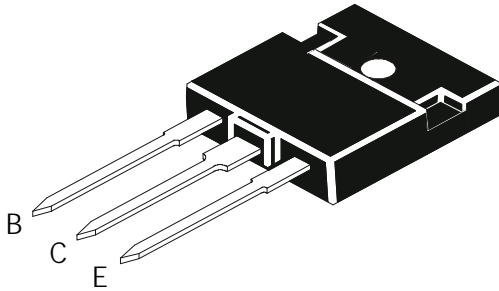


**SILICON PLANAR DARLINGTON POWER TRANSISTORS**

**TIP140F, 141F, 142F NPN**  
**TIP145F, 146F, 147F PNP**



**TO- 3P Fully Isolated  
Plastic Package**

**For use in Power Linear and Switching Applications**

**ABSOLUTE MAXIMUM RATINGS**

DESCRIPTION	SYMBOL	TIP140F TIP145F	TIP141F TIP146F	TIP142F TIP147F	UNIT
Collector-Base Voltage	$V_{CBO}$	60	80	100	V
Collector-Emitter Voltage	$V_{CEO}$	60	80	100	V
Emitter-Base Voltage	$V_{EBO}$		5.0		V
Collector Current	$I_C$		10		A
Collector Peak Current (repetitive)	$I_{CM}$		20		A
Base Current	$I_B$		0.5		A
Total Power Dissipation @ $T_c \leq 25^\circ\text{C}$	$P_D$		60		W
Operating And Storage Junction Temperature Range	$T_j, T_{stg}$		- 65 to +150		$^\circ\text{C}$

**THERMAL RESISTANCE**

From Junction to case	$R_{th(j-c)}$	1.0	$^\circ\text{C/W}$
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**ELECTRICAL CHARACTERISTICS ( $T_c=25^\circ\text{C}$  unless specified otherwise)**

DESCRIPTION	SYMBOL	TEST CONDITION	MIN	TYP	MAX	UNIT
Collector Cutoff Current	$I_{CBO}$	$V_{CB} = \text{Rated } V_{CBO}, I_E = 0$			1.0	mA
Collector Cutoff Current	$I_{CEO}$	$V_{CE} = 1/2 \text{ rated } V_{CEO}, I_B = 0$			2.0	mA
Emitter Cutoff Current	$I_{EBO}$	$V_{EB} = 5.0 \text{ V}, I_C = 0$			2.0	mA
Collector-Emitter Sustaining Voltage	$*V_{CEO(sus)}$	$I_C = 30\text{mA}, I_B = 0$ <b>TIP140F/145F</b> <b>TIP141F/146F</b> <b>TIP142F/147F</b>	60 80 100			V V V
Collector-Emitter Saturation Voltage	$*V_{CE(sat)}$	$I_C = 5\text{A}, I_B = 10\text{mA}$ $I_C = 10\text{A}, I_B = 40\text{mA}$			2.0 3.0	V V
Base-Emitter On Voltage	$*V_{BE(on)}$	$I_C = 10\text{A}, V_{CE} = 4 \text{ V}$			3.0	V
DC Current Gain	$*h_{FE}$	$I_C = 5\text{A}, V_{CE} = 4\text{V}$ $I_C = 10\text{A}, V_{CE} = 4 \text{ V}$	1000 500			

**SWITCHING TIME**

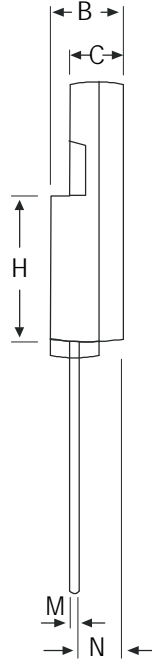
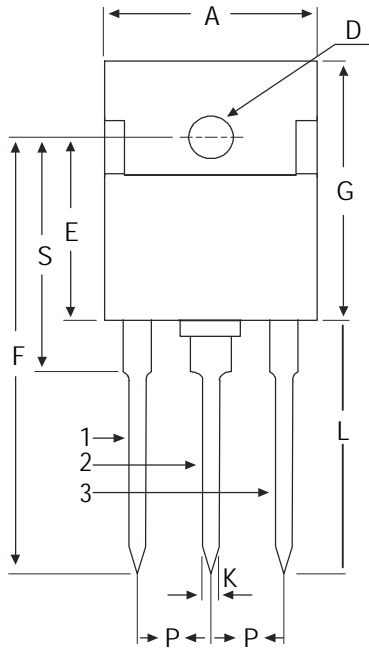
DESCRIPTION	SYMBOL	TEST CONDITION	MIN	TYP	MAX	UNIT
Turn on time	$t_{on}$	$I_C = 10\text{A}, I_{B1} = 40\text{mA}, I_{B2} = -40\text{mA}, R_L = 3\Omega$		0.9		$\mu\text{s}$
Turn off time	$t_{off}$			4.0		$\mu\text{s}$

\*Pulsed : Pulse duration=200ms, duty cycle=1.5%

**TIP140F, 141F, 142F NPN  
TIP145F, 146F, 147F PNP**

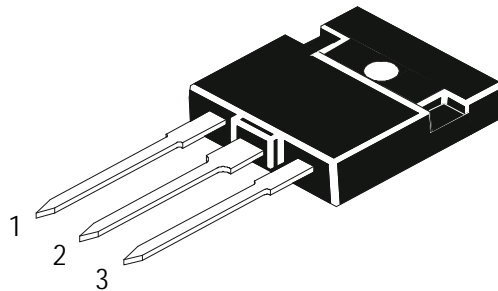
**TO- 3P Fully Isolated  
Plastic Package**

**TO-3P (TO-218) Plastic Package**



DIM	MIN	MAX
A	15.80	16.40
B	5.20	5.70
C	3.80	4.20
D	Ø 3.30	Ø 3.60
E	14.50	15.10
F	33.25	36.75
G	20.75	21.25
H	11.50	12.25
K	1.00	1.30
L	18.75	21.65
M	0.40	0.60
N	3.15	3.45
P	5.21	5.72
S	18.75	19.25

All diminsions in mm.



**Pin Configuration**

1. Base
2. Collector
3. Emitter

**Packing Detail**

PACKAGE	STANDARD PACK		INNER CARTON BOX		OUTER CARTON BOX		
	Details	Net Weight/Qty	Size	Qty	Size	Qty	Gr Wt
TO-3P	100 pcs/polybag	628 gm/100 pcs	3" x 7.5" x 7.5"	0.3K	17" x 15" x 13.5"	4.8K	42 kgs