

T-33-09



Silicon NPN Power Transistors

TO-220 Package

Absolute Maximum Ratings (Ta=25°C)

Item	Symbol	TIP29	TIP29A	TIP29B	TIP29C	Unit
Collector-Base Voltage	V _{CB0}	40	60	80	100	V
Collector-Emitter Voltage	V _{CE0}	40	60	80	100	V
Emitter-Base Voltage	V _{EB0}	5				V
Collector Current	I _C	1				A
Peak Collector Current	I _{CM}	3				A
Base Current	I _B	0.4				A
Power Dissipation (Tc=25°C)	P _C	30				W
Junction Temperature	T _J	-65~+150				°C
Storage Temperature	T _{stg}	-65~+150				°C

Applications:

- Power Amplifier and High Speed Switching
- Complementary pair with TIP30, TIP30A, TIP30B, TIP30C

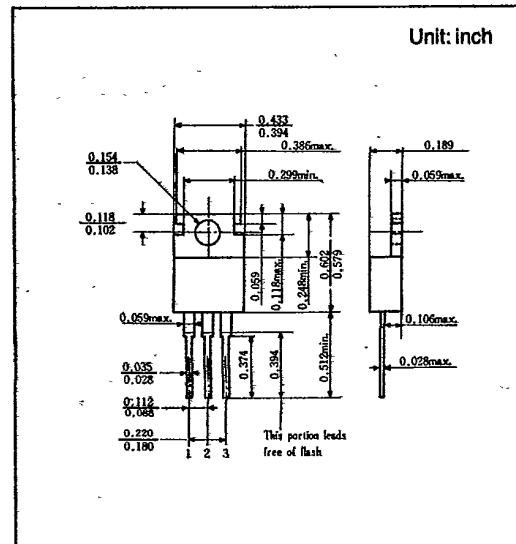
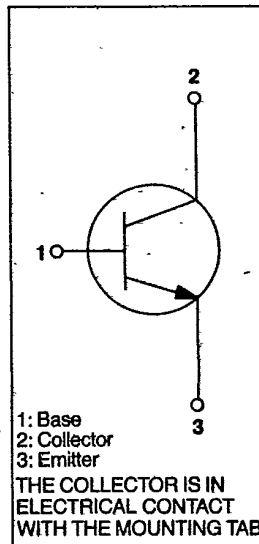
Features:

- 30W at 25°C temperature
- 1A rated collector current
- Min. fr of 3MHz at 10V, 200mA

Electrical Characteristics (Ta=25°C)

Item	Symbol	Condition					Unit
			TIP29	TIP29A	TIP29B	TIP29C	
Collector-Emitter Voltage	V _{CE0}	I _C =30mA, I _B =0	40	60	80	100	V
Collector Cutoff Current	I _{CEO}	V _{CE} =30V, I _B =0	0.3	0.3			mA
		V _{CE} =60V, I _B =0			0.3	0.3	
Collector Cutoff Current	I _{CES}	V _{CE} =40V, V _{BE} =0	0.2				mA
		V _{CE} =60V, V _{BE} =0		0.2			
		V _{CE} =80V, V _{BE} =0			0.2		
Emitter-Base Current	I _{EB0}	V _{EB} =5V, I _C =0	1	1	1	1	mA
		V _{CE} =4V, I _C =0.2A	40	40	40	40	
DC Current Gain	h _{FE}	V _{CE} =4V, I _C =1A	15 75	15 75	15 75	15 75	
Base-Emitter Voltage	V _{BE}	V _{CE} =4V, I _C =1A	1.3	1.3	1.3	1.3	V
Collector-Emitter Saturation Voltage	V _{CE(sat)}	I _C =1A, I _B =125mA	0.7	0.7	0.7	0.7	V
Small-Signal Current Gain	h _{fe}	V _{CE} =10V, I _C =0.2A, f=1kHz	20	20	20	20	
		V _{CE} =10V, I _C =0.2A, f=1MHz	3	3	3	3	
Turn-on Time	t _{on}	I _C =1A, I _{B1} =100mA, -I _{B2} =100mA	0.2 (typ.)				μs
Turn-off Time	t _{off}	-V _{BE(off)} =4.3V, R _L =30Ω	1 (typ.)				μs

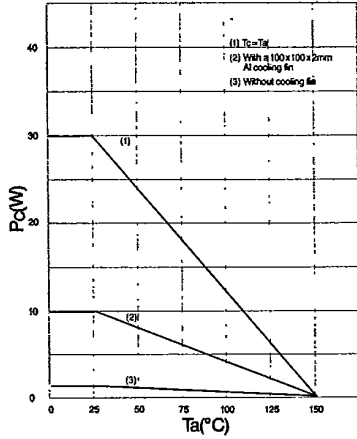
The device specifications are subject to change without prior notice.



