TIP120F,121F,122F DARLINGTON TRANSISTOR (NPN)

TIP125F,126F,127F DARLINGTON TRANSISTOR (PNP)

TO-220F

1.BASE
2.COLLECTOR
3.EMITTER

FEATURES

- Medium Power Complementary Silicon Transistors

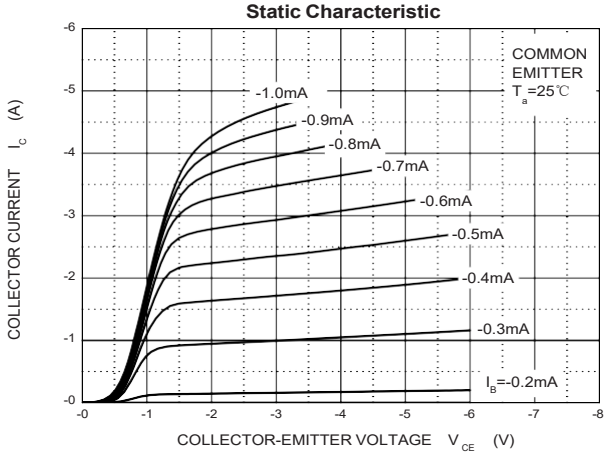
MAXIMUM RATINGS (T_a=25℃ unless otherwise noted)

Symbol	Parameter	TIP120F TIP125F	TIP121F TIP126F	TIP122F TIP127F	Unit
V_{CBO}	Collector-Base Voltage	60	80	100	V
V_{CEO}	Collector-Emitter Voltage	60	80	100	V
V_{EBO}	Emitter-Base Voltage	5			V
I_C	Collector Current -Continuous	5			A
P_C	Collector Power Dissipation	2			W
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient	62.5			℃/W
$R_{\theta JC}$	Thermal Resistance, Junction to Case	1.92			℃/W
T_J,T_{stg}	Operation Junction and Storage Temperature Range	-55~+150			℃

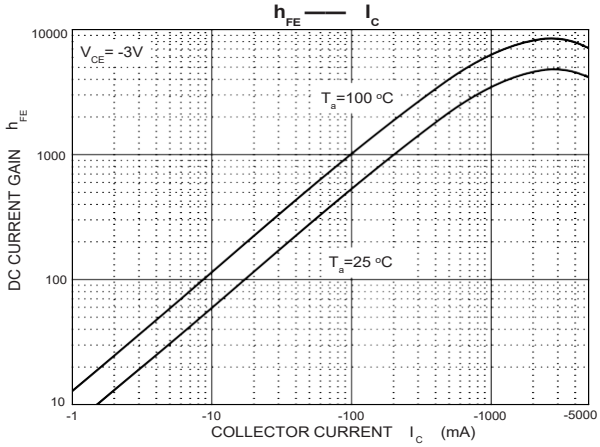
ELECTRICAL CHARACTERISTICS (T_a=25℃ unless otherwise specified)

Parameter		Symbol	Test conditions	Min	Max	Unit
Collector-base breakdown voltage	TIP120F,TIP125F TIP121F,TIP126F TIP122F,TIP127F	$V_{(BR)CBO}$	I_C= 1mA,I_E=0	60 80 100		V
Collector-emitter breakdown voltage	TIP120F,TIP125F TIP121F,TIP126F TIP122F,TIP127F	$V_{CEO(SUS)}$	I_C= 30mA,I_B=0	60 80 100		V
Collector cut-off current	TIP120F,TIP125F TIP121F,TIP126F TIP122F,TIP127F	I_{CBO}	V_{CB}= 60 V, I_E=0 V_{CB}= 80 V, I_E=0 V_{CB}= 100V, I_E=0		0.2	mA
Collector cut-off current	TIP120F,TIP125F TIP121F,TIP126F TIP122F,TIP127F	I_{CEO}	V_{CE}=30 V, I_B=0 V_{CE}=40 V, I_B=0 V_{CE}=50 V, I_B=0		0.5	mA
Emitter cut-off current		I_{EBO}	V_{EB}=5 V, I_C=0		2	mA
DC current gain		$h_{FE(1)}$	V_{CE}= 3V, I_C=0.5A	1000		
		$h_{FE(2)}$	V_{CE}= 3V, I_C=3 A	1000	12000	
Collector-emitter saturation voltage		$V_{CE(sat)}$	I_C=3A,I_B=12mA I_C=5 A,I_B=20mA		2 4	V
Base-emitter voltage		V_{BE}	V_{CE}=3V, I_C=3 A		2.5	V
Output Capacitance	TIP125F,TIP126F,TIP127F TIP120F,TIP121F,TIP122F	C_{ob}	V_{CB}=10V, I_E=0,f=0.1MHz		300 200	pF

