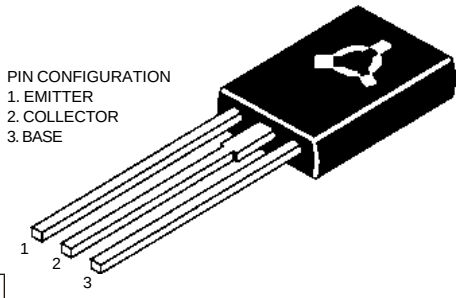
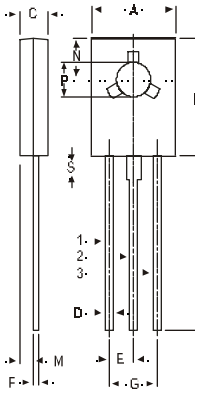
TO-126 (SOT-32) Plastic Package **C42C2**

C42C2 NPN PLASTIC POWER TRANSISTOR

Complementary C43C series
General Purpose Applications





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

ABSOLUTE MAXIMUM RATINGS

Collector-emitter voltage (V_{BE}=0)	V_{CES}	*max.*	*40 V*
Collector-emitter voltage (open base)	V_{CEO}	*max.*	*30 V*
Collector current	I_C	*max.*	*3 A*
Total power dissipation up to T_C = 25°C	P_{tot}	*max.*	*12.5 W*
Junction temperature	T_j	*max.*	*150 °C*
Collector-emitter saturation voltage			
I_C = 1 A; I_B = 50 mA	V_{CEsat}	*max.*	*0.5 V*
D.C. current gain			
I_C = 200 mA; V_{CE} = 1 V	h_{FE}	*min.*	*100*
		max.	*220*

RATINGS *(at T_A=25°C unless otherwise specified)*

Limiting values			
Collector-emitter voltage (V_{BE}=0)	V_{CES}	*max.*	*40 V*
Collector-emitter voltage (open base)	V_{CEO}	*max.*	*30 V*
Emitter-base voltage (open collector)	V_{EBO}	*max.*	*5.0 V*
Collector current (DC)	I_C	*max.*	*3.0 A*

*Collector current (Peak)**	I_{CM}	*max.*	*5 A*
Base current	I_B	*max.*	*2 A*
Total power dissipation up to T_A = 25°C	P_{tot}	*max.*	*2.1 W*
Total power dissipation up to T_C = 25°C	P_{tot}	*max.*	*12.5 W*
Junction temperature	T_j	*max.*	*150 °C*
Storage temperature	T_{stg}	*–65 to +150*	*°C*

THERMAL RESISTANCE

From junction to case	$R_{th\ j-c}$	=	*10 °C/W*
From junction to ambient	$R_{th\ j-a}$	=	*60 °C/W*

CHARACTERISTICS

T_c = 25°C unless otherwise specified

Collector cutoff current			
V_{BE} = 0; V_{CE} = Rated V_{CES}	I_{CES}	*max.*	*10 µA*
Emitter cut-off current			
I_C = 0; V_{EB} = 5 V	I_{EBO}	*max.*	*100 µA*
Breakdown sus. voltages			
I_C = 100 mA; I_B = 0	$V_{CEO(sus)}$*	*min.*	*30 V*
Saturation voltages			
I_C = 1 A; I_B = 50 mA	V_{CEsat}*	*max.*	*0.5 V*
I_C = 1 A; I_B = 100 mA	V_{BEsat}*	*max.*	*1.3 V*
D.C. current gain			
I_C = 200 mA; V_{CE} = 1 V	h_{FE}*	*min.*	*100*
		max.	*220*
I_C = 2 A; V_{CE} = 1 V	h_{FE}*	*min.*	*20*
Transition frequency			
I_C = 20 mA; V_{CE} = 4 V	f_T	*typ.*	*50 MHz*
Collector capacitance			
V_{CB} = 10 V; I_E = 0; f = 1 MHz	C_{cbo}	*max.*	*100 pF*

Switching time

Delay time + Rise time			
I_C = 1 A; I_{B1} = I_{B2} = 0.1 A	t_d+t_r	*typ.*	*100 ns*

Storage time + Fall time

V_{CC} = 30 V; t_p = 25 µsec	t_s	*typ.*	*500 ns*
	t_f	*typ.*	*75 ns*

** Pulsed test: P_W = 300 ms; duty cycle = 2%.*

Notes

Disclaimer

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