

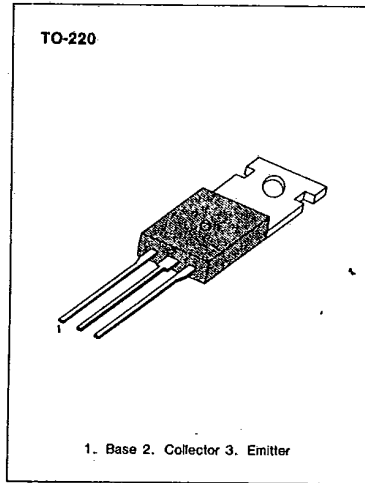
**MJE3055T****NPN SILICON TRANSISTOR**

**GENERAL PURPOSE AND SWITCHING  
APPLICATIONS  
DC CURRENT GAIN SPECIFIED  
TO 10 AMPERES**

High Current Gain-Bandwidth Product ( $f_T = 2\text{MHz (MIN)}$ )

**ABSOLUTE MAXIMUM RATINGS ( $T_a = 25^\circ\text{C}$ )**

Characteristic	Symbol	Rating	Unit
Collector-Base Voltage	$V_{CBO}$	70	V
Collector-Emitter Voltage	$V_{CEO}$	60	V
Emitter-Base Voltage	$V_{EBO}$	5	V
Collector Current	$I_C$	10	A
Base Current	$I_B$	6	A
Collector Dissipation ( $T_c = 25^\circ\text{C}$ )	$P_C$	75	W
Collector Dissipation ( $T_a = 25^\circ\text{C}$ )	$P_C$	0.8	W
Junction Temperature	$T_J$	150	$^\circ\text{C}$
Storage Temperature	$T_{stg}$	$-55 \sim 150$	$^\circ\text{C}$



3

**ELECTRICAL CHARACTERISTICS ( $T_a = 25^\circ\text{C}$ )**

Characteristic	Symbol	Test Condition	Min	Max	Unit
Collector Emitter Sustaining Voltage	$V_{CE(sus)}$	$I_C = 200\text{mA}, I_B = 0$	60		V
Collector Cutoff Current	$I_{CEO}$	$V_{CE} = 30\text{V}, I_B = 0$		700	$\mu\text{A}$
Collector Cutoff Current	$I_{CEx}$	$V_{CE} = 70\text{V}, V_{BE(off)} = -1.5\text{V}$		1	$\text{mA}$
		$V_{CE} = 70\text{V}, V_{BE(off)} = -1.5\text{V}$		5	$\text{mA}$
		$T_c = 150^\circ\text{C}$			
Emitter Cutoff Current	$I_{EBO}$	$V_{EB} = 5\text{V}, I_C = 0$		5	$\text{mA}$
*DC Current Gain	$h_{FE}$	$V_{CE} = 4\text{V}, I_C = 4\text{A}$	20	100	
		$V_{CE} = 4\text{V}, I_C = 10\text{A}$	5		
*Collector Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = 4\text{A}, I_B = 0.4\text{A}$		1.1	V
		$I_C = 10\text{A}, I_B = 3.3\text{A}$		8	V
*Base Emitter On Voltage	$V_{BE(on)}$	$V_{CE} = 4\text{V}, I_C = 4\text{A}$		1.8	V
Current Gain Bandwidth Product	$f_T$	$V_{CE} = 10\text{V}, I_C = 500\text{mA}, f = 500\text{KHz}$	2		MHz

