

TIP105/106/107

PNP EPITAXIAL
SILICON DARLINGTON TRANSISTOR

T-33-31

HIGH DC CURRENT GAIN

MIN $h_{FE}=1000$ @ $V_{CE}=-4V$, $I_C=-3A$

COLLECTOR-EMITTER SUSTAINING VOLTAGE

LOW COLLECTOR-EMITTER

SATURATION VOLTAGE

MONOLITHIC CONSTRUCTION WITH BUILT

IN BASE-EMITTER SHUNT RESISTORS

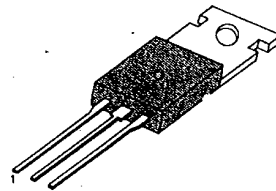
INDUSTRIAL USE

Complementary to TIP100/101/102

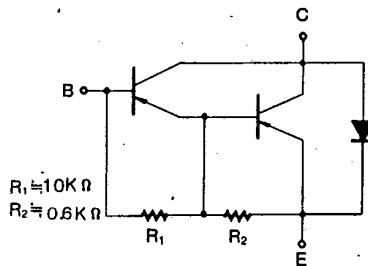
ABSOLUTE MAXIMUM RATINGS ($T_a=25^\circ C$)

Characteristic	Symbol	Rating	Unit
Collector-Base Voltage : TIP105	V_{CBO}	-60	V
: TIP106		-80	V
: TIP107		-100	V
Collector-Emitter Voltage	V_{CEO}		
: TIP105		-60	V
: TIP106		-80	V
: TIP107		-100	V
Emitter-Base Voltage	V_{EBO}	-5	V
Collector Current (DC)	I_C	-8	A
Collector Current (Pulse)	I_C	-15	A
Base Current (DC)	I_B	-1	A
Collector Dissipation ($T_a=25^\circ C$)	P_C	2	W
Collector Dissipation ($T_C=25^\circ C$)	P_C	80	W
Junction Temperature	T_J	150	$^\circ C$
Storage Temperature	T_{stg}	-65~150	$^\circ C$

TO-220

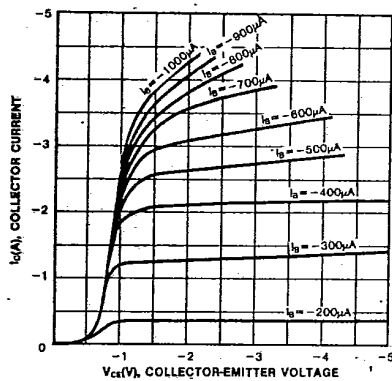
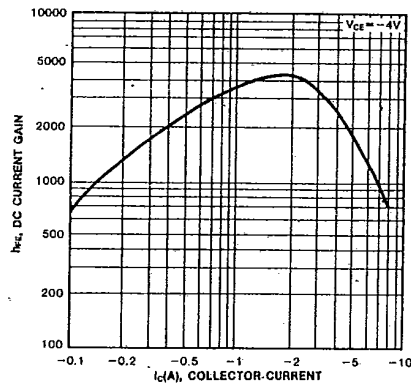
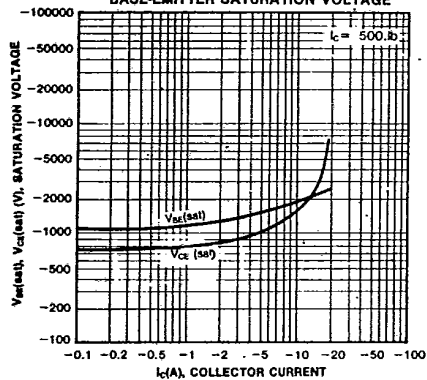
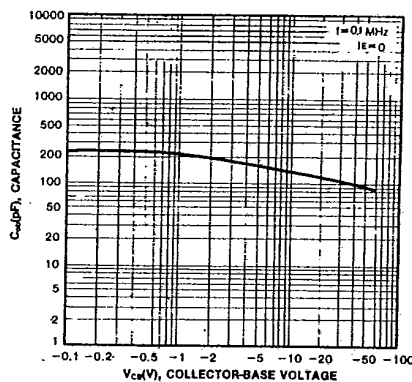
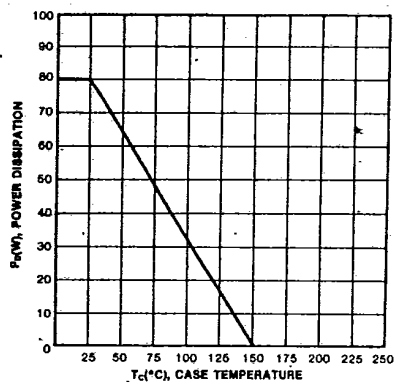
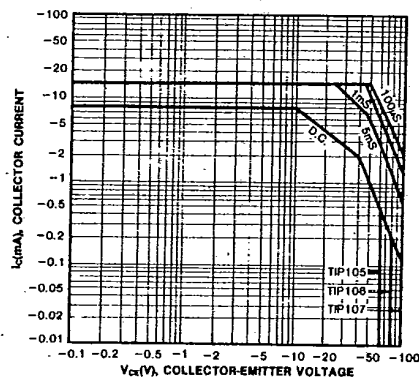


