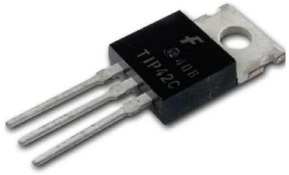
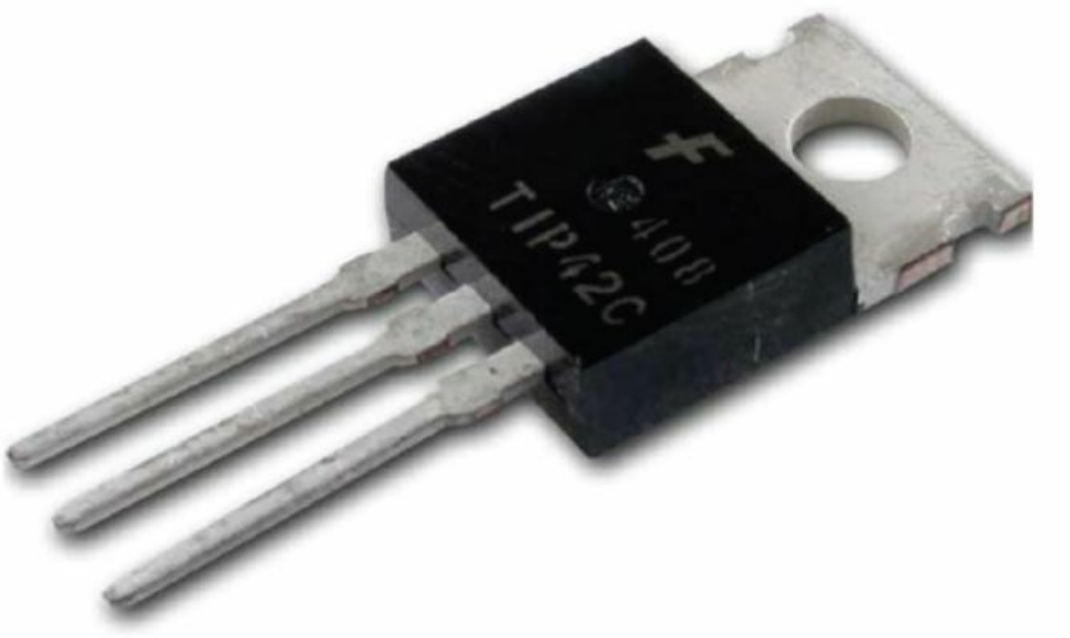


M C C TIP42 PNP Silicon Power Transistors Instructions

Contents

M C C TIP42 PNP Silicon Power Transistors



Product Information

The TIP42, TIP42A, TIP42B, and TIP42C are PNP Silicon Power Transistors. They are RoHS compliant and come in a TO-220 package. The transistors have different voltage ratings and current specifications.

Features

- RoHS Compliant

Parameter

Symbol	Description	Min	Typ	Max	Unit
VCBO	TIP42 Collector-Base Voltage	-40	–	–	V
VCEO	TIP42A Collector-Emitter Voltage	-60	–	–	V
VEBO	TIP42B Emitter-Base Voltage	-80	–	–	V
IC	Continuous Collector Current	-100	–	–	A
IB	Base Current	-10	–	–	A
PD	Collector Power Dissipation	–	–	65	W

Dimensions

DIM	INCHES	MM
A	0.560 – 0.625	14.22 – 15.88
B	0.380 – 0.420	9.65 – 10.67
C	0.140 – 0.190	3.56 – 4.82
D	0.020 – 0.045	0.51 – 1.14
F	0.139 – 0.161	3.53 – 4.09
G	0.090 – 0.110	2.29 – 2.79
H	–	0.250
J	0.012 – 0.025	0.30 – 0.64
K	0.500 – 0.580	12.70 – 14.73
L	0.045 – 0.060	1.14 – 1.52
N	0.190 – 0.210	4.83 – 5.33
Q	0.100 – 0.135	2.54 – 3.43
R	0.080 – 0.115	2.04 – 2.92
S	0.045 – 0.055	1.14 – 1.39
T	0.230 – 0.270	5.84 – 6.86
U	–	0.050
V	0.045	–

