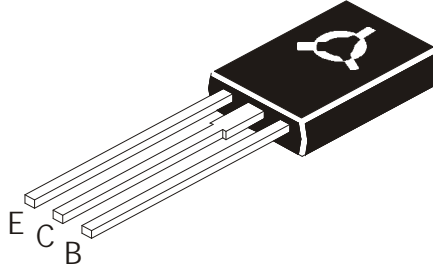


CRD13003BC (9AC) (Tin Finish Part) **LEAD FREE**

TO-126
Plastic Package

NPN SILICON POWER TRANSISTOR



Applications

Suitable for Lighting, Switching Regulator and Motor Control

ABSOLUTE MAXIMUM RATINGS

DESCRIPTION	SYMBOL	VALUE	UNIT
Collector Base Voltage	V_{CBO}	700	V
Collector Emitter (sus) Voltage	V_{CEO}	400	V
Emitter Base Voltage	V_{EBO}	9.0	V
Collector Current Continuous	I_C	1.5	A
Peak	$*I_{CM}$	3.0	A
Base Current Continuous	I_B	0.75	A
Peak	$*I_{BM}$	1.5	A
Emitter Current Continuous	I_E	2.25	A
Peak	$*I_{EM}$	4.5	A
Power Dissipation at $T_a=25^\circ\text{C}$	P_D	1.4	W
Derate Above 25°C		11.2	mW/ $^\circ\text{C}$
Power Dissipation at $T_c=25^\circ\text{C}$	P_D	45	W
Derate Above 25°C		360	mW/ $^\circ\text{C}$
Operating And Storage Junction Temperature Range	T_j, T_{stg}	- 65 to +150	$^\circ\text{C}$

THERMAL RESISTANCE

Junction to Case	$R_{th(j-c)}$	2.77	$^\circ\text{C/W}$
Junction to Ambient	$R_{th(j-a)}$	89	$^\circ\text{C/W}$
Maximum Lead Temperature for Soldering Purpose: 1/8" from Case for 5 Seconds	T_L	275	$^\circ\text{C}$

*Pulse Test: Pulse Width=5ms, Duty Cycle=10%



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ELECTRICAL CHARACTERISTICS (T_a=25°C unless specified otherwise)

DESCRIPTION	SYMBOL	TEST CONDITION	MIN	TYP	MAX	UNIT
Collector Base Voltage	V _{CBO}	I _C =1mA, I _E =0	700	-	-	V
Collector Emitter (sus) Voltage	**V _{CEO (sus)}	I _C =10mA, I _B =0	400	-	-	V
Collector Cut Off Current	I _{CBO}	V _{CB} =700V, I _E =0	-	-	1.0	mA
		V _{CB} =700V, I _E =0, T _c =100°C	-	-	5.0	mA
Emitter Cut Off Current	I _{EBO}	V _{EB} =9V, I _C =0	-	-	1.0	mA
DC Current Gain	**h _{FE}	I _C =0.5A, V _{CE} =5V	15	-	22	
		I _C =2A, V _{CE} =5V	4.0	-	25	
Collector Emitter Saturation Voltage	**V _{CE (sat)}	I _C =0.5A, I _B =0.1A	-	-	0.5	V
		I _C =1A, I _B =0.25A	-	-	1.0	V
		I _C =1.5A, I _B =0.5A	-	-	2.5	V
		I _C =1A, I _B =0.25A, T _c =100°C	-	-	1.0	V
Base Emitter Saturation Voltage	**V _{BE (sat)}	I _C =0.5A, I _B =0.1A	-	-	1.0	V
		I _C =1A, I _B =0.25A	-	-	1.2	V
		I _C =1A, I _B =0.25A, T _c =100°C	-	-	1.1	V

DYNAMIC CHARACTERISTICS

DESCRIPTION	SYMBOL	TEST CONDITION	MIN	TYP	MAX	UNIT
Current Gain Bandwidth Product	f _T	I _C =100mA, V _{CE} =10V, f=1MHz	4.0	-	-	MHz
Output Capacitance	C _{ob}	V _{CB} =10V, f=0.1MHz	-	21	-	pF