1. Base 2. Collector 3. Emitter

ELECTRICAL CHARACTERISTICS ($T_a=25^\circ C$)

Characteristic	Symbol	Test Condition	Min	Max	Unit
Collector Emitter Sustaining Voltage	$V_{CE(sus)}$				
: TIP105		$I_C=-30mA$, $I_B=0$	-60		V
: TIP106			-80		V
: TIP107			-100		V
Collector Cutoff Current : TIP105	I_{CEO}	$V_{CE}=-30V$, $I_B=0$		-50	μA
: TIP106		$V_{CE}=-40V$, $I_B=0$		-50	μA
: TIP107		$V_{CE}=-50V$, $I_B=0$		-50	μA
Collector Cutoff Current : TIP105	I_{CBO}	$V_{CB}=-80V$, $I_E=0$		-50	μA
: TIP106		$V_{CB}=-80V$, $I_E=0$		-50	μA
: TIP107		$V_{CB}=-100V$, $I_E=0$		-50	μA
Emitter Cutoff Current	I_{EBO}	$V_{BE}=-5V$, $I_C=0$		-2	mA
DC Current Gain	h_{FE}	$V_{CE}=-4V$, $I_C=-3A$	1000	20000	
		$V_{CE}=-4V$, $I_C=-8A$	200		
Collector Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=-3A$, $I_B=-6mA$		-2	V
		$I_C=-8A$, $I_B=-80mA$		-2.5	V
Base Emitter On Voltage	$V_{BE(on)}$	$V_{CE}=-4V$, $I_C=-8A$		-2.8	V
Output Capacitance	C_{ob}	$V_{CB}=-10V$, $I_E=0$, $f=0.1MHz$		300	pF



**PNP EPITAXIAL
SILICON DARLINGTON TRANSISTOR**
TIP105/106/107
T-33-31
STATIC CHARACTERISTIC

DC CURRENT GAIN

**COLLECTOR-EMITTER SATURATION VOLTAGE
BASE-EMITTER SATURATION VOLTAGE**

COLLECTOR OUTPUT CAPACITANCE

POWER DERATING

SAFE OPERATING AREA


TIP110/111/112

NPN EPITAXIAL
SILICON DARLINGTON TRANSISTOR

T-33-29

HIGH DC CURRENT GAIN

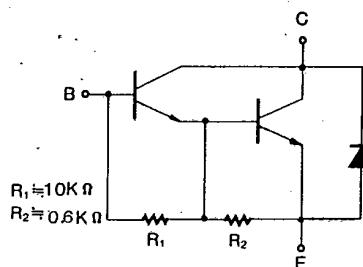
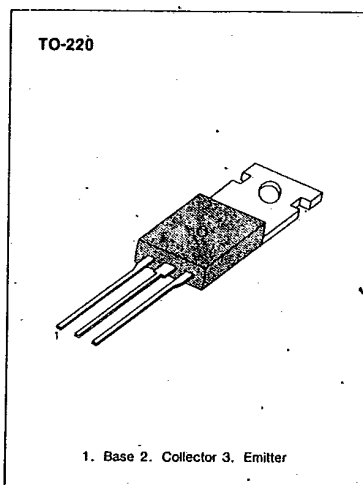
MIN $h_{FE}=1000$ @ $V_{CE}=4V$, $I_C=1A$ LOW COLLECTOR-EMITTER
SATURATION VOLTAGEMONOLITHIC CONSTRUCTION WITH BUILT
IN BASE-EMITTER SHUNT RESISTORS

INDUSTRIAL USE

Complementary to TIP115/116/117

ABSOLUTE MAXIMUM RATINGS ($T_a=25^\circ C$)

Characteristic	Symbol	Rating	Unit
Collector-Base Voltage : TIP110	V_{CBO}	60	V
: TIP111		80	V
: TIP112		100	V
Collector-Emitter Voltage	V_{CEO}		
: TIP110		60	V
: TIP111		80	V
: TIP112		100	V
Emitter-Base Voltage	V_{EBO}	5	V
Collector Current (DC)	I_C	2	A
Collector Current (Pulse)	I_C	4	A
Base Current (DC)	I_B	50	mA
Collector Dissipation ($T_a=25^\circ C$)	P_C	2	W
Collector Dissipation ($T_C=25^\circ C$)	P_C	50	W
Junction Temperature	T_J	150	$^\circ C$
Storage Temperature	T_{stg}	-65~150	$^\circ C$

