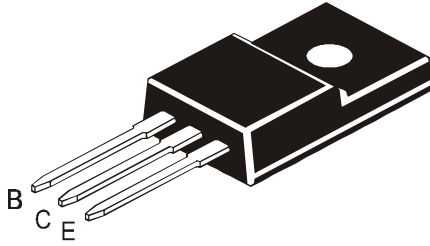


## SILICON PLANAR POWER TRANSISTORS

CJF15028 NPN  
CJF15029 PNP



TO-220FP Fully Isolated  
Plastic Package

Designed for General Purpose Amplifier and Switching Applications

### ABSOLUTE MAXIMUM RATINGS

DESCRIPTION	SYMBOL	VALUE	UNIT
Collector Base Voltage	$V_{CBO}$	120	V
Collector Emitter Voltage	$V_{CEO}$	120	V
Emitter Base Voltage	$V_{EBO}$	5	V
RMS Isolation Voltage (for 1sec, R.H. <30%, $T_a = 25^\circ\text{C}$ )	* $V_{ISOL}$ (a)	3500	$V_{RMS}$
	(b)	1500	$V_{RMS}$
Collector Current - Continuous	$I_C$	8	A
Collector Current - Peak	$I_C$	16	A
Base Current	$I_B$	2	A
Total Power Dissipation @ $T_c=25^\circ\text{C}$	$P_D^{**}$	36	W
Derate Above $25^\circ\text{C}$		0.29	W/ $^\circ\text{C}$
Total Power Dissipation @ $T_a=25^\circ\text{C}$	$P_D$	2	W
Derate Above $25^\circ\text{C}$		0.016	W/ $^\circ\text{C}$
Operating And Storage Junction Temperature Range	$T_j, T_{stg}$	- 65 to +150	$^\circ\text{C}$

### THERMAL RESISTANCE

From Junction to Ambient	$R_{th(j-a)}$	62.5	$^\circ\text{C/W}$
From Junction to Case	$R_{th(j-c)}^{**}$	3.5	$^\circ\text{C/W}$
Lead Temperature for Soldering Purpose	$T_L$	260	$^\circ\text{C}$

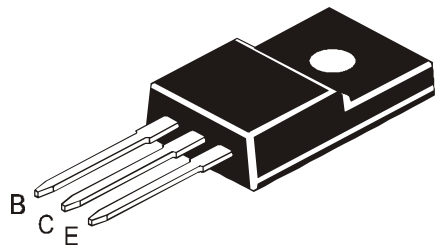
\*\*Measurement made with thermocouple contacting the bottom insulated mounting surface (in a location beneath the die), the device mounted on a heatsink with thermal grease and a mounting torque of  $\geq 6$  in.lbs.

\* 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%,  $T_a=25^\circ\text{C}$ ; Pulse Test: Pulse Width  $\leq 300\mu\text{s}$ , Duty Cycle  $\leq 2\%$ )

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

DESCRIPTION	SYMBOL	TEST CONDITION	MIN	MAX	UNIT
Collector Emitter Sustaining Voltage	* $V_{CEO(SUS)}$	$I_C=10\text{mA}, I_B=0$	120		V
Collector Cut Off Current	$I_{CBO}$	$V_{CB}=120\text{V}, I_E=0$		10	$\mu\text{A}$
Collector Cut Off Current	$I_{CEO}$	$V_{CE}=120\text{V}, I_B=0$		10	$\mu\text{A}$
Emitter Cut Off Current	$I_{EBO}$	$V_{EB}=5\text{V}, I_C=0$		10	$\mu\text{A}$
DC Current Gain	* $h_{FE}$	$I_C=0.1\text{A}, V_{CE}=2\text{V}$	40		
		$I_C=2.0\text{A}, V_{CE}=2\text{V}$	40		
		$I_C=3.0\text{A}, V_{CE}=2\text{V}$	40		
		$I_C=4.0\text{A}, V_{CE}=2\text{V}$	20		

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

TO-220FP Fully Isolated  
Plastic PackageELECTRICAL CHARACTERISTICS ( $T_c=25^\circ\text{C}$  unless specified otherwise)

DESCRIPTION	SYMBOL	TEST CONDITION	MIN	MAX	UNIT
Collector Emitter Saturation Voltage	$*V_{CE(sat)}$	$I_C=1\text{A}, I_B=0.1\text{A}$		0.5	V
Base Emitter On Voltage	$V_{BE(on)}^*$	$I_C=1.0\text{A}, V_{CE}=2\text{V}$		1.0	V

