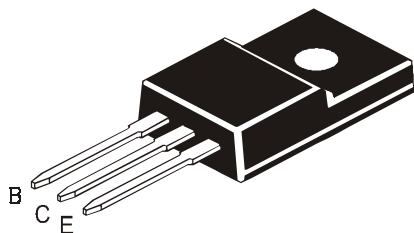


## SILICON PLANAR POWER DARLINGTON TRANSISTORS



<b>NPN</b>	<b>PNP</b>
<b>CJF100</b>	<b>CJF105</b>
<b>CJF101</b>	<b>CJF106</b>
<b>CJF102</b>	<b>CJF107</b>

**TO-220FP Fully Isolated Plastic Package**

### Power Darlington for Linear and Switching Applications

#### ABSOLUTE MAXIMUM RATINGS

DESCRIPTION	SYMBOL	CJF100 CJF105	CJF101 CJF106	CJF102 CJF107	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
RMS Isolation Voltage ( for 1sec, R.H. <30%, $T_A=25^{\circ}C$ )	(1) $V_{ISOL}$ (a) (b)	3500 1500			$V_{RMS}$
Collector Current - Continuous	$I_C$	8.0			A
Peak	$I_{CM}$	15			
Base Current	$I_B$	1.0			A
Total Power Dissipation @ $T_C=25^{\circ}C$	$P_{tot}$	80			W
Derate Above $25^{\circ}C$		0.64			W/ $^{\circ}C$
Total Power Dissipation @ $T_A=25^{\circ}C$	$P_{tot}$	2.0			W
Derate Above $25^{\circ}C$		0.016			W/ $^{\circ}C$
Operating And Storage Junction Temperature Range	$T_j, T_{stg}$	- 65 to +150			$^{\circ}C$

(1) RMS Isolation Voltage : (a) 3500  $V_{RMS}$  with Package in Clip Mounting Position (b) 1500  $V_{RMS}$  with Package in Screw Mounting Position (for 1sec, R.H.<30% $T_a=25^{\circ}C$ ; Pulse Test: Pulse Width  $\leq 300\mu s$ , Duty Cycle  $\leq 2\%$ )

#### THERMAL RESISTANCE

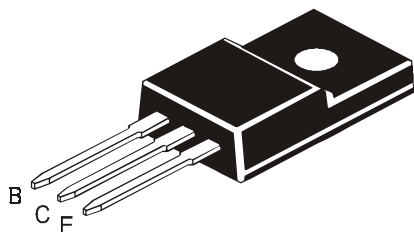
Characteristics	SYMBOL	MAX	UNIT
From Junction to Ambient	$R_{th(j-a)}$	62.5	$^{\circ}C/W$
From Junction to Case	$R_{th(j-c)}$	1.56	$^{\circ}C/W$

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

DESCRIPTION	SYMBOL	TEST CONDITION	MIN	MAX	UNIT
Collector Emitter Sustaining Voltage	$V_{CEO(sus)}$ *	$I_C=30mA, I_B=0$ <b>CJF100/105</b> <b>CJF101/106</b> <b>CJF102/107</b>	60 80 100	- - -	V V V
Collector Cut Off Current	$I_{CEO}$	$V_{CE}= 1/2$ Rated $V_{CEO}, I_B=0$	-	50	$\mu A$
	$I_{CBO}$	$V_{CB}=$ Rated $V_{CBO}, I_E=0$	-	50	$\mu A$
Emitter Cut Off Current	$I_{EBO}$	$V_{EB}=5V, I_C=0$	-	8.0	mA

# SILICON PLANAR POWER DARLINGTON TRANSISTORS

<b>NPN</b>	<b>PNP</b>
<b>CJF100</b>	<b>CJF105</b>
<b>CJF101</b>	<b>CJF106</b>
<b>CJF102</b>	<b>CJF107</b>



**TO-220FP Fully Isolated Plastic Package**

## ELECTRICAL CHARACTERISTICS ( $T_c=25^\circ\text{C}$ unless specified otherwise)

DESCRIPTION	SYMBOL	TEST CONDITION	MIN	MAX	UNIT
Collector Emitter Saturation Voltages	$V_{CE(sat)}^*$	$I_C=3A, I_B=6mA$	-	2.0	V
		$I_C=8A, I_B=80mA$	-	2.5	
Base Emitter On Voltage	$V_{BE(on)}^*$	$I_C=8A, V_{CE}=4V$	-	2.8	V
DC Current Gain	$h_{FE}^*$	$I_C=3A, V_{CE}=4V$	1000	20000	
		$I_C=8A, V_{CE}=4V$	200	-	

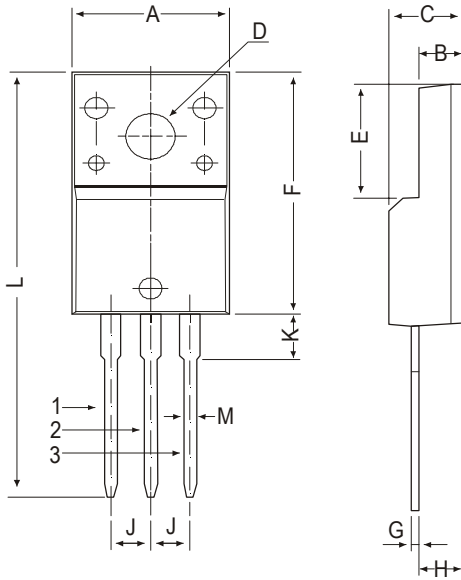
## DYNAMIC CHARACTERISTICS

Small Signal Current Gain	$ h_{fe} $	$I_C=3A, V_{CE}=4V, f=1MHz$	4.0	-	
Output Capacitance	$C_o$	$V_{CB}=10V, I_E=0, f=0.1MHz$			
			<b>PNP</b>	-	300
		<b>NPN</b>	-	200	
Forward Voltage of Commutation Diode	$V_F^*$	$I_F = -I_C=10A, I_B=0$	-	6.0	V