ELECTRICAL CHARACTERISTICS ($T_a=25^\circ C$)

Characteristic	Symbol	Test Condition	Min	Max	Unit
Collector Emitter Sustaining Voltage	$V_{CEO(sus)}$	$I_C=30mA$, $I_B=0$	60		V
: TIP110			80		V
: TIP111			100		V
Collector Cutoff Current	I_{CEO}	$V_{CE}=30V$, $I_B=0$		2	mA
: TIP110		$V_{CE}=40V$, $I_B=0$		2	mA
: TIP111		$V_{CE}=50V$, $I_B=0$		2	mA
Collector Cutoff Current	I_{CBO}	$V_{CB}=60V$, $I_E=0$		1	mA
: TIP110		$V_{CB}=80V$, $I_E=0$		1	mA
: TIP111		$V_{CB}=100V$, $I_E=0$		1	mA
Emitter Cutoff Current	I_{EBO}	$V_{BE}=5V$, $I_C=0$		2	mA
DC Current Gain	h_{FE}	$V_{CE}=4V$, $I_C=1A$	1000		
		$V_{CE}=4V$, $I_C=2A$	500		
Collector Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=2A$, $I_B=8mA$		2.5	V
Base Emitter On Voltage	$V_{BE(on)}$	$V_{CE}=4V$, $I_C=2A$		2.8	V
Output Capacitance	C_{ob}	$V_{CB}=10V$, $I_E=0$, $f=0.1MHz$		100	pF



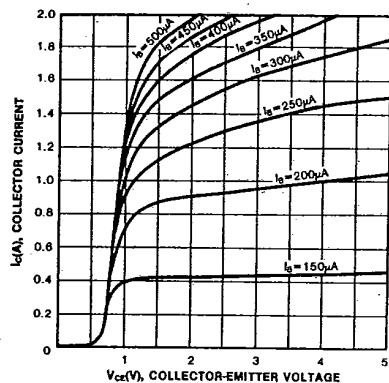
TIP110/111/112

SAMSUNG SEMICONDUCTOR INC

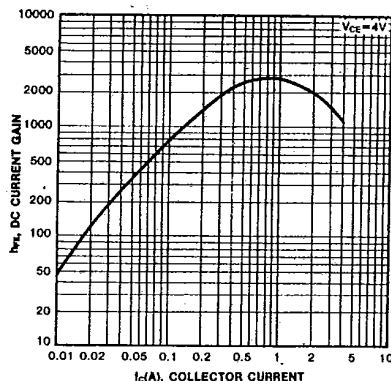
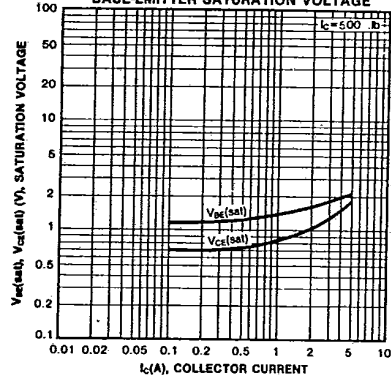
NPN EPITAXIAL
SILICON DARLINGTON TRANSISTOR