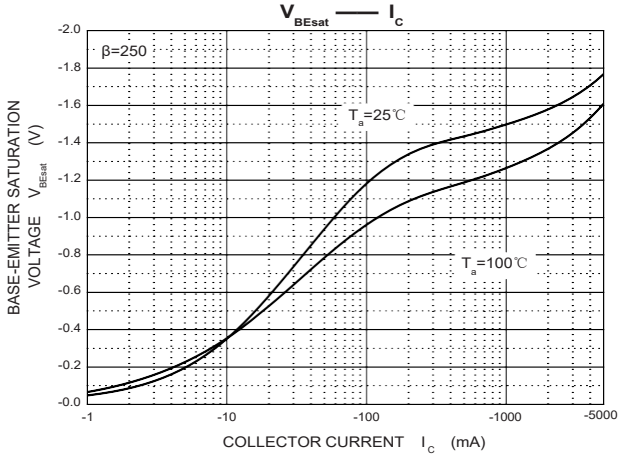
Static Characteristic



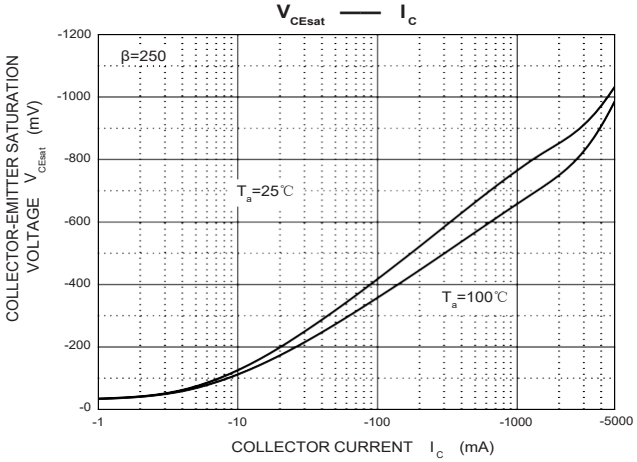
h_{FE} —— I_C



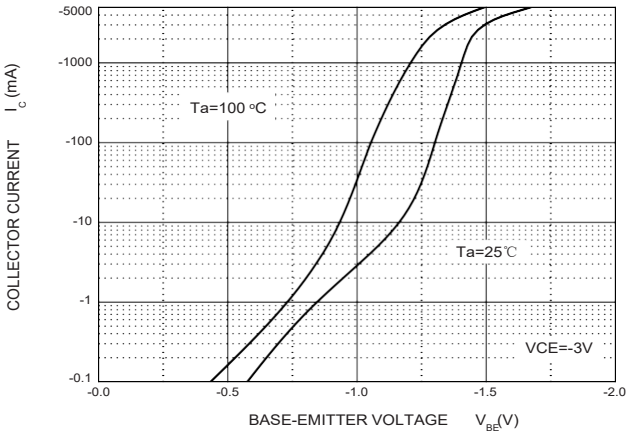
V_{BEsat} —— I_C



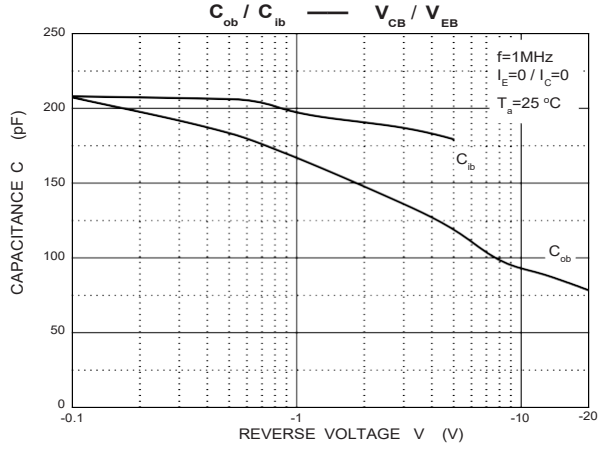
V_{CEsat} —— I_C



I_C —— V_{BE}



C_{ob} / C_{ib} —— V_{CB} / V_{EB}



P_c —— T_a