

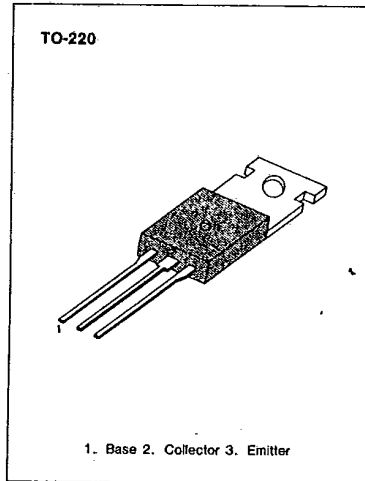
MJE3055T**NPN SILICON TRANSISTOR**

**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}	-55~150	$^\circ\text{C}$



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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	μA
Collector Cutoff Current	I_{CEX}	$V_{CE} = 70\text{V}, V_{BE(off)} = -1.5\text{V}$		1	mA
		$V_{CE} = 70\text{V}, V_{BE(off)} = -1.5\text{V}$		5	mA
		$T_c = 150^\circ\text{C}$			
Emitter Cutoff Current	I_{EBO}	$V_{EB} = 5\text{V}, I_C = 0$		5	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

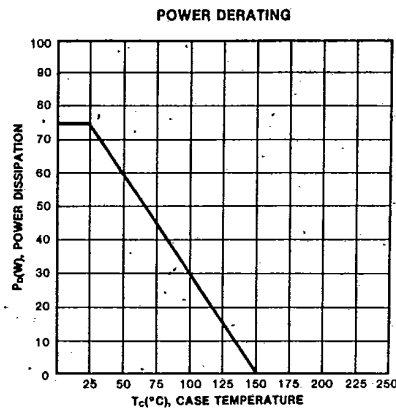
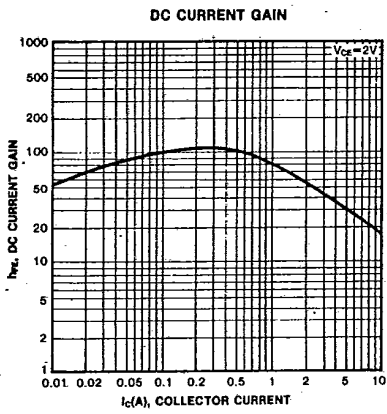
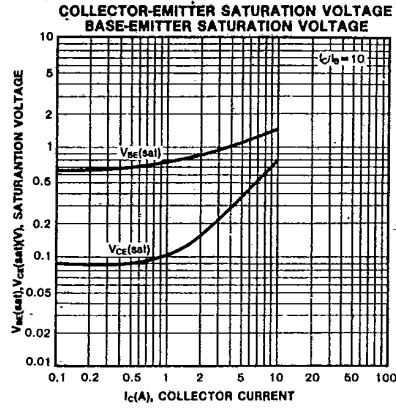
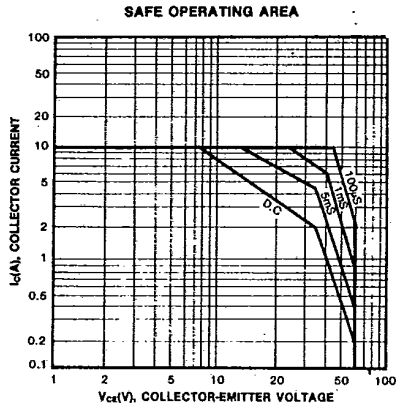
* Pulse test: $PW \leq 300\mu\text{s}$, duty cycle $\leq 2\%$ Pulse



MJE3055T

NPN SILICON TRANSISTOR

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

SAMSUNG SEMICONDUCTOR INC

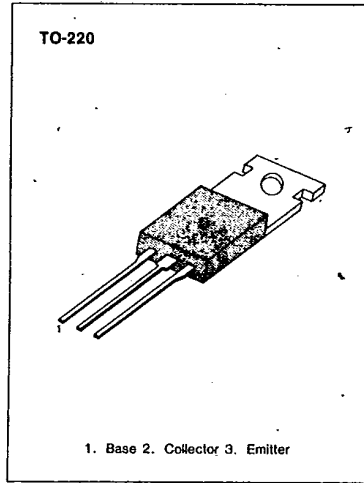
T-33-09

MEDIUM POWER LINEAR SWITCHING APPLICATIONS

• Complementary to TIP30/30A/30B/30C

ABSOLUTE MAXIMUM RATINGS (T_a=25°C)

