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Manufacturers of World Class Discrete Semiconductors

TIP29
TIP29A
TIP29B
TIP29C

SILICON NPN POWER TRANSISTOR
1 AMP, 30 WATTS

JEDEC TO-220 CASE

DESCRIPTION

The CENTRAL SEMICONDUCTOR TIP29 Series is a NPN Epitaxial-Base Silicon Power Transistor designed for power amplifier and high-speed switching applications.

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

	<u>SYMBOL</u>	<u>TIP29</u>	<u>TIP29A</u>	<u>TIP29B</u>	<u>TIP29C</u>	<u>UNIT</u>
Collector-Base Voltage	V_{CB0}	40	60	80	100	V
Emitter-Base Voltage	V_{EB0}	5.0	5.0	5.0	5.0	V
Collector-Emitter Voltage	V_{CE0}	40	60	80	100	V
Collector Current, Continuous	I_C	1.0	1.0	1.0	1.0	A
Collector Current, Peak	I_{CM}	3.0	3.0	3.0	3.0	A
Base Current	I_B	0.4	0.4	0.4	0.4	A
Power Dissipation	P_D	30	30	30	30	W
Power Dissipation ($T_A=25^{\circ}\text{C}$)	P_D	2.0	2.0	2.0	2.0	W
Operating and Storage Junction Temperature	T_J, T_{stg}	-65 TO +150		-65 TO +150		$^{\circ}\text{C}$

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

<u>SYMBOL</u>	<u>TEST CONDITIONS</u>	<u>MIN</u>	<u>MAX</u>	<u>UNIT</u>
I_{CE0}	$V_{CE}=30\text{V}$ (TIP29, TIP29A)		0.3	mA
I_{CE0}	$V_{CE}=60\text{V}$ (TIP29B, TIP29C)		0.3	mA
I_{CES}	$V_{CE}=\text{Rated } V_{CE0}$		0.2	mA
I_{EB0}	$V_{EB}=5.0\text{V}$		1.0	mA
BV_{CE0}	$I_C=30\text{mA}$, (TIP29)	40		V
BV_{CE0}	$I_C=30\text{mA}$, (TIP29A)	60		V
BV_{CE0}	$I_C=30\text{mA}$, (TIP29B)	80		V
BV_{CE0}	$I_C=30\text{mA}$, (TIP29C)	100		V
$V_{CE}(\text{SAT})$	$I_C=1.0\text{A}$, $I_B=125\text{mA}$		0.7	V
$V_{BE}(\text{on})$	$V_{CE}=4.0\text{V}$, $I_C=1.0\text{A}$		1.3	V
h_{FE}	$V_{CE}=4.0\text{V}$, $I_C=0.2\text{A}$	40		-
h_{FE}	$V_{CE}=4.0\text{V}$, $I_C=1.0\text{A}$	15	75	-
h_{fe}	$V_{CE}=10\text{V}$, $I_C=0.2\text{A}$, $f=1\text{ kHz}$	20		-
f_T	$V_{CE}=10\text{V}$, $I_C=0.2\text{A}$, $f=1\text{ MHz}$	3		MHz
t_{on}	$I_C=1.0\text{A}$, $I_{B1}=I_{B2}=100\text{mA}$, $R_L=30\text{ OHMS}$	0.5 TYP		μS
t_{off}	$I_C=1.0\text{A}$, $I_{B1}=I_{B2}=100\text{mA}$, $R_L=30\text{ OHMS}$	2.0 TYP		μS