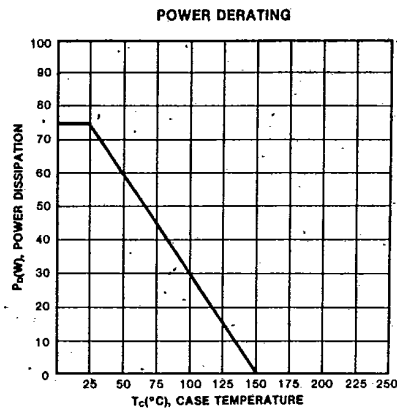
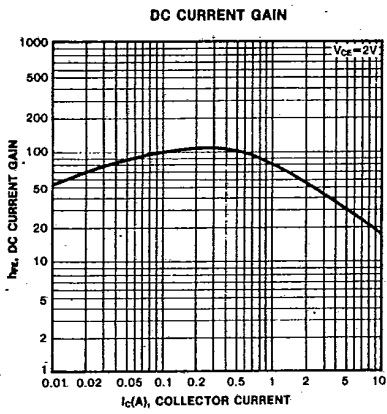
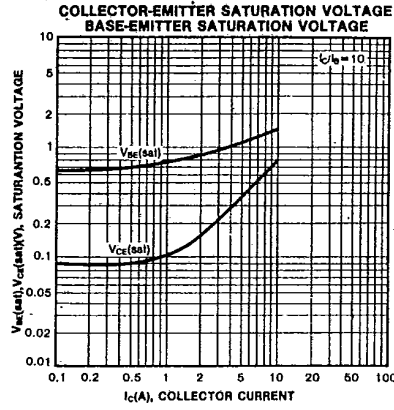
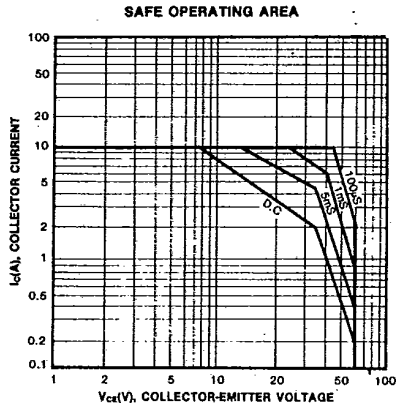
\* Pulse test:  $PW \leq 300\mu\text{s}$ , duty cycle  $\leq 2\%$  Pulse



MJE3055T

NPN SILICON TRANSISTOR

T-33-13



**TIP29 SERIES**  
**(TIP29/29A/29B/29C) NPN EXITAXIAL SILICON TRANSISTOR**

SAMSUNG SEMICONDUCTOR INC

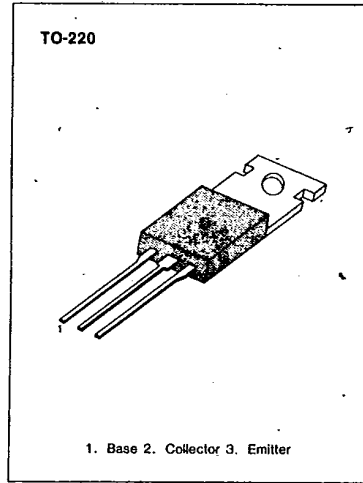
T-33-09

**MEDIUM POWER LINEAR**  
**SWITCHING APPLICATIONS**

• Complementary to TIP30/30A/30B/30C

**ABSOLUTE MAXIMUM RATINGS (T<sub>a</sub>=25°C)**

Characteristic	Symbol	Rating	Unit
Collector-Base Voltage	V <sub>CB0</sub>	TIP29	40 V
		TIP29A	60 V
		TIP29B	80 V
		TIP29C	100 V
Collector-Emitter Voltage	V <sub>CEO</sub>	TIP29	40 V
		TIP29A	60 V
		TIP29B	80 V
		TIP29C	100 V
Emitter-Base Voltage	V <sub>EB0</sub>	5	V
Collector Current (DC)	I <sub>C</sub>	1	A
Collector Current (Pulse)	I <sub>C</sub>	3	A
Base Current	I <sub>B</sub>	0.4	A
Collector Dissipation (T <sub>c</sub> =25°C)	P <sub>C</sub>	30	W
Collector Dissipation (T <sub>a</sub> =25°C)	P <sub>C</sub>	2	W
Junction Temperature	T <sub>J</sub>	150	°C
Storage Temperature	T <sub>stg</sub>	-65~150	°C



