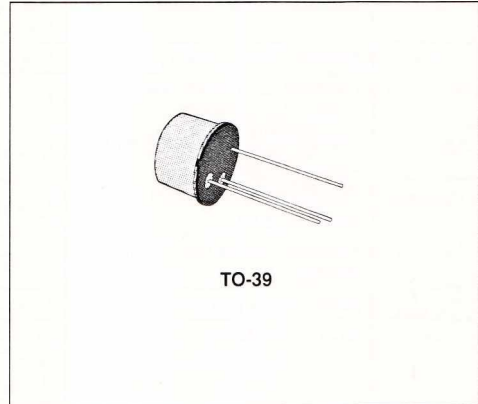


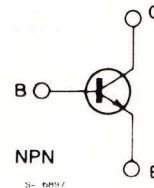
HIGH VOLTAGE AMPLIFIER

DESCRIPTION

The 2N3114 is a silicon planar epitaxial NPN transistor in Jedec TO-39 metal case. It is primarily intended for high voltage, medium power applications.



INTERNAL SCHEMATIC DIAGRAM



ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value	Unit
V_{CBO}	Collector-base Voltage ($I_E = 0$)	150	V
V_{CEO}	Collector-emitter Voltage ($I_B = 0$)	150	V
V_{EBO}	Emitter-base Voltage ($I_C = 0$)	5	V
I_C	Collector Current	150	mA
P_{tot}	Total Power Dissipation at $T_{amb} \leq 25^\circ\text{C}$ at $T_{case} \leq 25^\circ\text{C}$	0.8 5	W W
T_{stg}, T_J	Storage and Junction Temperature	65 to 200	$^\circ\text{C}$

THERMAL DATA

$R_{th\ j-case}$	Thermal Resistance Junction-case	Max	35	$^{\circ}C/W$
$R_{th\ j-amb}$	Thermal Resistance Junction-ambient	Max	219	$^{\circ}C/W$

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

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I_{CBO}	Collector Cutoff Current ($I_E = 0$)	$V_{CB} = 100\ V$ $V_{CB} = 100\ V$ $T_{amb} = 150\ ^{\circ}C$			10 10	nA μA
I_{EBO}	Emitter Cutoff Current ($I_C = 0$)	$V_{EB} = 4\ V$			100	nA
$V_{(BR)CBO}$	Collector-base Breakdown Voltage ($I_E = 0$)	$I_C = 100\ \mu A$	150			V
$V_{(BR)CEO}^*$	Collector-emitter Breakdown Voltage ($I_B = 0$)	$I_C = 10\ mA$	150			V
$V_{(BR)EBO}$	Emitter-base Breakdown Voltage ($I_C = 0$)	$I_E = 100\ \mu A$	5			V
$V_{CE(sat)}^*$	Collector-emitter Saturation Voltage	$I_C = 50\ mA$ $I_B = 5\ mA$			1	V
$V_{BE(sat)}^*$	Base-emitter Saturation Voltage	$I_C = 50\ mA$ $I_B = 5\ mA$			0.9	V
h_{FE}^*	DC Current Gain	$I_C = 100\ \mu A$ $V_{CE} = 10\ V$ $I_C = 30\ mA$ $V_{CE} = 10\ V$ $T_{amb} = -55\ ^{\circ}C$ $I_C = 30\ mA$ $V_{CE} = 10\ V$	15 30 12	35 60 24	120	
h_{fe}	High Frequency Current Gain	$I_C = 30\ mA$ $V_{CE} = 10\ V$ $f = 20\ MHz$	2			
C_{EBO}	Emitter-base Capacitance	$V_{EB} = 0.5\ V$ $f = 1\ MHz$			80	pF
C_{CBO}	Collector-base Capacitance	$V_{CB} = 20\ V$ $f = 1\ MHz$			9	pF

* Pulsed : pulse duration = 300 μs , duty cycle = 1 %.