Characteristic	Symbol	Rating	Unit
Collector-Base Voltage	V _{CB0}	TIP29	40 V
		TIP29A	60 V
		TIP29B	80 V
		TIP29C	100 V
Collector-Emitter Voltage	V _{CE0}	TIP29	40 V
		TIP29A	60 V
		TIP29B	80 V
		TIP29C	100 V
Emitter-Base Voltage	V _{EB0}	5	V
Collector Current (DC)	I _C	1	A
Collector Current (Pulse)	I _C	3	A
Base Current	I _B	0.4	A
Collector Dissipation (T _c =25°C)	P _C	30	W
Collector Dissipation (T _a =25°C)	P _C	2	W
Junction Temperature	T _J	150	°C
Storage Temperature	T _{stg}	-65~150	°C



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ELECTRICAL CHARACTERISTICS (T_c=25°C)

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

* Pulse Test: PW≤300μs, Duty Cycle≤2%

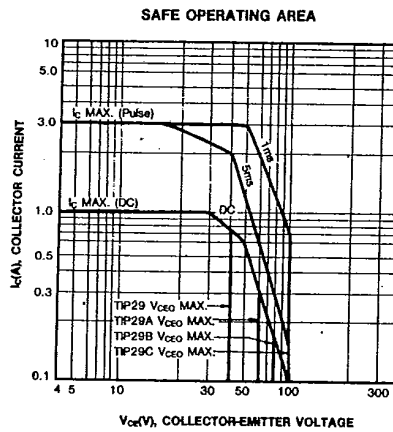
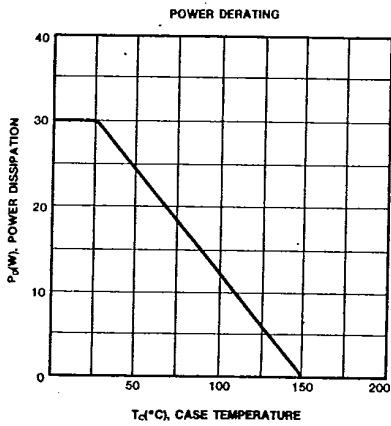
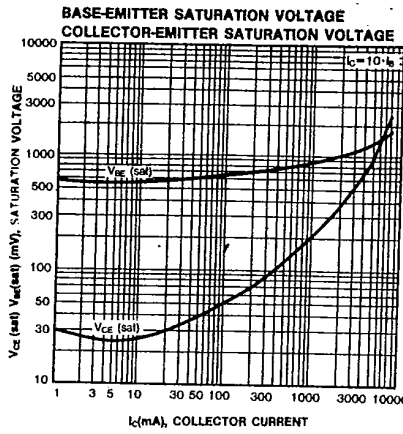
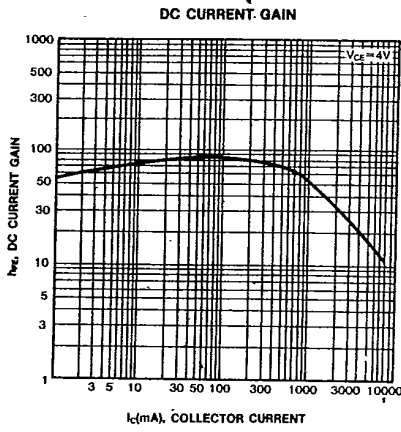
TIP29 SERIES

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

SAMSUNG SEMICONDUCTOR INC

T-33-09



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

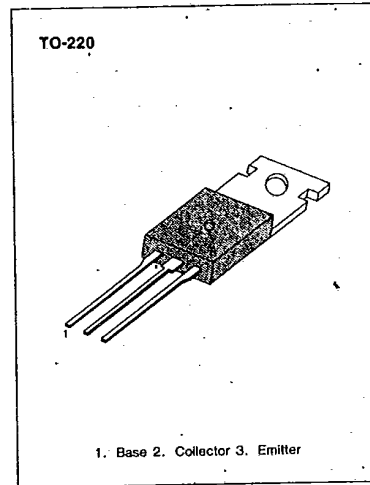
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**MEDIUM POWER LINEAR
SWITCHING APPLICATIONS**

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

ABSOLUTE MAXIMUM RATINGS (T_a=25°C)

Characteristic	Symbol	Rating	Unit
Collector-Base Voltage	V _{CB0}	TIP30	-40 V
		TIP30A	-60 V
		TIP30B	-80 V
		TIP30C	-100 V
		TIP30C	-100 V
Collector-Emitter Voltage	V _{CE0}	TIP30	-40 V
		TIP30A	-60 V
		TIP30B	-80 V
		TIP30C	-100 V
		TIP30C	-100 V
Emitter-Base Voltage	V _{EB0}	-5 V	V
Collector Current (DC)	I _C	-1 A	A
Collector Current (Pulse)	I _C	-3 A	A
Base Current	I _B	-0.4 A	A
Collector Dissipation (T _c =25°C)	P _C	30 W	W
Collector Dissipation (T _a =25°C)	P _C	2 W	W
Junction Temperature	T _J	150 °C	°C
Storage Temperature	T _{stg}	-65~150 °C	°C



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ELECTRICAL CHARACTERISTICS (T_c=25°C)

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

