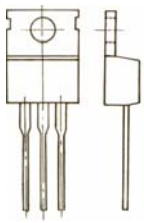
JIANGSU CHANGJIANG ELECTRONICS TECHNOLOGY CO., LTD

TO-220 Plastic-Encapsulate Transistors

TIP112 DARLINGTON TRANSISTOR (NPN)

TO-220

1. BASE
2. COLLECTOR
3. EMITTER



1 2 3

FEATURES

- High DC Current Gain : h_{FE}=1000 @ V_{CE}=4V, I_C=1A(Min.)
- Low Collector-Emitter Saturation Voltage
- Industrial Use

MAXIMUM RATINGS (T_A=25℃ unless otherwise noted)

Symbol	Parameter	Value	Units
V_{CBO}	Collector-Base Voltage	100	V
V_{CEO}	Collector-Emitter Voltage	100	V
V_{EBO}	Emitter-Base Voltage	5	V
I_C	Collector Current -Continuous	2	A
P_C	Collector Power Dissipation	2	W
T_J	Junction Temperature	150	℃
T_{stg}	Storage Temperature	-55 to +150	℃

ELECTRICAL CHARACTERISTICS (Tamb=25℃ unless otherwise specified)

Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Collector-base breakdown voltage	$V_{(BR)CBO}$	I_C=10mA,I_E=0	100			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	I_C=30mA,I_B=0$^{(SUS)}$	100			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	I_E=10mA,I_C=0	5			V
Collector cut-off current	I_{CEO}	V_{CE}=50V,I_B=0			2	mA
Collector cut-off current	I_{CBO}	V_{CB}=100V,I_E=0			1	mA
Emitter cut-off current	I_{EBO}	V_{EB}=5V,I_C=0			2	mA
DC current gain	$h_{FE(1)}$	V_{CE}=4V,I_C=1A	1000			
	$h_{FE(2)}$	V_{CE}=4V,I_C=2A	500			
Collector-emitter saturation voltage	$V_{CE(sat)}$	I_C=2A,I_B=8mA			2.5	V
Base-emitter voltage	V_{BE}	V_{CE}=4V,I_C=2A			2.8	V
Collector output capacitance	C_{ob}	V_{CB}=10V,I_E=0,f=0.1MHz			100	pF

Typical Characteristics

TIP112

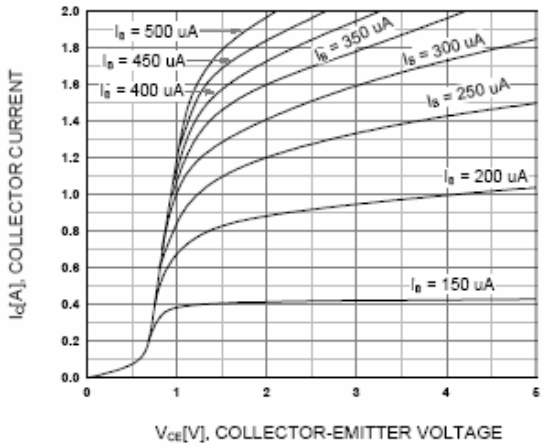


Figure 1. Static Characteristic

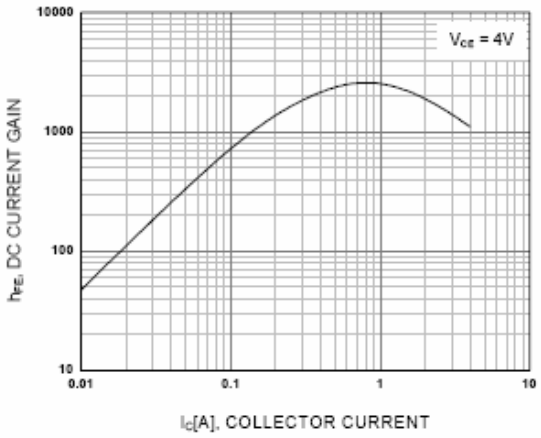


Figure 2. DC current Gain

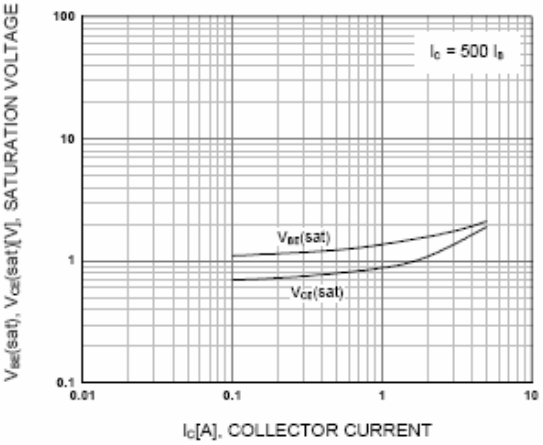


Figure 3. Base-Emitter Saturation Voltage
Collector-Emitter Saturation Voltage

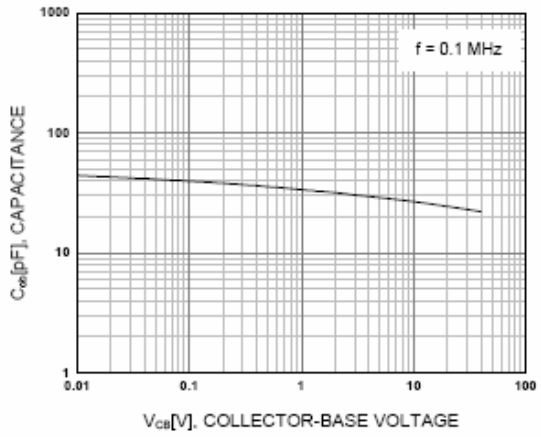


Figure 4. Collector Output Capacitance

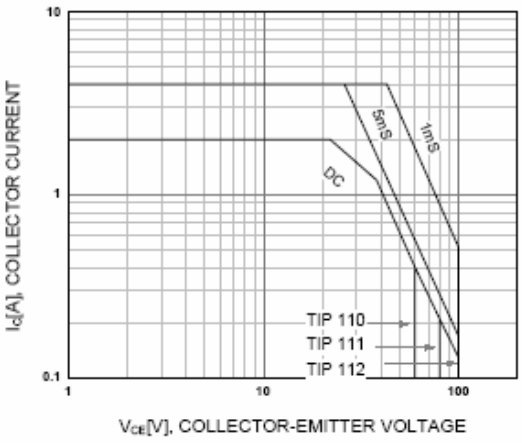


Figure 5. Safe Operating Area

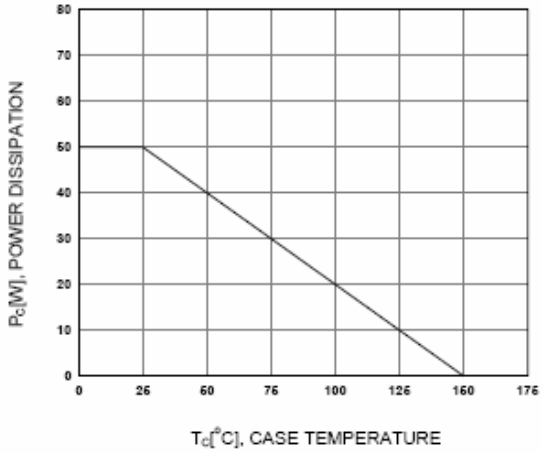


Figure 6. Power Derating