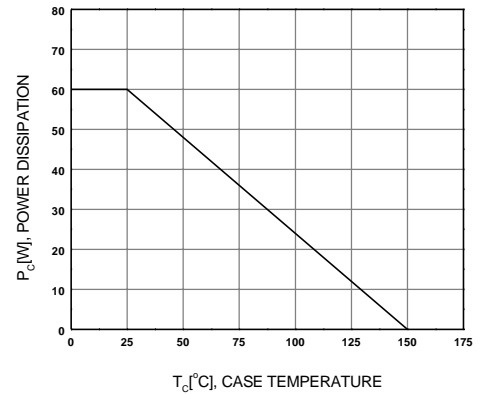
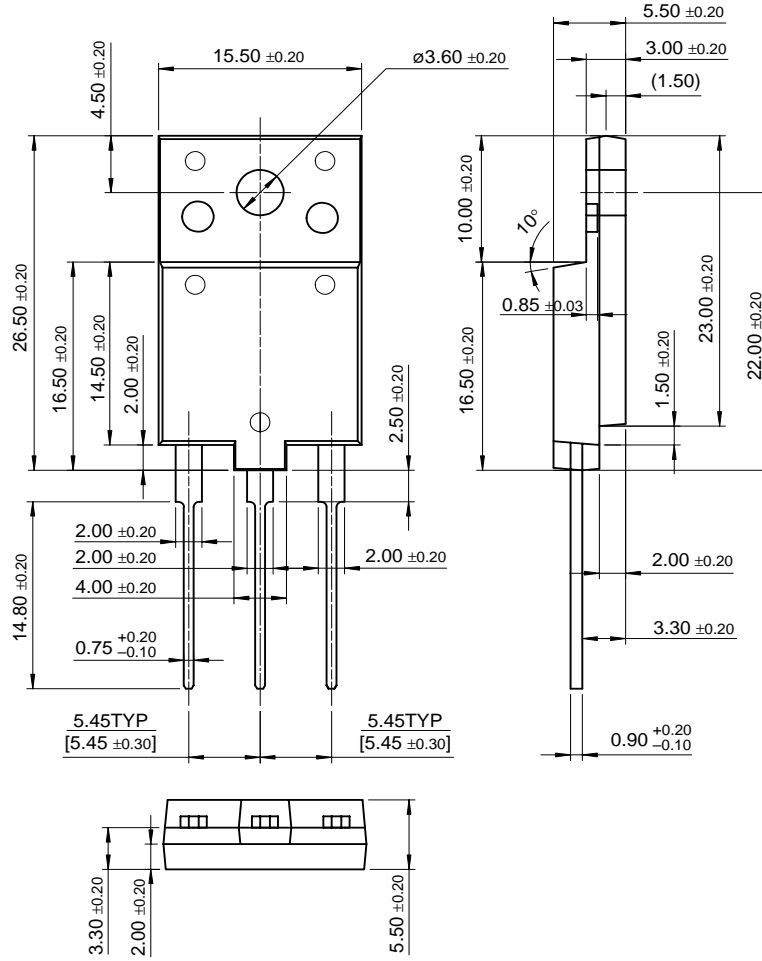


Figure 6. Power Derating

Package Dimensions

TO-3PF



Dimensions in Millimeters

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