T-33-29

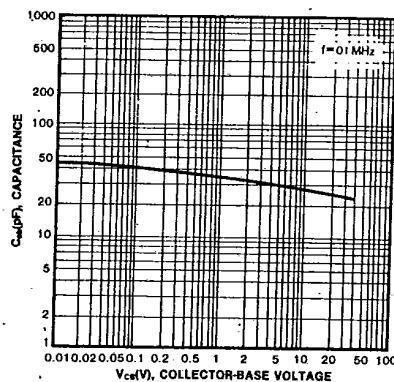
STATIC CHARACTERISTIC



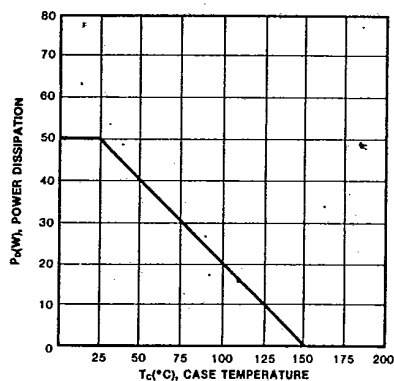
DC CURRENT GAIN


COLLECTOR-EMITTER SATURATION VOLTAGE
BASE-EMITTER SATURATION VOLTAGE


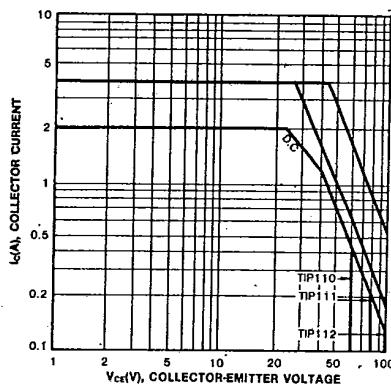
COLLECTOR OUTPUT CAPACITANCE



POWER DERATING



SAFE OPERATING AREA



SAMSUNG SEMICONDUCTOR

PNP EPITAXIAL SILICON DARLINGTON TRANSISTOR

TIP115/116/117

SAMSUNG SEMICONDUCTOR INC

HIGH DC CURRENT GAIN

MIN $h_{FE} = 1000$ @ $V_{CE} = -4V$, $I_C = -1A$

LOW COLLECTOR-EMITTER

SATURATION VOLTAGE

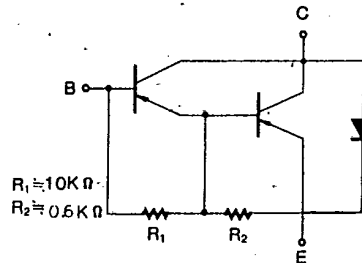
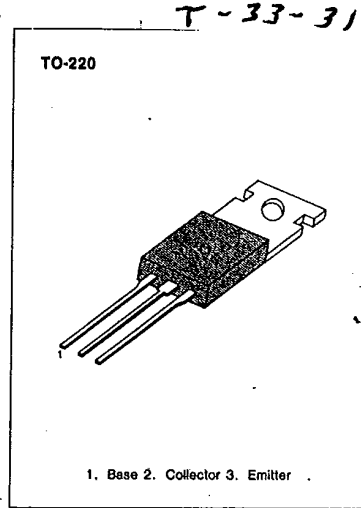
MONOLITHIC CONSTRUCTION WITH BUILT
IN BASE-EMITTER SHUNT RESISTORS

INDUSTRIAL USE

Complementary to TIP110/111/112

ABSOLUTE MAXIMUM RATINGS ($T_a = 25^\circ C$)

Characteristic	Symbol	Rating	Unit
Collector Base Voltage : TIP115	V_{CBO}	-60	V
: TIP116		-80	V
: TIP117		-100	V
Collector Emitter Voltage	V_{CEO}		
: TIP 115		-60	V
: TIP116		-80	V
: TIP117		-100	V
Emitter-Base Voltage	V_{EBO}	-5	V
Collector Current (DC)	I_C	-2	A
Collector Current (Pulse)	I_C	-4	A
Base Current (DC)	I_B	-50	mA
Collector Dissipation ($T_a = 25^\circ C$)	P_C	2	W
Collector Dissipation ($T_c = 25^\circ C$)	P_C	50	W
Junction Temperature	T_J	150	$^\circ C$
Storage Temperature	T_{stg}	-65~150	$^\circ C$



ELECTRICAL CHARACTERISTICS ($T_a = 25^\circ C$)

Characteristic	Symbol	Test Condition	Min	Max	Unit
Collector Emitter Sustaining Voltage	$V_{CE(sus)}$				
: TIP115		$I_C = -30mA$, $I_B = 0$	-60		V
: TIP116			-80		V
: TIP117			-100		V
Collector Cutoff Current : TIP115	I_{CEO}	$V_{CE} = -30V$, $I_B = 0$		-2	mA
: TIP116		$V_{CE} = -40V$, $I_B = 0$		-2	mA
: TIP117		$V_{CE} = -60V$, $I_B = 0$		-2	mA
Collector Cutoff Current : TIP115	I_{CBO}	$V_{CB} = -60V$, $I_E = 0$		-1	mA
: TIP116		$V_{CB} = -80V$, $I_E = 0$		-1	mA
: TIP117		$V_{CB} = -100V$, $I_E = 0$		-1	mA
Emitter Cutoff Current	I_{EBO}	$V_{BE} = -5V$, $I_C = 0$		-2	mA
DC Current Gain	h_{FE}	$V_{CE} = -4V$, $I_C = -1A$	1000		
		$V_{CE} = -4V$, $I_C = -2A$	500		
Collector Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = -2A$, $I_B = -8mA$		-2.5	V
Base Emitter On Voltage	$V_{BE(on)}$	$V_{CE} = -4V$, $I_C = -2A$		-2.8	V
Output Capacitance	C_{ob}	$V_{CB} = -10V$, $I_E = 0$, $f = 0.1MHz$		200	pF



SAMSUNG SEMICONDUCTOR

TIP115/116/117

PNP EPITAXIAL
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