2N3107 THROUGH 2N3110

NPN SILICON AF MEDIUM POWER AMPLIFIERS & SWITCHES

MICRO ELECTRONICS

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

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ABSOLUTE MAXIMUM RATINGS

		2N3107 2N3108	2N3109 2N3110
Collector-Base Voltage	V_{CBO}	100V	80V
Collector-Emitter Voltage	V_{CEO}	60V	40V
Emitter-Base Voltage	V_{EBO}	7V	7V
Collector Current	I_C	1A	
Total Power Dissipation ($T_C \leq 25^oC$)	P_{tot}	5W	
($T_A \leq 25^oC$)		800mW	
Operating Junction & Storage Temperature	T_j, T_{stg}	-65 to 200°C	

ELECTRICAL CHARACTERISTICS ($T_A=25^oC$ unless otherwise noted)

PARAMETER	SYMBOL	MIN	MAX	UNIT	TEST CONDITIONS
Collector-Base Breakdown Voltage	BV_{CBO}				I_C=0.1mA I_E=0
2N3107, 2N3108		100		V	
2N3109, 2N3110		80		V	
Collector-Emitter Breakdown Voltage	LV_{CEO} *				I_C=30mA I_B=0
2N3107, 2N3108		60		V	
2N3109, 2N3110		40		V	
Emitter-Base Breakdown Voltage	BV_{EBO}	7		V	I_E=0.1mA I_C=0
Collector Cutoff Current	I_{CES}		10	nA	V_{CE}=60V V_{BE}=0
Collector Cutoff Current ($T_A=150^oC$)	I_{CBO}		10	μA	V_{CB}=60V I_E=0
Emitter Cutoff Current	I_{EBO}		10	nA	V_{EB}=5V I_C=0
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$*		0.25	V	I_C=150mA I_B=15mA
			1.0	V	I_C=1A I_B=0.1A
Base-Emitter Saturation Voltage	$V_{BE(sat)}$*		1.1	V	I_C=150mA I_B=15mA
			2.0	V	I_C=1A I_B=0.1A
D.C. Current Gain	H_{FE} *				
2N3107, 2N3109 only		35			I_C=0.1mA V_{CE}=10V
		100	300		I_C=150mA V_{CE}=1V
		40			I_C=500mA V_{CE}=10V

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PARAMETER	SYMBOL	MIN	MAX	UNIT	TEST CONDITIONS
2N3107, 2N3109 only	H_{FE} *	30			I_C=150mA V_{CE}=10V T_A=-55°C
D.C. Current Gain	H_{FE} *	20			I_C=0.1mA V_{CE}=10V
		40	120		I_C=150mA V_{CE}=1V
2N3108, 2N3110 only		25			I_C=500mA V_{CE}=10V
		15			I_C=150mA V_{CE}=10V T_A=-55°C
Current Gain-Bandwidth Product	f_T				I_C=50mA V_{CE}=10V
2N3107, 2N3109		70		MHz	
2N3108, 2N3110		60		MHz	
Collector-Base Capacitance	Cob				V_{CB}=10V I_E=0 f=1MHz
2N3107, 2N3108			20	pF	
2N3109, 2N3110			25	pF	
Emitter-Base Capacitance	Cib		80	pF	V_{EB}=0.5V I_C=0 f=1MHz
Noise Figure (f=1KHz)	NF		7	dB	I_C=30μA V_{CE}=10V R_G=1KΩ
Turn-On Time	t_{on}		200	nS	I_C=150mA I_{B1}=7.5mA
Turn-Off Time 2N3107, 2N3109	t_{off}		1000	nS	I_C=150mA I_{B1}=-I_{B2}=7.5mA
2N3108, 2N3110			600	nS	

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