Product Usage Instructions

To use the TIP42, TIP42A, TIP42B, and TIP42C transistors, follow these steps:

1. Identify the correct transistor based on the required voltage and current specifications.
2. Ensure that the product is RoHS compliant if required.
3. Handle the transistors with care to avoid damage.
4. Refer to the provided dimensions to understand the physical size of the transistors.
5. Connect the transistor pins according to the pin diagram provided (BASE, COLLECTOR, EMITTER).
6. Ensure the correct polarity and voltage ratings when connecting the transistors in a circuit.
7. Refer to the provided curve characteristics to understand the behavior of the transistors under different conditions.
8. Follow any additional instructions or precautions mentioned in the user manual or datasheet.

If you have any further questions or need assistance, refer to the complete user manual or contact customer support.

Features

- The Complementary NPN Types are the TIP41 Respectively

- Halogen Free Available Upon Request By Adding Suffix “-HF”
- Epoxy Meets UL 94 V-0 Flammability Rating
- Lead Free Finish/RoHS Compliant(Note 1) (“P” Suffix Designates RoHS Compliant. See Ordering Information)

Maximum Ratings

Maximum Ratings @ 25°C Unless Otherwise Specified

- Operating Junction Temperature Range: -65°C to +150°C
- Storage Temperature Range: -65°C to +150°C
- Thermal Resistance: 1.92°C/W Junction to Case
- Thermal Resistance: 62.5°C/W Junction to Ambient

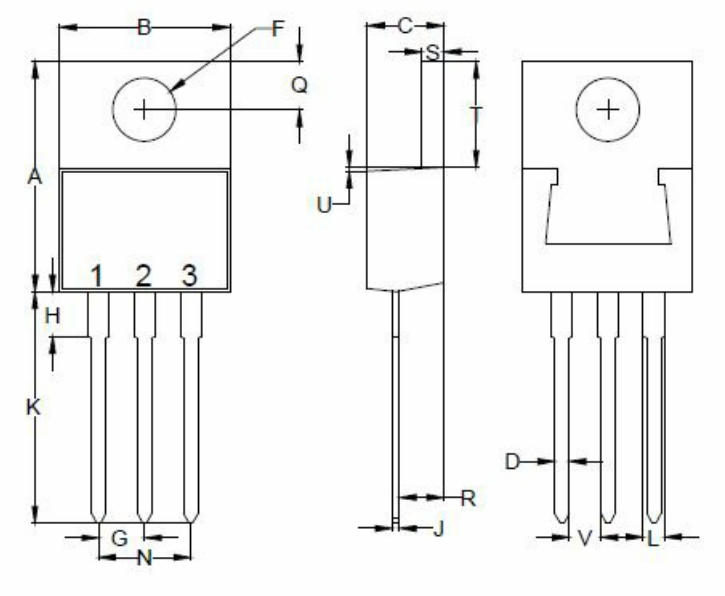
Parameter

Parameter		Symbol	Rating	Unit
Collector-Base Voltage	TIP42	VCBO	-40	V
	TIP42A		-60	
	TIP42B		-80	
	TIP42C		-100	
Collector-Emitter Voltage	TIP42	VCEO	-40	V
	TIP42A		-60	
	TIP42B		-80	
	TIP42C		-100	
Emitter-Base Voltage		VEBO	-5	V
Continuous Collector Current		I_C	-6	A
Peak Collector Current		ICM	-10	A
Base Current		I_B	-2	A
Power Dissipation @T_C=25°C		P_D	65	W
Power Dissipation @T_A=25°C		P_D	2	W

Note: 1.High Temperature Solder Exemption Applied, see EU Directive Annex 7.