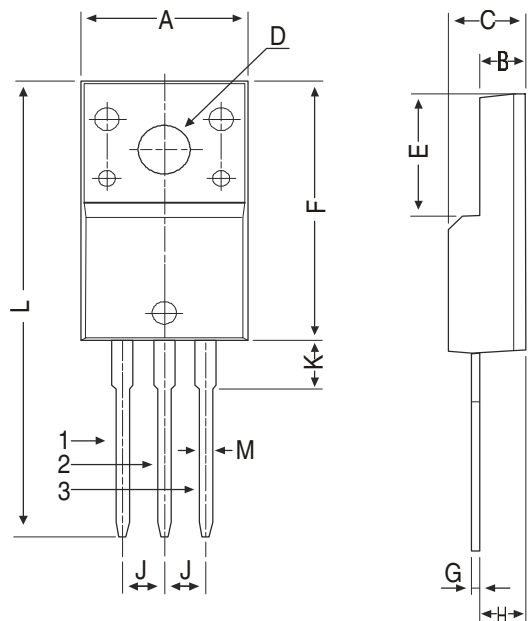
## DYNAMIC CHARACTERISTICS

**Current Gain - Bandwidth Product	$f_T$	$I_C=500\text{mA}, V_{CE}=10\text{V}$ $f_{test}=10\text{MHz}$	30		MHz
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\* Pulse Test: Pulse Width  $\leq 300\mu\text{s}$ , Duty Cycle  $\leq 2\%$ \*\*  $f_T = |h_{fe}| f_{test}$

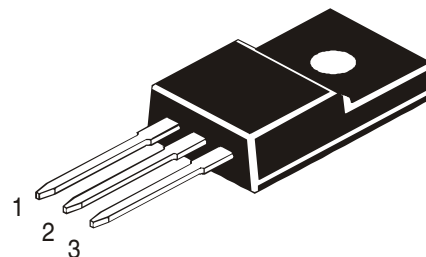
**TO-220FP Fully Isolated Plastic Package**

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



DIM	MIN	MAX
A	9.80	10.36
B	2.50	3.00
C	4.30	4.90
D	3.10	3.40
E	6.50	8.20
F	14.80	17.27
G	0.40	0.70
H	2.50	2.96
J	2.34	2.74
K	—	4.70
L	—	30.05
M	0.6	0.90

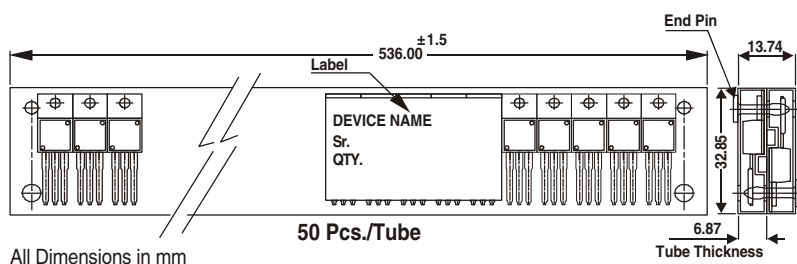
All dimensions in mm.



Pin Configuration

1. Base
2. Collector
3. Emitter

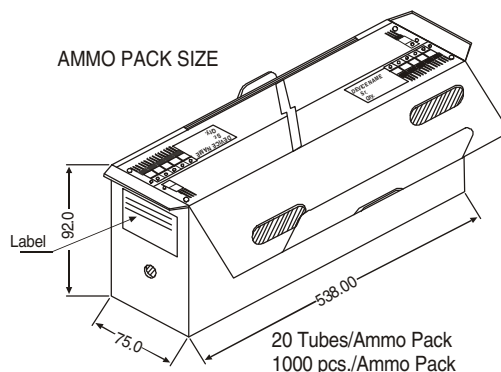
**TO-220 FP Tube Packing**



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

**Component Disposal Instructions**

1. CDIL Semiconductor Devices are RoHS compliant, customers are requested to please dispose as per prevailing Environmental Legislation of their Country.
2. In Europe, please dispose as per EU Directive 2002/96/EC on Waste Electrical and Electronic Equipment (WEEE).

**Disclaimer**

The product information and the selection guides facilitate selection of the CDIL's 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 are 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 Semiconductor Devices or incorporated in their end products), in any life saving/support appliances or systems applications do so at their own risk and CDIL will not be responsible for any damages resulting from such sale(s).

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