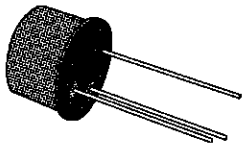
SGS-THOMSON MICROELECTRONICS

2N3114

HIGH VOLTAGE AMPLIFIER

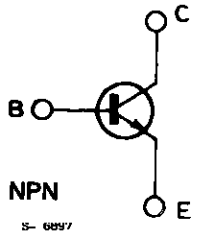
DESCRIPTION

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.



TO-39

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 $T_{amb} \leq 25$ °C at $T_{case} \leq 25$ °C	0.8 5	W W
T_{stg}, T_j	Storage and Junction Temperature	65 to 200	°C

THERMAL DATA

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

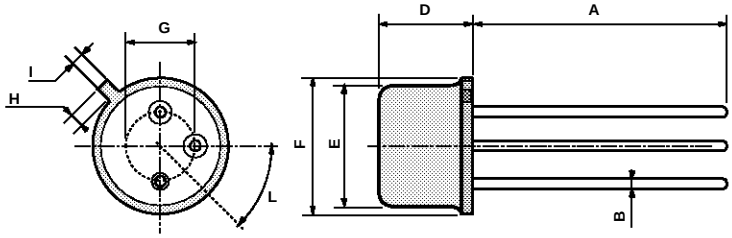
ELECTRICAL CHARACTERISTICS (T_{amb} = 25 °C unless otherwise specified)

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 °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 µA	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 µA	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 µA V_{CE} = 10 V I_C = 30 mA V_{CE} = 10 V T_{amb} = – 55 °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 %.

TO39 MECHANICAL DATA

DIM.	mm			inch		
	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.
A	12.7			0.500		
B			0.49			0.019
D			6.6			0.260
E			8.5			0.334
F			9.4			0.370
G	5.08			0.200		
H			1.2			0.047
I			0.9			0.035
L	45^{o} (typ.)					



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