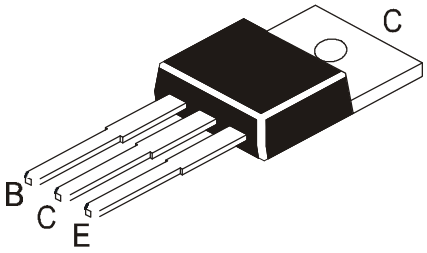
NPN PLASTIC POWER TRANSISTOR

CDL13005

TO-220
Plastic Package



Used in Energy Saving Lights and Power Switch Circuits

ABSOLUTE MAXIMUM RATINGS

DESCRIPTION	SYMBOL	VALUE	UNIT
Collector Base Voltage	V_{CBO}	700	V
Collector Emitter Voltage	V_{CEO}	400	V
Emitter Base Voltage	V_{EBO}	9	V
Collector Current Continuous	I_C	4	A
Power Dissipation upto T_a=25ºC	P_D	2	W
Power Dissipation upto T_c=25ºC	P_D	75	W
Operating And Storage Junction Temperature Range	T_j, T_{stg}	- 55 to +150	ºC

ELECTRICAL CHARACTERISTICS (T_c=25ºC unless specified otherwise)

DESCRIPTION	SYMBOL	TEST CONDITION	MIN	TYP	MAX	UNIT
Collector Cut Off Current	I_{CBO}	V_{CB}=700V, I_E=0			0.1	mA
Emitter Cut Off Current	I_{EBO}	V_{EB}=9V, I_C=0			0.1	mA
DC Current Gain	*h_{FE}	I_C=1A, V_{CE}=5V	10		50	
Ratio Between h_{FE1} of Low Current and h_{FE2} of high Current	h_{FE1}/h_{FE2}	h_{FE1} I_C=5mA, V_{CE}=5V h_{FE2} I_C=1A, V_{CE}=5V	0.75			
Collector Emitter Saturation Voltage	*$V_{CE\ (sat)}$	I_C=2A, I_B=0.5A			0.6	V
Base Emitter Saturation Voltage	*$V_{BE\ (sat)}$	I_C=2A, I_B=0.5A			1.5	V
Transition Frequency	f_T	V_{CE}=10V, I_C=500mA, f=1MHz	5			MHz

Switching Time

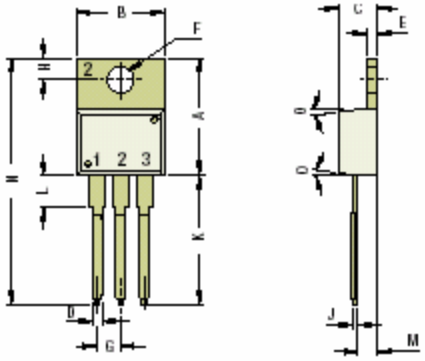
DESCRIPTION	SYMBOL	TEST CONDITION	MIN	TYP	MAX	UNIT
Fall Time	t_f	I_C=2A, I_{B1}= -1$_{B2}$=0.4A			0.8	µs
Storage Time	t_s	V_{CC}=120V			3.6	µs

*h_{FE} Classification	A : 10 - 21	B : 20 - 31	C : 30 - 41	E : 40 - 50
Marking	CDL 13005 A XX	CDL 13005 B XX	CDL 13005 C XX	CDL 13005 E XX
Product is pre-selected in DC Current Gain (Groups A to E). CDIL reserves the right to ship any of the group(s) to customers depending on production availability.				
XX=date code				

***Pulse Test $t_p \leq$ 300ms, Duty Cycle $\leq$ 2%**

CDL13005Rev_3 020304E

TO-220
Leaded Plastic Package



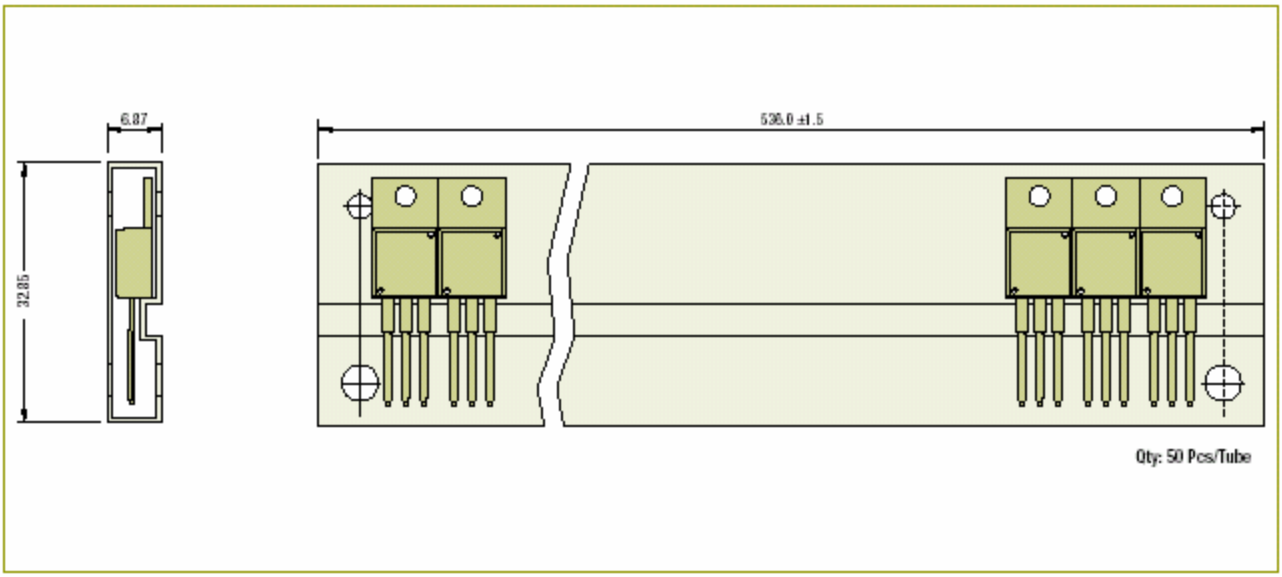
DIM	Min	Max
A	14.42	16.51
B	9.63	10.67
C	3.56	4.83
D	—	0.90
E	1.15	1.50
F	3.53	4.10
G	2.29	2.79