3

**ELECTRICAL CHARACTERISTICS (T<sub>c</sub>=25°C)**

Characteristic	Symbol	Test Condition	Min	Max	Unit
*Collector Emitter Sustaining Voltage	BV <sub>CEO</sub> (sus)	I <sub>C</sub> =30mA, I <sub>B</sub> =0	40		V
			60		V
			80		V
			100		V
Collector Cutoff Current	I <sub>CEO</sub>	V <sub>CE</sub> =30V, I <sub>B</sub> =0		0.3	mA
		V <sub>CE</sub> =60V, I <sub>B</sub> =0		0.3	mA
Collector Cutoff Current	I <sub>CES</sub>	V <sub>CE</sub> =40V, V <sub>EB</sub> =0		200	μA
		V <sub>CE</sub> =60V, V <sub>EB</sub> =0		200	μA
		V <sub>CE</sub> =80V, V <sub>EB</sub> =0		200	μA
		V <sub>CE</sub> =100V, V <sub>EB</sub> =0		200	μA
Emitter Cutoff Current	I <sub>EBO</sub>	V <sub>BE</sub> =5V, I <sub>C</sub> =0		1.0	mA
*DC Current Gain	h <sub>FE</sub>	V <sub>CE</sub> =4V, I <sub>C</sub> =0.2A	40		
		V <sub>CE</sub> =4V, I <sub>C</sub> =1A	15	75	
*Collector-Emitter Saturation Voltage	V <sub>CE</sub> (sat)	I <sub>C</sub> =1A, I <sub>B</sub> =125mA		0.7	V
*Base-Emitter On Voltage	V <sub>BE</sub> (on)	V <sub>CE</sub> =4V, I <sub>C</sub> =1A		1.3	V
Current Gain Bandwidth Product	f <sub>T</sub>	V <sub>CE</sub> =10V, I <sub>C</sub> =200mA f=1MHz	3.0		MHz

\* Pulse Test: PW≤300μs, Duty Cycle≤2%

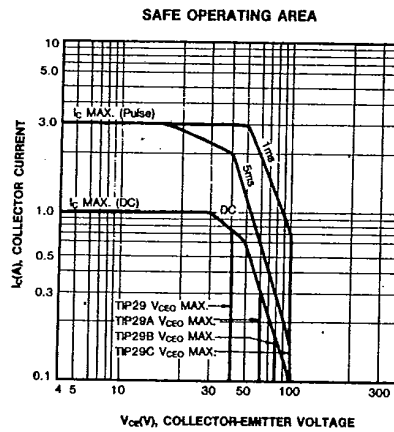
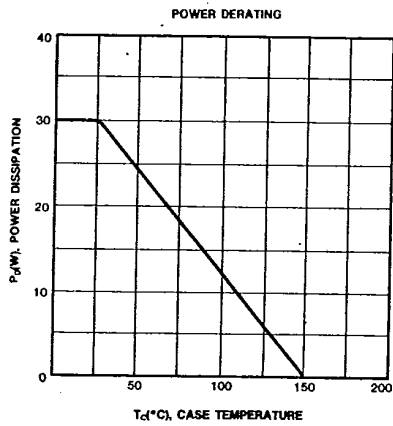
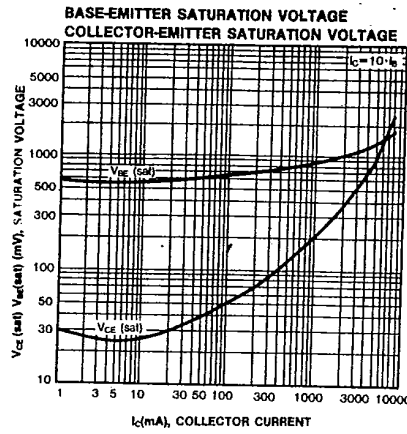
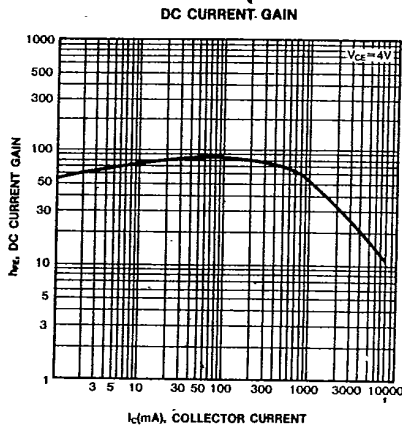
TIP29 SERIES