DIMENSIONS

TO-220



1. BASE
2. COLLECTOR
3. EMITTER

DIMENSIONS					
DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	0.560	0.625	14.22	15.88	
B	0.380	0.420	9.65	10.67	
C	0.140	0.190	3.56	4.82	
D	0.020	0.045	0.51	1.14	
F	0.139	0.161	3.53	4.09	Φ
G	0.090	0.110	2.29	2.79	
H	——	0.250	——	6.35	
J	0.012	0.025	0.30	0.64	
K	0.500	0.580	12.70	14.73	
L	0.045	0.060	1.14	1.52	
N	0.190	0.210	4.83	5.33	
Q	0.100	0.135	2.54	3.43	
R	0.080	0.115	2.04	2.92	
S	0.045	0.055	1.14	1.39	
T	0.230	0.270	5.84	6.86	
U	——	0.050	——	1.27	
V	0.045	——	1.15	——	

Electrical Characteristics

TA=25°C Unless Otherwise Specified

Parameter		Symbol	Min	Typ	Max	Units	Conditions
Collector-Emitter Breakdown Voltage	TIP42	V(BR)CEO	-40			V	I_C=-30mA, I_B=0
	TIP42A		-60				
	TIP42B		-80				
	TIP42C		-100				
Collector Cutoff Current	TIP42	ICES			-400	μA	V_{CE}=-40V, V_{EB}=0
	TIP42A				-400	μA	V_{CE}=-60V, V_{EB}=0
	TIP42B				-400	μA	V_{CE}=-80V, V_{EB}=0
	TIP42C				-400	μA	V_{CE}=-100V, V_{EB}=0
Collector Cutoff Current	TIP42	ICEO			-700	μA	V_{CE}=-30V, I_B=0
	TIP42A				-700	μA	V_{CE}=-30V, I_B=0
	TIP42B				-700	μA	V_{CE}=-60V, I_B=0
	TIP42C				-700	μA	V_{CE}=-60V, I_B=0
Emitter Cutoff Current		IEBO			-1	mA	V_{EB}=-5V, I_C=0
DC Current Gain		hFE(1)	30				V_{CE}=-4V, I_C=-0.3A
		hFE(2)	15		75		V_{CE}=-4V, I_C=-3A
Collector-Emitter Saturation Voltage		VCE(sat)			-1.5	V	I_C=-6A, I_B=-0.6A
Base-Emitter Voltage		VBE			-2.0	V	V_{CE}=-4V, I_C=-3A
Transition Frequency		f_T	3			MHz	V_{CE}=-10V, I_C=-0.5A

