



JIANGSU CHANGJIANG ELECTRONICS TECHNOLOGY CO., LTD

TO-220 Plastic-Encapsulate Transistors

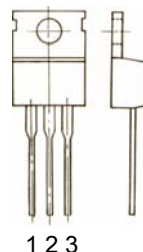
TIP32/32A/32B/32C TRANSISTOR (PNP)

FEATURES

Medium Power Linear Switching Applications

TO-220

1. BASE
2. COLLECTOR
3. EMITTER



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

Symbol	Parameter	TIP32	TIP32A	TIP32B	TIP32C	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	-3				A
P_C	Collector Power Dissipation	2				W
T_j	Junction Temperature	150				$^{\circ}\text{C}$
T_{stg}	Storage Temperature Range	-55to+150				$^{\circ}\text{C}$

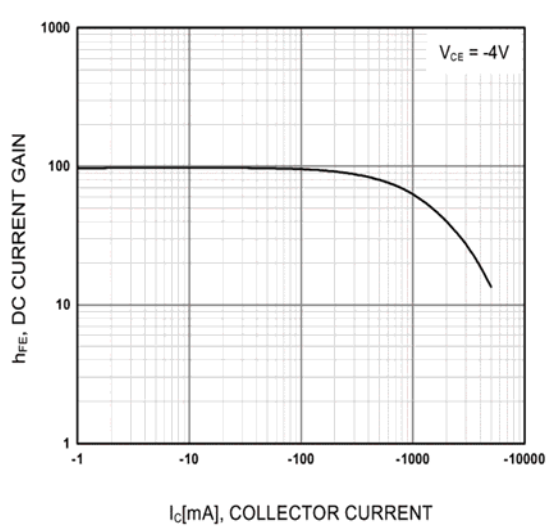
ELECTRICAL CHARACTERISTICS ($T_{amb}=25^{\circ}\text{C}$ unless otherwise specified)

Parameter	Symbol	Test conditions	MIN	MAX	UNIT
Collector-base breakdown voltage TIP32 TIP32A TIP32B TIP32C	$V(BR)_{CBO}$	$I_C = -1\text{mA}, I_E = 0$	-40 -60 -80 -100		V
Collector-emitter breakdown voltage * TIP32 TIP32A TIP32B TIP32C	$V(BR)_{CEO}$	$I_C = -30\text{mA}, I_B = 0$	-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 TIP32 TIP32A TIP32B TIP32C	I_{CBO}	$V_{CB} = -40\text{V}, I_E = 0$ $V_{CB} = -60\text{V}, I_E = 0$ $V_{CB} = -80\text{V}, I_E = 0$ $V_{CB} = -100\text{V}, I_E = 0$		-200	μA
Collector cut-off current TIP32/32A TIP32B/32C	I_{CEO}	$V_{CE} = -30\text{V}, I_B = 0$ $V_{CE} = -60\text{V}, I_B = 0$		-0.3	mA
Emitter cut-off current	I_{EBO}	$V_{EB} = -5\text{V}, I_C = 0$		-1	mA
DC current gain	$h_{FE(1)}$	$V_{CE} = -4\text{V}, I_C = -1\text{A}$	25		
	$h_{FE(2)}$	$V_{CE} = -4\text{V}, I_C = -3\text{A}$	10	50	
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = -3\text{A}, I_B = -0.375\text{A}$		-1.2	V
Base-emitter voltage	$V_{BE(on)}$	$V_{CE} = -4\text{V}, I_C = -3\text{A}$		-1.8	V
Transition frequency	f_T	$V_{CE} = -10\text{V}, I_C = -0.5\text{A}$	3		MHz

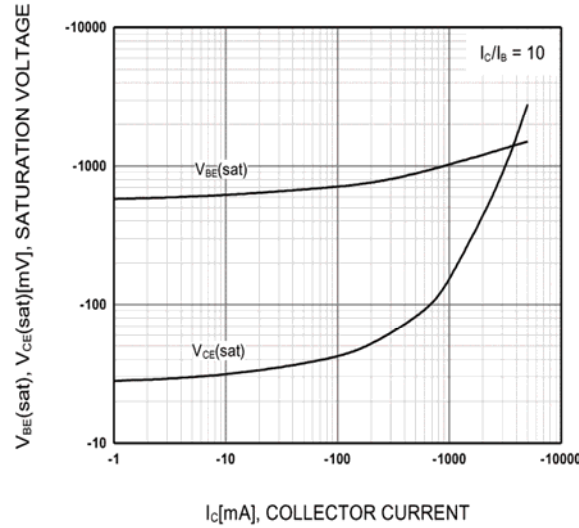
* Pulse Test: $PW \leq 300\mu\text{s}$, Duty Cycle $\leq 2\%$

Typical Characteristics

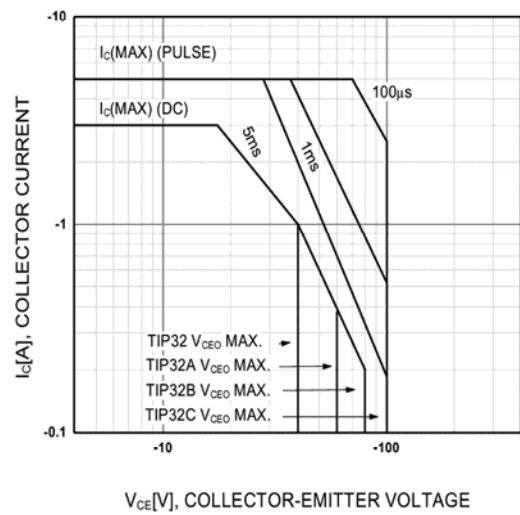
TIP32/TIP32A/TIP32B/TIP32C



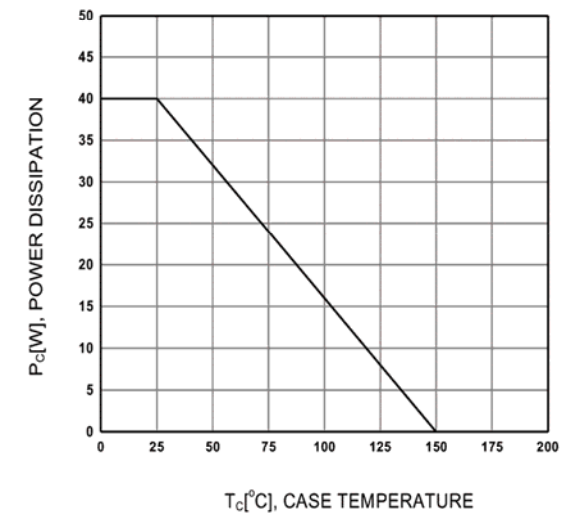
DC current Gain



Base-Emitter Saturation Voltage
Collector-Emitter Saturation Voltage



Safe Operating Area



Power Derating