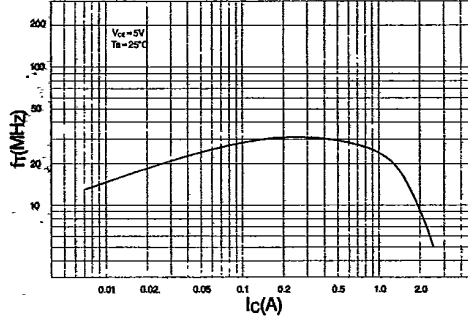
**TIP29
TIP29A
TIP29B
TIP29C**

Typical Characteristics

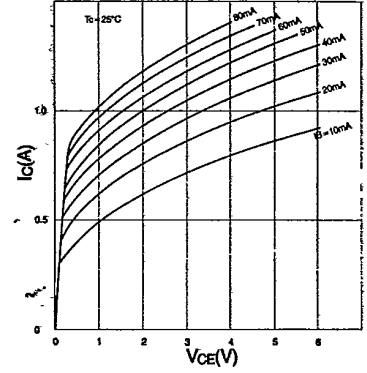
Pc vs. Ta characteristics



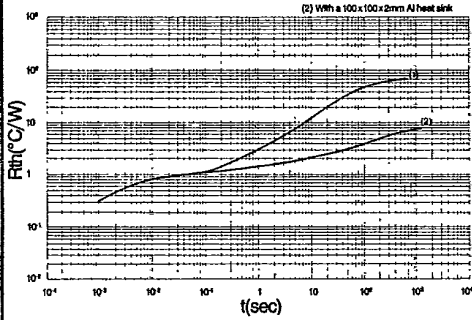
fr vs. Ic characteristics



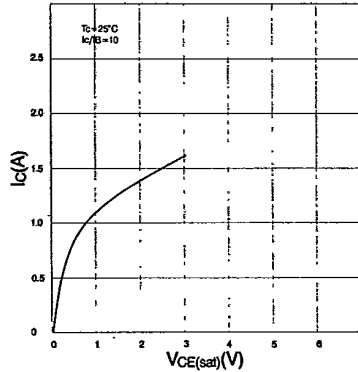
Vce vs. Ic characteristics



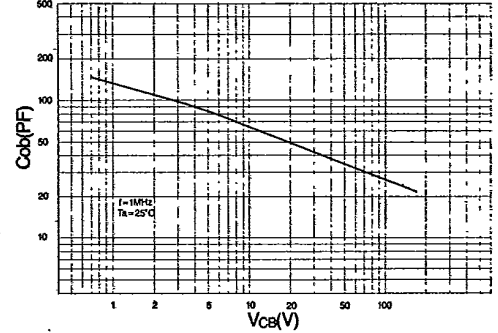
Thermal Resistance vs. t



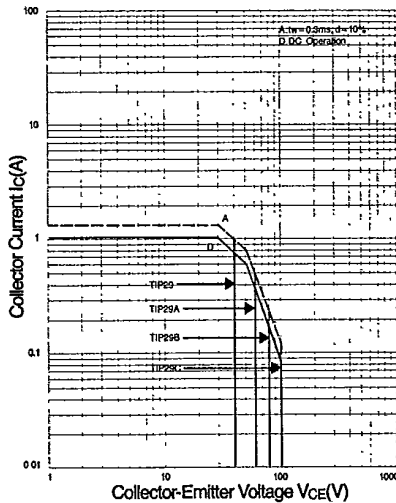
Vce(sat) vs. Ic characteristics



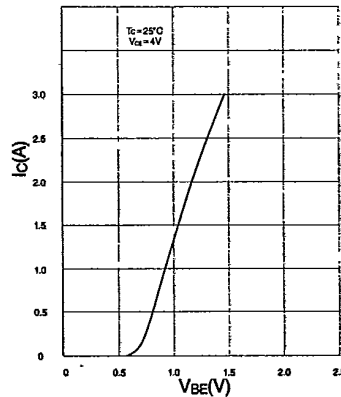
Cob vs. Vce characteristics



Area of Safe Operation (ASO) (Tc=25°C)



VBE vs. Ic characteristics



hFE vs Ic characteristics