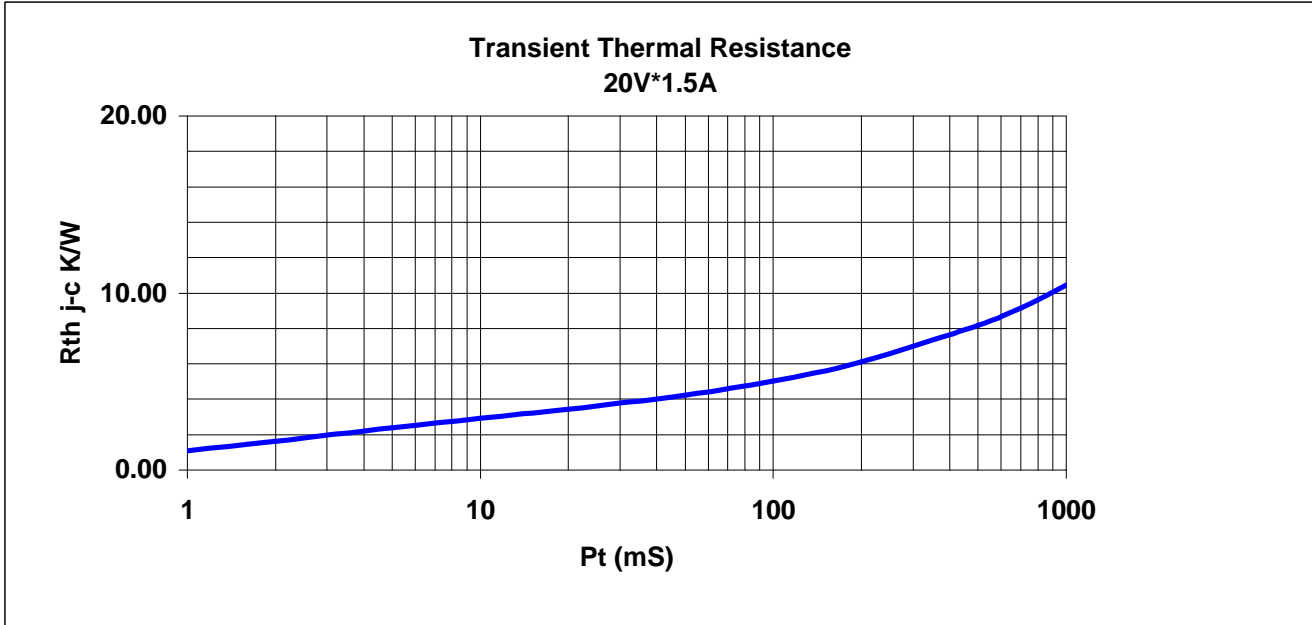
SWITCHING TIME

DESCRIPTION	SYMBOL	TEST CONDITION	MIN	TYP	MAX	UNIT
Turn on Time	t _{on}	V _{CC} =125V	-	-	1.1	μs
Fall Time	t _f	I _{B1} =0.2A, I _{B2} =0.2A	-	-	0.7	μs
Storage Time	t _{stg}	I _C =1A	-	-	4.0	μs

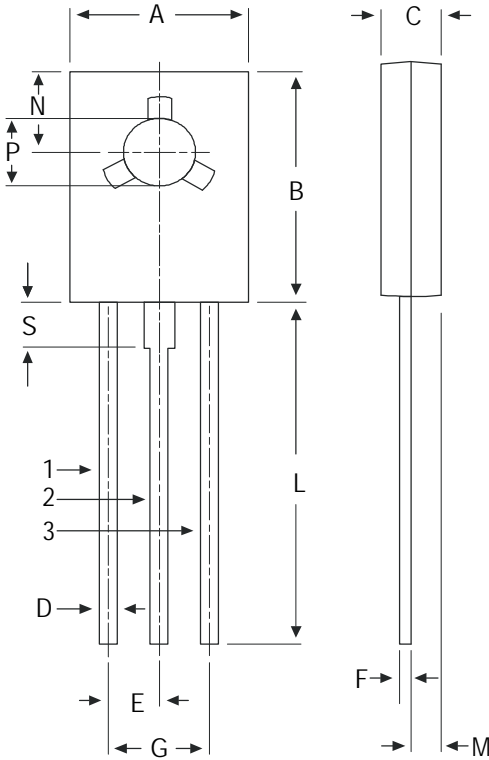
For Lead Free Lead Finish	
MARKING	CRD1 3003 BC PXY Y
C = CDIL Logo P = Plant Code, N for Delhi X = Year of Manufacturer YY = Week Code	'T' stands for Tin finish leads

**Pulse Test:- PW=300ms, Duty Cycle=2%

CRD13003BC

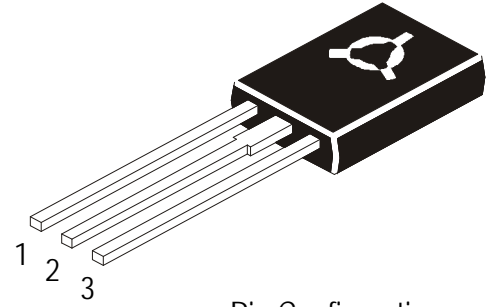


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DIM	MIN	MAX
A	7.4	7.8
B	10.5	10.8
C	2.4	2.7
D	0.7	0.9
E	2.25 TYP.	
F	0.49	0.75
G	4.5 TYP.	
L	15.7 TYP.	
M	1.27 TYP.	
N	3.75 TYP.	
P	3.0	3.2
S	2.5 TYP.	

