

TIP120/121/122

NPN EPITAXIAL DARLINGTON TRANSISTOR

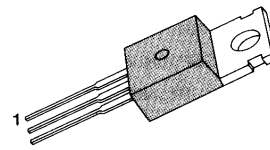
MEDIUM POWER LINEAR SWITCHING APPLICATIONS

• Complementary to TIP125/126/127

ABSOLUTE MAXIMUM RATINGS

Characteristic	Symbol	Rating	Unit
Collector-Base Voltage : TIP120	V_{CBO}	60	V
: TIP121		80	V
: TIP122		100	V
Collector-Emitter Voltage ^a	V_{CEO}	60	V
: TIP120		80	V
: TIP121		100	V
Emitter-Base Voltage	V_{EBO}	5	V
Collector Current (DC)	I_C	5	A
Collector Current (Pulse)	I_B	8	A
Base Current (DC)	P_C	120	mA
Collector Dissipation ($T_A=5^{\circ}C$)	P_C	2	W
Collector Dissipation ($T_C=5^{\circ}C$)	T_J	65	W
Junction Temperature	T_{STG}	150	$^{\circ}C$
Storage Temperature		-65 ~ 150	$^{\circ}C$

TO-220

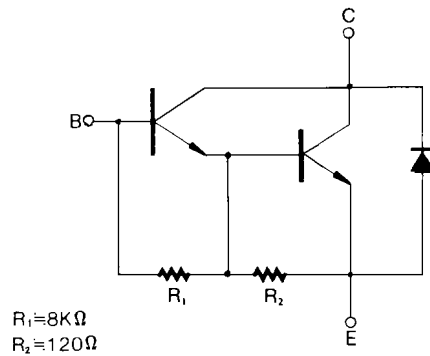
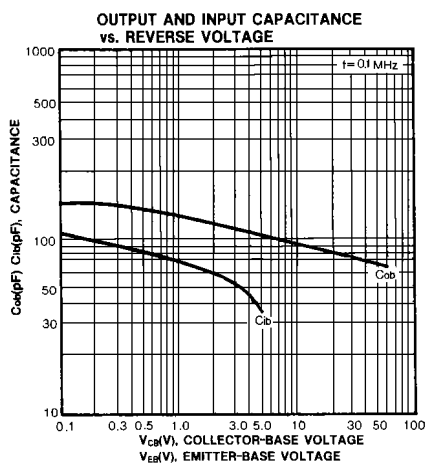
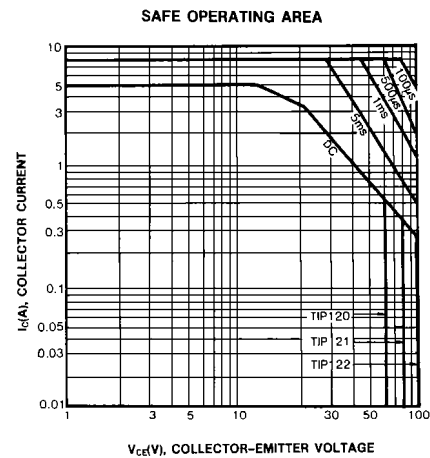
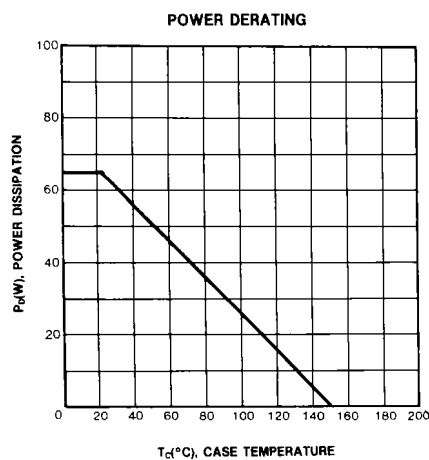
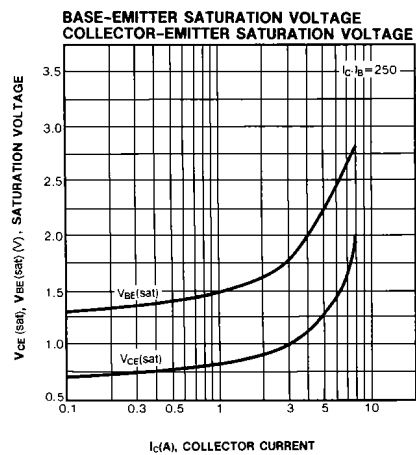
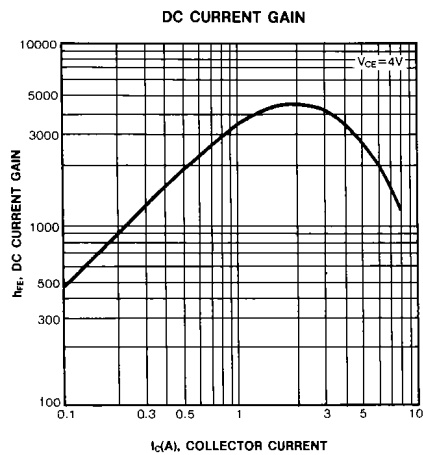


1.Base 2.Collector 3.Emitter

ELECTRICAL CHARACTERISTICS ($T_C = 25^{\circ}C$)

Characteristic	Symbol	Test Conditions	Min	Max	Unit
Collector Emitter Sustaining Voltage	$V_{CEO(sus)}$	$I_C = 100mA, I_B = 0$			
: TIP120			60		V
: TIP121			80		V
: TIP122			100		V
Collector Cutoff Current	I_{CEO}	$V_{CE} = 30V, I_B = 0$		2	mA
: TIP120		$V_{CE} = 40V, I_B = 0$		2	mA
: TIP121		$V_{CE} = 50V, I_B = 0$		2	mA
: TIP122					
Collector Cutoff Current	I_{CBO}	$V_{CB} = 60V, I_E = 0$		1	mA
: TIP120		$V_{CB} = 80V, I_E = 0$		1	mA
: TIP121		$V_{CB} = 100V, I_E = 0$		1	mA
: TIP122					
Emitter Cutoff Current	I_{EBO}	$V_{BE} = 5V, I_C = 0$		2	mA
* DC Current Gain	h_{FE}	$V_{CE} = 3V, I_C = 0.5A$	1000		
		$V_{CE} = 3V, I_C = 3A$	1000		
* Collector Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = 3A, I_B = 12mA$		2.0	V
		$I_C = 5A, I_B = 20mA$		4.0	V
* Base Emitter On Voltage	$V_{BE(on)}$	$V_{CE} = 3V, I_C = 3A$		2.5	V
Output Capacitance	C_{OB}	$V_{CB} = 10V, I_E = 0, f = 0.1MHz$		200	pF

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



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