14E D 7964142 0007713 6

(TIP29/29A/29B/29C) NPN EXITAXIAL SILICON TRANSISTOR

SAMSUNG SEMICONDUCTOR INC

T-33-09



**TIP30 SERIES****(TIP30/30A/30B/30C) PNP EXITAXIAL SILICON TRANSISTOR**

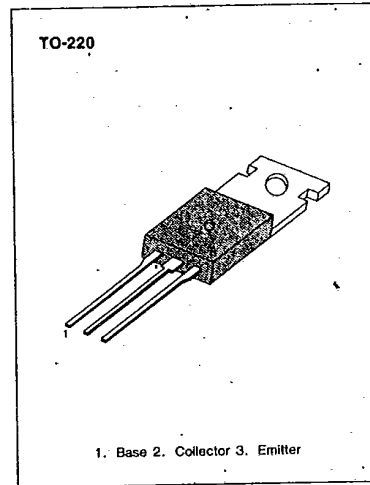
T-33-19

**MEDIUM POWER LINEAR SWITCHING APPLICATIONS**

- Complement to TIP29/29A/29B/29C

**ABSOLUTE MAXIMUM RATINGS (T<sub>a</sub>=25°C)**

Characteristic	Symbol	Rating	Unit
Collector-Base Voltage	V <sub>CB0</sub>	TIP30	-40 V
		TIP30A	-60 V
		TIP30B	-80 V
		TIP30C	-100 V
		TIP30C	-100 V
Collector-Emitter Voltage	V <sub>CE0</sub>	TIP30	-40 V
		TIP30A	-60 V
		TIP30B	-80 V
		TIP30C	-100 V
		TIP30C	-100 V
Emitter-Base Voltage	V <sub>EB0</sub>	-5 V	V
Collector Current (DC)	I <sub>C</sub>	-1 A	A
Collector Current (Pulse)	I <sub>C</sub>	-3 A	A
Base Current	I <sub>B</sub>	-0.4 A	A
Collector Dissipation (T <sub>c</sub> =25°C)	P <sub>C</sub>	30 W	W
Collector Dissipation (T <sub>a</sub> =25°C)	P <sub>C</sub>	2 W	W
Junction Temperature	T <sub>J</sub>	150 °C	°C
Storage Temperature	T <sub>stg</sub>	-65~150 °C	°C



3

**ELECTRICAL CHARACTERISTICS (T<sub>c</sub>=25°C)**

Characteristic	Symbol	Test Condition	Min	Max	Unit
* Collector Emitter Sustaining Voltage	BV <sub>CEO</sub> (SUS)	I <sub>C</sub> =-30mA, I <sub>B</sub> =0	-40 -60 -80 -100		V
Collector Cutoff Current	I <sub>CEO</sub>	V <sub>CE</sub> =-30V, I <sub>B</sub> =0		-0.3	mA
		V <sub>CE</sub> =-60V, I <sub>B</sub> =0		-0.3	mA
Collector Cutoff Current	I <sub>CES</sub>	V <sub>CE</sub> =-40V, V <sub>EB</sub> =0		-200	μA
		V <sub>CE</sub> =-60V, V <sub>EB</sub> =0		-200	μA
		V <sub>CE</sub> =-80V, V <sub>EB</sub> =0		-200	μA
		V <sub>CE</sub> =-100V, V <sub>EB</sub> =0		-200	μA
		V <sub>BE</sub> =-5V, I <sub>C</sub> =0		-1.0	mA
Emitter Cutoff Current	I <sub>EBO</sub>	V <sub>CE</sub> =-4V, I <sub>C</sub> =-0.2A	40		μA
* DC Current Gain	h <sub>FE</sub>	V <sub>CE</sub> =-4V, I <sub>C</sub> =-1A	15	75	
* Collector-Emitter Saturation Voltage	V <sub>CE</sub> (sat)	I <sub>C</sub> =-1A, I <sub>B</sub> =-125mA		-0.7	V
* Base-Emitter On Voltage	V <sub>BE</sub> (on)	V <sub>CE</sub> =-4V, I <sub>C</sub> =-1A		-1.3	V
Current Gain Bandwidth Product	f <sub>T</sub>	V <sub>CE</sub> =-10V, I <sub>C</sub> =-200mA f=1MHz	3.0		MHz

\* Pulse Test: PW≤300μs, Duty Cycle≤2%

**TIP30 SERIES**

**(TIP30/30A/30B/30C) PNP EXITAXIAL SILICON TRANSISTOR**

T-33-19