\* Pulse Test: Pulse Width  $\leq 300\mu s$ , Duty Cycle  $\leq 2\%$

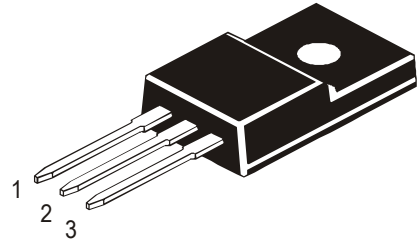
NPN PNP  
 CJF100 CJF105  
 CJF101 CJF106  
 CJF102 CJF107

### TO-220FP Fully Isolated Plastic Package



DIM	MIN	MAX
A	9.96	10.36
B	2.60	3.00
C	4.50	4.90
D	3.10	3.30
E	7.90	8.20
F	16.87	17.27
G	0.45	0.50
H	2.56	2.96
J	2.34	2.74
K	—	3.08
L	—	30.05
M	—	0.80

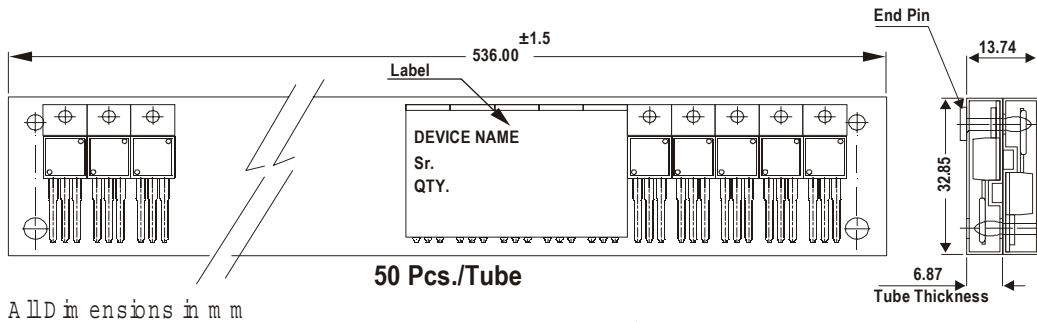
All dimensions in mm.



Pin Configuration

1. Base
2. Collector
3. Emitter

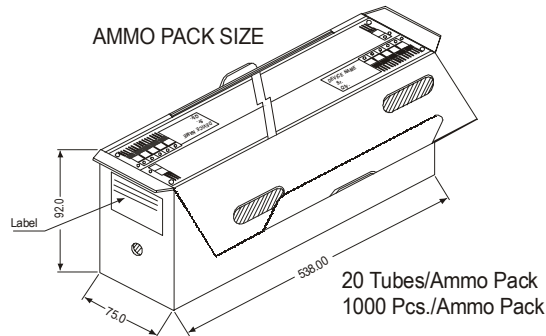
### TO-220 FP Tube Packing



All dimensions in mm

50 Pcs./Tube

AMMO PACK SIZE



20 Tubes/Ammo Pack  
 1000 Pcs./Ammo Pack

### Packing Detail

PACKAGE	STANDARD PACK		INNER CARTON BOX		OUTER CARTON BOX		
	Details	Net Weight/Qty	Size	Qty	Size	Qty	Gr Wt
TO-220FP	200 pcs/polybag	396 gm/200 pcs	3" x 7.5" x 7.5"	1K	17" x 15" x 13.5"	16K	36 kgs
	50 pcs/tube	135 gm/50 pcs	3.5" x 3.7" x 21.5"	1K	19" x 19" x 19"	10K	28 kgs

### **Disclaimer**

The product information and the selection guides facilitate selection of the CDIL's Discrete Semiconductor Device(s) best suited for application in your product(s) as per your requirement. It is recommended that you completely review our Data Sheet(s) so as to confirm that the Device(s) meet functionality parameters for your application. The information furnished in the Data Sheet and on the CDIL Web Site/CD is believed to be accurate and reliable. CDIL however, does not assume responsibility for inaccuracies or incomplete information. Furthermore, CDIL does not assume liability whatsoever, arising out of the application or use of any CDIL product; neither does it convey any license under its patent rights nor rights of others. These products are not designed for use in life saving/support appliances or systems. CDIL customers selling these products (either as individual Discrete Semiconductor Devices or incorporated in their end products), in any life saving/support appliances or systems or applications do so at their own risk and CDIL will not be responsible for any damages resulting from such sale(s).

CDIL strives for continuous improvement and reserves the right to change the specifications of its products without prior notice.



CDIL is a registered Trademark of

**Continental Device India Limited**

C-120 Naraina Industrial Area, New Delhi 110 028, India.

Telephone + 91-11-2579 6150, 5141 1112 Fax + 91-11-2579 5290, 5141 1119

email@cdil.com www.cdilsemi.com