Curve Characteristics

Fig. 1 - Static Characteristics

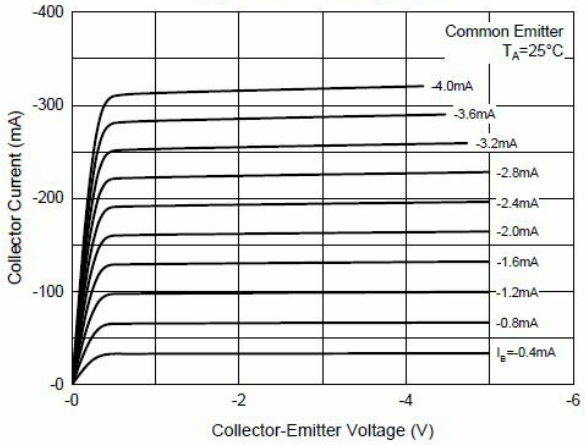


Fig. 2 - DC Current Gain Characteristics

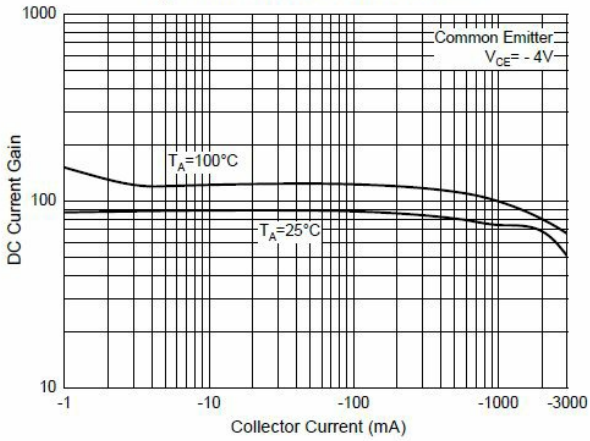


Fig. 3 - Collector-Emitter Saturation Voltage Characteristics

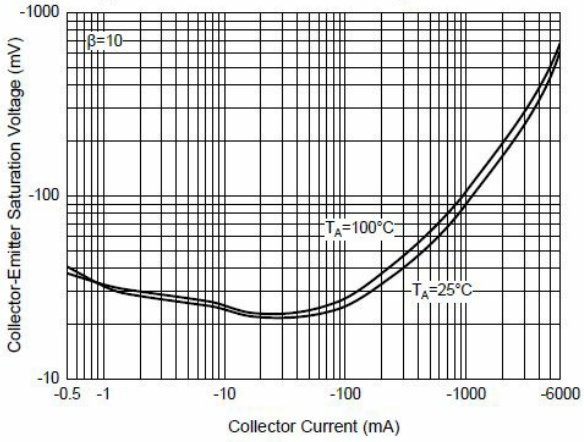


Fig. 4 - Base-Emitter Saturation Voltage Characteristics

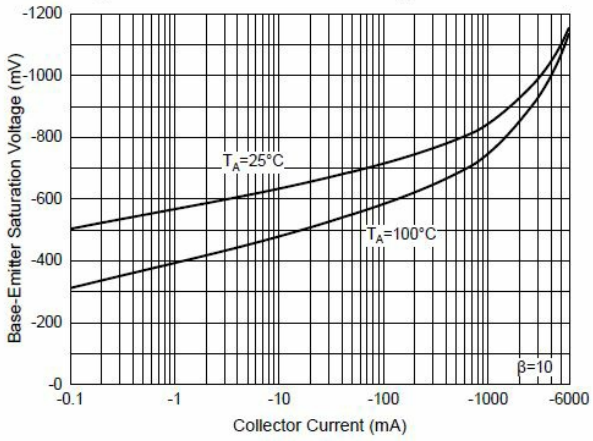


Fig. 5 - Base-Emitter Voltage Characteristics

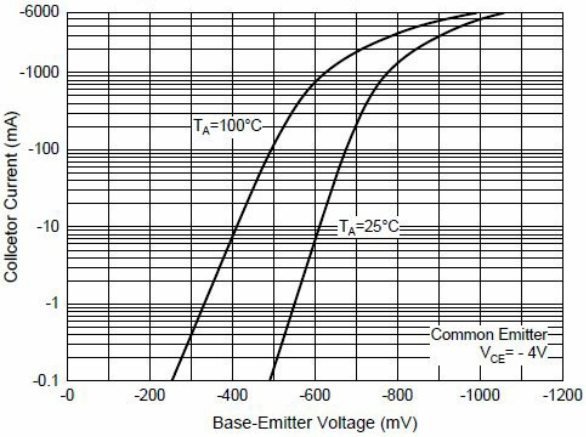
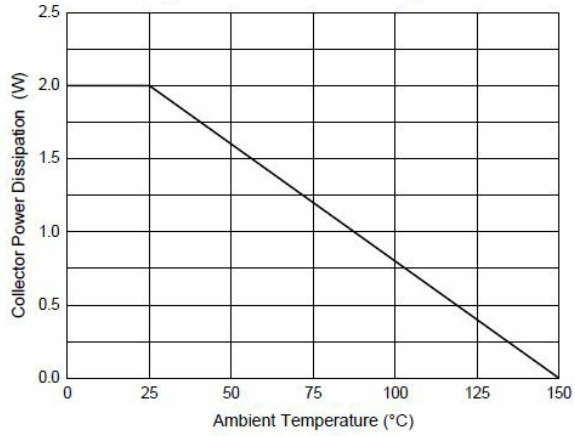


Fig. 6 - Collector Power Derating Curve



Ordering Information

Device	**Packing**
Part Number-BP	Bulk:50pcs/Tube,1Kpcs/Box,5Kpcs/Carton

Note : Adding “-HF” Suffix For Halogen Free, eg. Part Number-BP-HF

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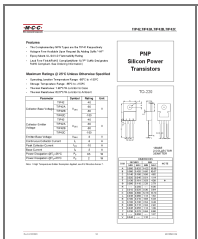
Documents / Resources

	**M C C TIP42 PNP Silicon Power Transistors** [pdf] Instructions TIP42 PNP Silicon Power Transistors, TIP42, PNP Silicon Power Transistors, Silicon Power Transistors, Power Transistors, Transistors