

*New Jersey Semi-Conductor Products, Inc.*

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U.S.A.

# 2N3107 THROUGH 2N3110

THE 2N3107 THROUGH 2N3110 ARE NPN SILICON PLANAR EPITAXIAL TRANSISTORS FOR AF MEDIUM POWER DRIVERS AND OUTPUTS, AS WELL AS FOR SWITCHING APPLICATIONS UP TO 1 AMPERE. THEY ARE COMPLEMENTARY TO THE PNP 2N4032, 2N4030.

CASE TO-39



C E B

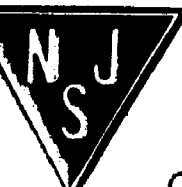
ABSOLUTE MAXIMUM RATINGS

		2N3107 2N3108	2N3109 2N3110
Collector-Base Voltage	VCBO	100V	80V
Collector-Emitter Voltage	VCEO	60V	40V
Emitter-Base Voltage	VEBO	7V	7V
Collector Current	IC		1A
Total Power Dissipation ( $T_C \leq 25^\circ C$ )	Ptot		5W
( $T_A \leq 25^\circ C$ )			800mW
Operating Junction & Storage Temperature	Tj, Tstg		-65 to 200°C

ELECTRICAL CHARACTERISTICS ( $T_A=25^\circ C$  unless otherwise noted)

PARAMETER	SYMBOL	MIN	MAX	UNIT	TEST CONDITIONS
Collector-Base Breakdown Voltage 2N3107, 2N3108 2N3109, 2N3110	BVCBO	100 80		V V	IC=0.1mA IE=0
Collector-Emitter Breakdown Voltage 2N3107, 2N3108 2N3109, 2N3110	LVCEO *	60 40		V V	IC=30mA IB=0
Emitter-Base Breakdown Voltage	BVEBO	7		V	IE=0.1mA IC=0
Collector Cutoff Current	ICES		10	nA	VCE=60V VBE=0
Collector Cutoff Current ( $T_A=150^\circ C$ )	ICBO		10	$\mu A$	VCB=60V IE=0
Emitter Cutoff Current	IEBO		10	nA	VEB=5V IC=0
Collector-Emitter Saturation Voltage	VCE(sat) *		0.25 1.0	V V	IC=150mA IB=15mA IC=1A IB=0.1A
Base-Emitter Saturation Voltage	VBE(sat) *		1.1 2.0	V V	IC=150mA IB=15mA IC=1A IB=0.1A
D.C. Current Gain 2N3107, 2N3109 only	HFE *		35 100 300 40		IC=0.1mA VCE=10V IC=150mA VCE=1V IC=500mA VCE=10V

NJ Semi-Conductors reserves the right to change test conditions, parameters limits and package dimensions without notice information furnished by NJ Semi-Conductors is believed to be both accurate and reliable at the time of going to press. However NJ Semi-Conductors assumes no responsibility for any errors or omissions discovered in its use. NJ Semi-Conductors encourages customers to verify that datasheets are current before placing orders.



Quality Semi-Conductors

PARAMETER	SYMBOL	MIN	MAX	UNIT	TEST CONDITIONS
2N3107, 2N3109 only	H <sub>FE</sub> *	30			I <sub>C</sub> =150mA V <sub>CE</sub> =10V T <sub>A</sub> =-55°C
D.C. Current Gain 2N3108, 2N3110 only	H <sub>FE</sub> *	20 40 25 15	120		I <sub>C</sub> =0.1mA V <sub>CE</sub> =10V I <sub>C</sub> =150mA V <sub>CE</sub> =1V I <sub>C</sub> =500mA V <sub>CE</sub> =10V I <sub>C</sub> =150mA V <sub>CE</sub> =10V T <sub>A</sub> =-55°C
Current Gain-Bandwidth Product 2N3107, 2N3109 2N3108, 2N3110	f <sub>T</sub>	70 60		MHz MHz	I <sub>C</sub> =50mA V <sub>CE</sub> =10V
Collector-Base Capacitance 2N3107, 2N3108 2N3109, 2N3110	C <sub>ob</sub>		20 25	pF pF	V <sub>CB</sub> =10V I <sub>E</sub> =0 f=1MHz
Emitter-Base Capacitance	C <sub>ib</sub>		80	pF	V <sub>EB</sub> =0.5V I <sub>C</sub> =0 f=1MHz
Noise Figure (f=1kHz)	NF		7	dB	I <sub>C</sub> =30μA V <sub>CE</sub> =10V R <sub>G</sub> =1kΩ
Turn-On Time	t <sub>on</sub>		200	nS	I <sub>C</sub> =150mA I <sub>B1</sub> =7.5mA
Turn-Off Time 2N3107, 2N3109 2N3108, 2N3110	t <sub>off</sub>		1000 600	nS nS	I <sub>C</sub> =150mA I <sub>B1</sub> =-I <sub>B2</sub> =7.5mA

\* Pulse Test : Pulse Width=0.3mS, Duty Cycle=1%