DIM	Min	Max
H	2.54	3.43
J	0.36	0.61
K	12.00	14.73
L	2.80	6.35
M	2.00	2.92
N	—	31.24
O	7°	

Pin Configurations

Transistors Pin 1: Base Pin 2: Collector Pin 3: Emitter

TO-220 Series Packaging Tube



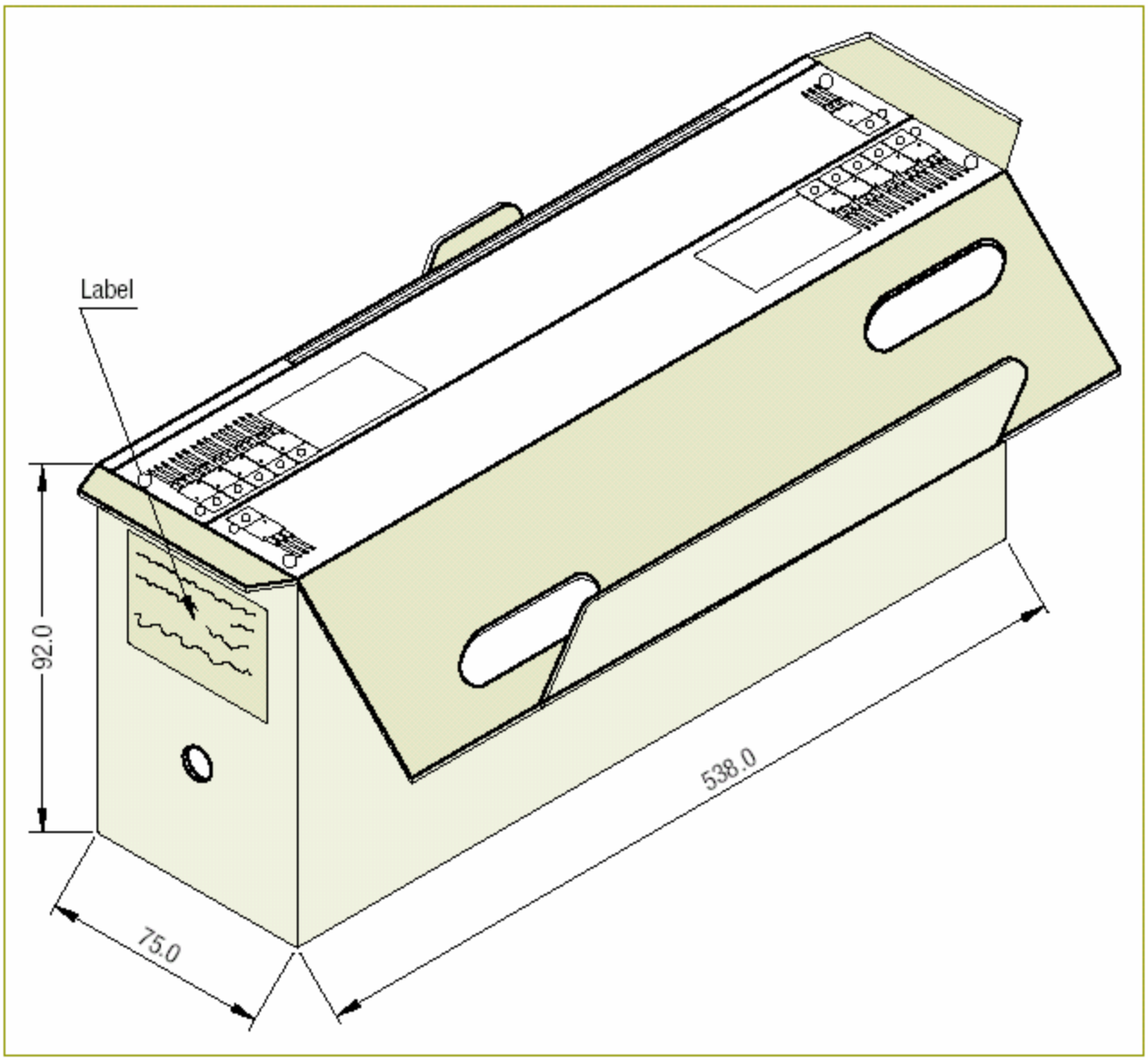
Packaging dimensions, tube dimensions and quantity/tube are approximate and subject to change.

… Packaging Specifications

T & A: Tape and Ammo Pack; **T & R:** Tape and Reel; **Bulk:** Loose in Poly Bags; **Tube:** Tube and Carton; **K:** 1,000

Package / Case Type	Packaging Type	Std. Packing	Inner Carton			Outer Carton		
		Qty	Qty	Size L x W x H (cm)	Gross Weight (Kg)	Qty	Size L x W x H (cm)	Gross Weight (Kg)
TO-220	Bulk	1,000	1K	19 x 19 x 8	2.0	10K	46 x 38 x 22	21.6
	Tube	1,000 (50 pcs/tube)	1K	55 x 8 x 10	2.8	10K	55 x 35 x 27	28.3

Packaging for Tubes



Packaging dimensions/carton dimensions are approximate. Illustration shows packaging box for TO-220 Series.
For dimensions of other tube packaging, please refer to Packaging Specifications page.

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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