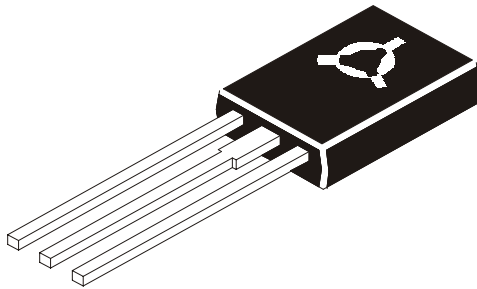


**NPN SILICON POWER TRANSISTOR**

**CD13003  
TO-126**



**MARKING: CD  
13003**

**Applications.**  
Suitable for Lighting, Switching Regulator and Motor Control.

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**ABSOLUTE MAXIMUM RATINGS**

DESCRIPTION	SYMBOL	VALUE	UNIT
Collector -Base Voltage	VCBO	600	V
Collector -Emitter ( sus) Voltage	VCEO	400	V
Emitter -Base Voltage	VEBO	9.0	V
Collector Current Continuous	IC	1.5	A
Peak (1)	ICM	3.0	A
Base Current Continuous	IB	0.75	A
Peak (1)	IBM	1.5	A
Emitter Current Continuous	IE	2.25	A
Peak (1)	IEM	4.5	A
Power Dissipation @ Ta=25 deg C	PD	1.4	W
Derate Above 25 deg C		11.2	mW /deg C
Power Dissipation @ Tc=25 deg C	PD	45	W
Derate Above 25 deg C		320	mW /deg C
Operating And Storage Junction Temperature Range	Tj, Tstg	-65 to +150	deg C
<b>THERMAL RESISTANCE</b>			
Junction to Case	Rth (j-c)	3.12	deg C/W
Junction to Ambient	Rth (j-a)	89	deg C/W
Maximum Lead Temperature for Soldering Purposes: 1/8" from Case for 5 Seconds.	TL	275	deg C

(1) Pulse Test: Pulse Width= 5ms Duty Cycle =10%

**ELECTRICAL CHARACTERISTICS (Ta=25 deg C Unless Otherwise Specified)**

DESCRIPTION	SYMBOL	TEST CONDITION	MIN	TYP	MAX	UNIT
Collector -Base Voltage	VCBO	IC=1mA, IE=0	600	-	-	V
Collector -Emitter ( sus) Voltage	VCEO(sus)*	IC=10mA, IB=0	400	-	-	V
Collector-Cutoff Current	ICBO	VCB=600V, IE=0	-	-	1.0	mA
		VCB=600V, IE=0, TC=100 deg C	-	-	5.0	mA
Emitter-Cutoff Current	IEBO	VEB=9V, IC=0	-	-	1.0	mA
DC Current Gain	hFE*	IC=0.5A, VCE=5V	8.0	-	40	
		IC=2A, VCE=5V	5.0	-	25	

**ELECTRICAL CHARACTERISTICS (Ta=25 deg C Unless Otherwise Specified)**

**CD13003**

DESCRIPTION	SYMBOL	TEST CONDITION	MIN	TYP	MAX	UNIT
Collector Emitter Saturation Voltage	VCE(Sat) *	IC=0.5A, IB=0.1A	-	-	0.50	V
		IC=1A, IB=0.25A	-	-	1.0	V
		IC=1.5A, IB=0.5A	-	-	2.5	V
		IC=1A, IB=0.25A, TC=100deg C	-	-	1.0	V
Base Emitter Saturation Voltage	VBE(Sat) *	IC=0.5A, IB=0.1A	-	-	1.0	V
		IC=1A, IB=0.25A	-	-	1.2	V
		IC=1A, IB=0.25A, TC=100deg C	-	-	1.1	V

**DYNAMIC CHARACTERISTICS**

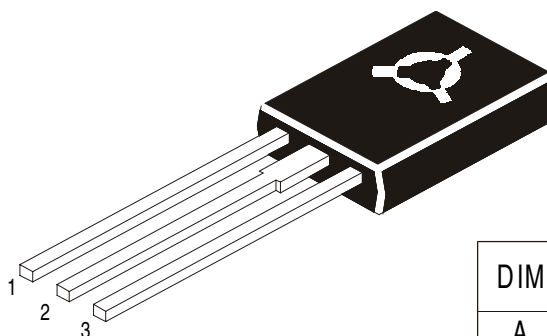
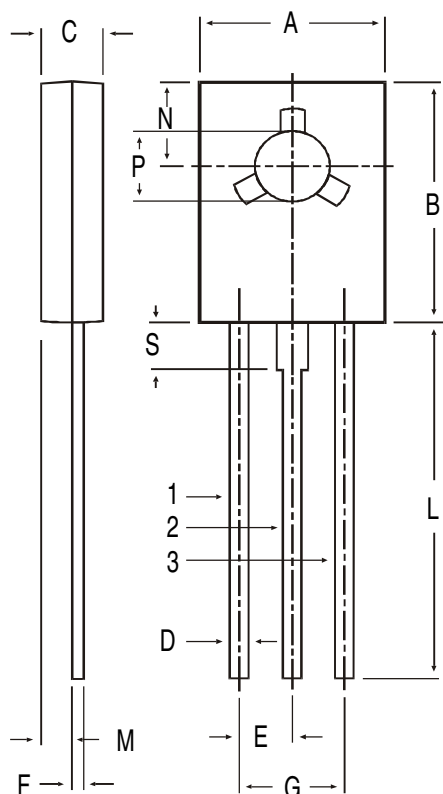
Current Gain- Bandwidth Product	ft	IC=100mA, VCE=10V f=1MHz	4.0	-	-	MHz
Output Capacitance	Cob	VCB=10V, f=0.1MHz	-	21	-	pF

**SWITCHING CHARACTERISTICS**

Turn on Time	ton	VCC=125V	-	-	1.1	us
Storage Time	tstg	IC=1A	-	-	4.0	us
Fall Time	tf	IB1=0.2A, IB2=0.2A	-	-	0.7	us

\*Pulse Test : PW=300us, Duty Cycle=2%

**TO-126 (SOT-32) Plastic Package**



**PIN CONFIGURATION**

1. EMITTER
2. COLLECTOR
3. BASE

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.

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**Packing Detail**

PACKAGE	STANDARD PACK		INNER CARTON BOX		OUTER CARTON BOX		
	Details	Net Weight/Qty	Size	Qty	Size	Qty	Gr Wt
TO-126	500 pcs/polybag	340 gm/500 pcs	3" x 7.5" x 7.5"	2.0K	17" x 15" x 13.5"	32.0K	31 kgs

## Notes

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## Disclaimer

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