

TO-126 Plastic-Encapsulate Transistors

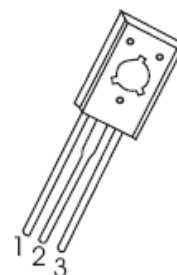
TIP29 Series TRANSISTOR (NPN)

FEATURES

- Designed for Use in General Purpose Amplifier and Switching Applications

TO - 126

1. BASE
2. COLLECTOR
3. EMITTER



MAXIMUM RATINGS ($T_a=25^{\circ}\text{C}$ unless otherwise noted)

Symbol	Parameter		Value	Unit
V_{CBO}	Collector-Base Voltage	TIP29	40	V
		TIP29A	60	
		TIP29B	80	
		TIP29C	100	
V_{CEO}	Collector-Emitter Voltage	TIP29	40	V
		TIP29A	60	
		TIP29B	80	
		TIP29C	100	
V_{EBO}	Emitter-Base Voltage		5	V
I_C	Collector Current(DC)		1	A
I_{CP}	Collector Current(Pulse)		3	A
P_C	Collector Power Dissipation		1.25	W
$R_{\theta JA}$	Thermal Resistance From Junction To Ambient		100	$^{\circ}\text{C/W}$
T_j	Junction Temperature		150	$^{\circ}\text{C}$
T_{stg}	Storage Temperature		-55~+150	$^{\circ}\text{C}$

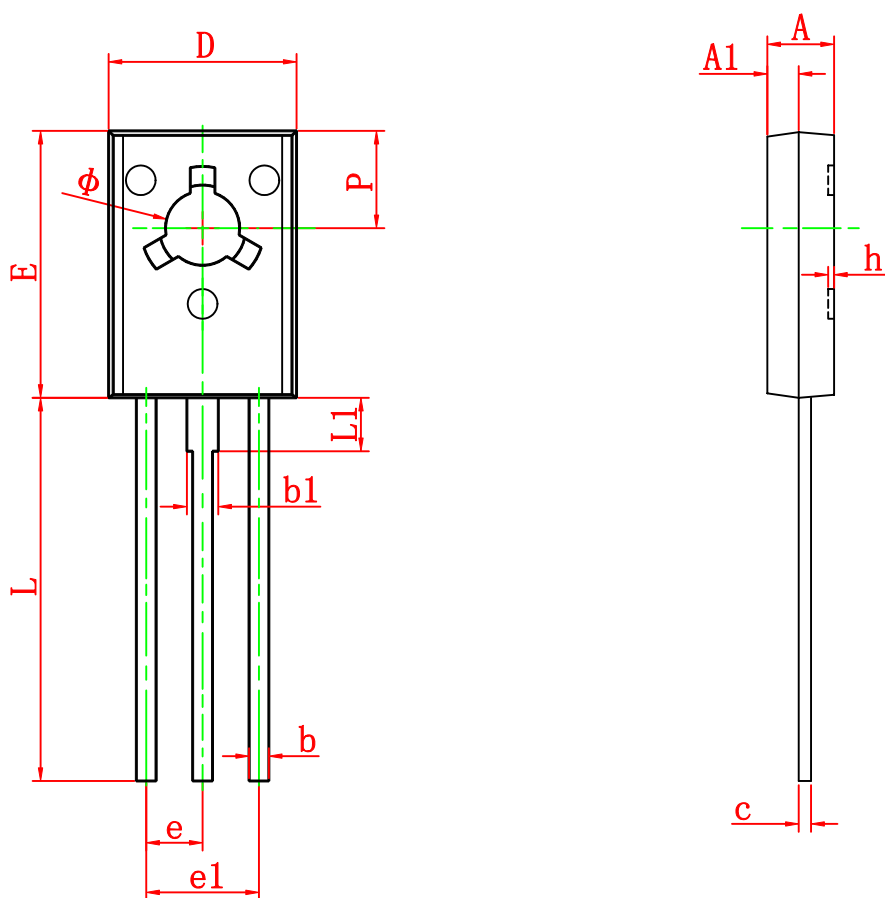
ELECTRICAL CHARACTERISTICS ($T_a=25^{\circ}\text{C}$ unless otherwise specified)

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C=100\mu\text{A}, I_E=0$	TIP29	40		V
			TIP29A			
			TIP29B			
			TIP29C			
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C=30\text{mA}, I_B=0$	TIP29	40		V
			TIP29A	60		
			TIP29B	80		
			TIP29C	100		
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E=100\mu\text{A}, I_C=0$	5			V
Collector cut-off current	I_{CEO}	$V_{CE}=30\text{V}, I_B=0$	TIP29/29A		0.3	mA
		$V_{CE}=60\text{V}, I_B=0$	TIP29B/29C			
Collector cut-off current	I_{CES}	$V_{CE}=40\text{V}, V_{EB}=0$	TIP29		200	μA
		$V_{CE}=60\text{V}, V_{EB}=0$	TIP29A		200	
		$V_{CE}=80\text{V}, V_{EB}=0$	TIP29B		200	
		$V_{CE}=100\text{V}, V_{EB}=0$	TIP29C		200	

Emitter cut-off current	I_{EBO}	$V_{EB}=5V, I_C=0$			1	mA
DC current gain	$h_{FE(1)}^*$	$V_{CE}=4V, I_C=0.2A$	40			
	$h_{FE(2)}^*$	$V_{CE}=4V, I_C=1A$	15		75	
Collector-emitter voltage	$V_{CE(sat)}^*$	$I_C=1A, I_B=125mA$			0.7	V
Base-emitter saturation voltage	V_{BE}^*	$V_{CE}=4V, I_C=1A$			1.3	V
Transition frequency	f_T	$V_{CE}=10V, I_C=200mA$	3			MHz

*Pulse test: pulse width $\leq 300\mu s$, duty cycle $\leq 2.0\%$.

TO-126 Package Outline Dimensions



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	2.500	2.900	0.098	0.114
A1	1.100	1.500	0.043	0.059
b	0.660	0.860	0.026	0.034
b1	1.170	1.370	0.046	0.054
c	0.450	0.600	0.018	0.024
D	7.400	7.800	0.291	0.307
E	10.600	11.000	0.417	0.433
e	2.290 TYP		0.090 TYP	
e1	4.480	4.680	0.176	0.184
h	0.000	0.300	0.000	0.012
L	15.300	15.700	0.602	0.618
L1	2.100	2.300	0.083	0.091
P	3.900	4.100	0.154	0.161
Φ	3.000	3.200	0.118	0.126