



POWER SKY (H.K.) LTD.

TO-220 Plastic-Encapsulate Transistors

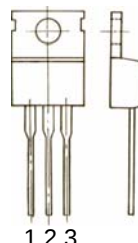
TIP42/42A/42B/42C TRANSISTOR (PNP)

FEATURES

- Medium Power Linear Switching Applications
- Complement to TIP41/41A/41B/41C

TO-220

1. BASE
2. COLLECTOR
3. EMITTER



MAXIMUM RATINGS ($T_A=25^{\circ}\text{C}$ unless otherwise noted)

Symbol	Parameter	TIP42	TIP42A	TIP42B	TIP42C	Units
V_{CBO}	Collector-Base Voltage	-40	-60	-80	-100	V
V_{CEO}	Collector-Emitter Voltage	-40	-60	-80	-100	V
V_{EBO}	Emitter-Base Voltage	-5				V
I_C	Collector Current -Continuous	-6				A
P_C	Collector Power Dissipation	2				W
T_J	Junction Temperature	150				$^{\circ}\text{C}$
T_{stg}	Storage Temperature Range	-55to+150				$^{\circ}\text{C}$

ELECTRICAL CHARACTERISTICS ($T_{amb}=25^{\circ}\text{C}$ unless otherwise specified)

Parameter	Symbol	Test conditions	MIN	MAX	UNIT
Collector-base breakdown voltage TIP42 TIP42A TIP42B TIP42C	$V_{(BR)CBO}$	$I_C = -1\text{mA}, I_E = 0$	-40 -60 -80 -100		V
Collector-emitter breakdown voltage TIP42 TIP42A TIP42B TIP42C	$V_{(BR)CEO}^*$	$I_C = -30\text{mA}, I_B = 0$	-40 -60 -80 -100		V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E = -1\text{mA}, I_C = 0$	-5		V
Collector cut-off current TIP42 TIP42A TIP42B TIP42C	I_{CBO}	$V_{CB} = -40\text{V}, I_E = 0$ $V_{CB} = -60\text{V}, I_E = 0$ $V_{CB} = -80\text{V}, I_E = 0$ $V_{CB} = -100\text{V}, I_E = 0$		-0.4	mA
Collector cut-off current TIP42/42A TIP42B/42C	I_{CEO}	$V_{CE} = -30\text{V}, I_B = 0$ $V_{CE} = -60\text{V}, I_B = 0$		-0.7	mA
Emitter cut-off current	I_{EBO}	$V_{EB} = -5\text{V}, I_C = 0$		-1	mA
DC current gain	$h_{FE(1)}$	$V_{CE} = -4\text{V}, I_C = -0.3\text{A}$	30		
	$h_{FE(2)}$	$V_{CE} = -4\text{V}, I_C = -3\text{A}$	15	75	
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = -6\text{A}, I_B = -0.6\text{A}$		-1.5	V
Base-emitter voltage	V_{BE}	$V_{CE} = -4\text{V}, I_C = -6\text{A}$		-2	V
Transition frequency	f_T	$V_{CE} = -10\text{V}, I_C = -0.5$	3		MHz

Pulse test

Typical Characteristics

TIP42/42A/42B/42C

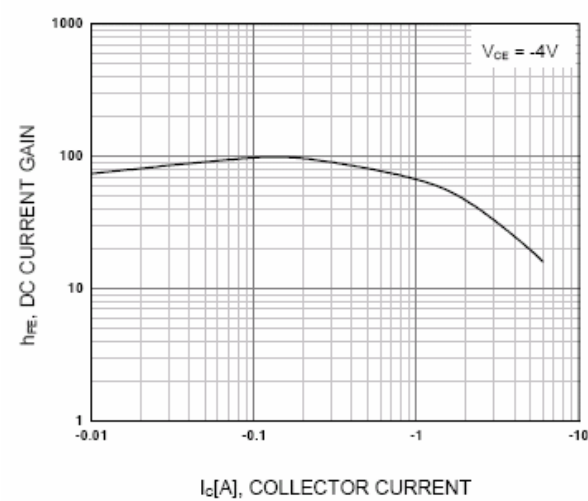


Figure 1. DC current Gain

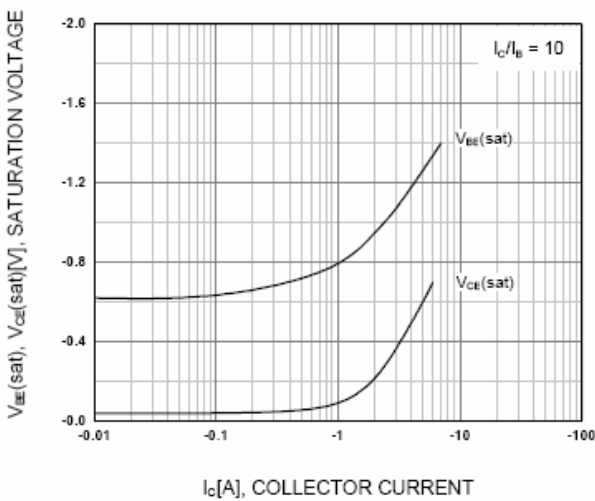


Figure 2. Base-Emitter Saturation Voltage
Collector-Emitter Saturation Voltage

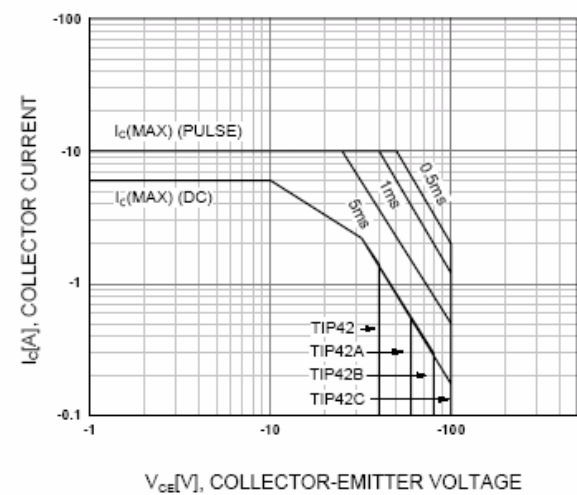


Figure 3. Safe Operating Area

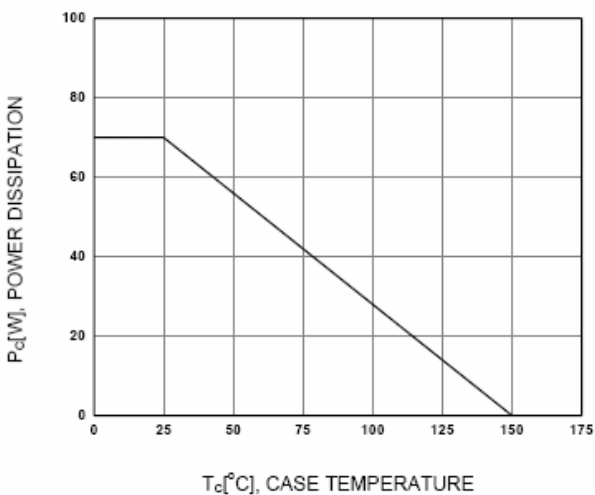


Figure 4. Power derating