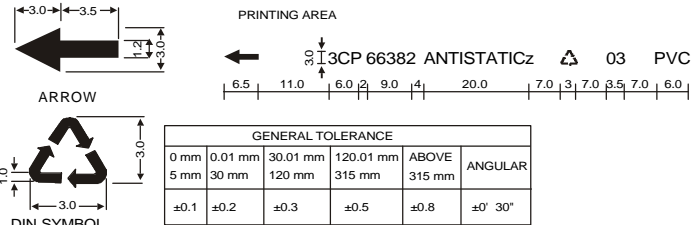
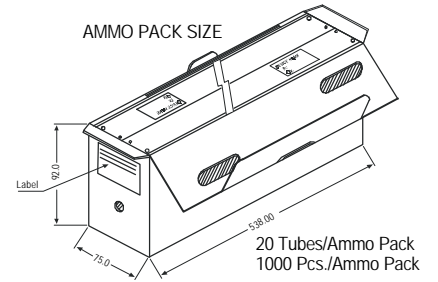
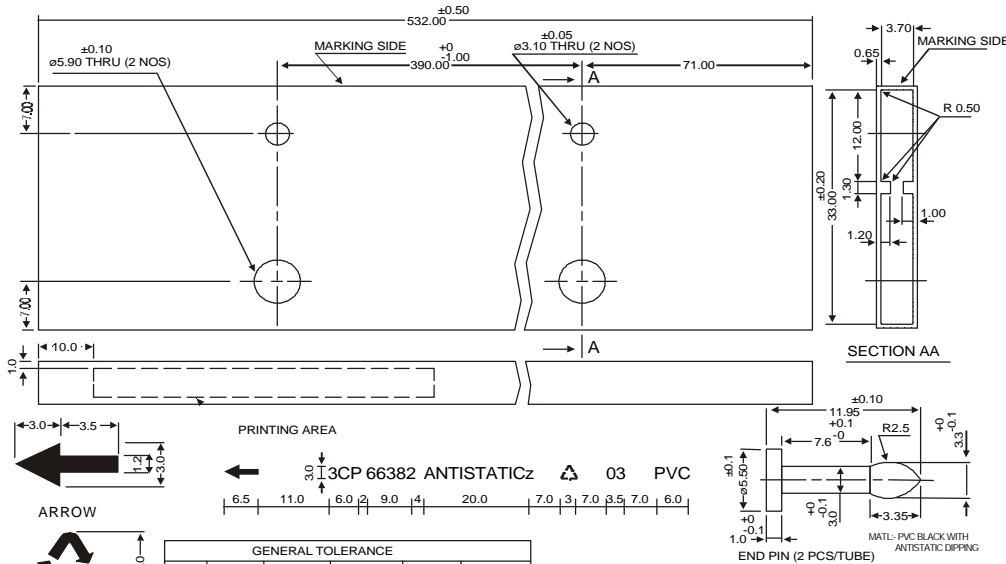
All dimensions in mm.



Pin Configuration

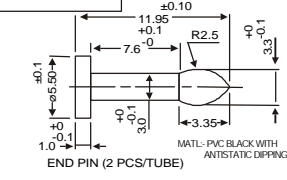
1. Emitter
2. Collector
3. Base

TO-126 TUBE PACKING



GENERAL TOLERANCE					
0 mm	0.01 mm	30.01 mm	120.01 mm	ABOVE 315 mm	ANGULAR
5 mm	30 mm	120 mm	315 mm		
±0.1	±0.2	±0.3	±0.5	±0.8	±0' 30"

All dimensions in mm



- Notes:**
1. All print in black.
 2. All text in Helvetia medium font.

Packing Detail

PACKAGE	STANDARD PACK		INNER CARTON BOX		OUTER CARTON BOX		
	Details	Net Weight/Qty	Size	Qty	Size	Qty	Gr Wt
TO-126 Bulk	500 pcs/polybag	340 gm/500 pcs	3" x 7.5" x 7.5"	2K	17" x 15" x 13.5"	32K	31 kgs
TO-126 Tube	50 pcs/tube	73 gm/50 pcs	3" x 3.7" x 21.5"	1K	19" x 19" x 19"	10K	15 kgs