2N 3707 through 2N 3711
2N 4058 through 2N 4062

NPN . PNP SILICON AF SMALL SIGNAL TRANSISTORS

MICRO ELECTRONICS

THE 2N3707 THROUGH 2N3711 (NPN) AND 2N4058 THROUGH 2N4062 (PNP) ARE COMPLEMENTARY SILICON PLANAR EPITAXIAL TRANSISTORS FOR USE IN AF SMALL SIGNAL AMPLIFIER STAGES AND DIRECT COUPLED CIRCUITS.

CASE TO-92B

ECB

ABSOLUTE MAXIMUM RATINGS (For p-n-p devices, voltage and current values are negative)		(NPN) 2N3707 thru' 2N3711	(PNP) 2N4058 thru' 2N4062
Collector-Base Voltage	V_{CBO}	30V	30V
Collector-Emitter Voltage	V_{CEO}	30V	30V
Emitter-Base Voltage	V_{EBO}	6V	6V
Collector Current	I_C	200mA	100mA **
Total Power Dissipation ($T_A \leq 25^oC$)	P_{tot}	360mW derate 2.88mW/°C above 25°C	
Operating Junction & Storage Temperature	T_j, T_{stg}	-55 to 150°C	

** 30mA in JEDEC registration.

ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise noted)

PARAMETER	SYMBOL	NPN MIN	NPN MAX	PNP MIN	PNP MAX	UNIT	TEST CONDITIONS
Collector-Base Breakdown Voltage	BV_{CBO}	30		30		V	I_C=0.01mA I_E=0
Collector-Emitter Breakdown Voltage	LV_{CEO}	30		30		V	I_C=1mA I_B=0(Pulsed)
Collector Cutoff Current	I_{CBO}		100		100	nA	V_{CB}=20V I_E=0
Emitter Cutoff Current	I_{EBO}		100		100	nA	V_{EB}=6V I_C=0
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$		1		0.7	V	I_C=10mA I_B=0.5mA
Base-Emitter Voltage	V_{BE}	0.5	1	0.5	1	V	I_C=1mA V_{CE}=5V
Noise Figure *	NF				5	dB	I_C=0.1mA V_{CE}=5V R_G=5KΩ f=30Hz-15KHz
			5			dB	I_C=0.1mA V_{CE}=5V R_G=10KΩ f=30Hz-15KHz

* For 2N3707 and 2N4058 only.

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D.C. AND SMALL SIGNAL CURRENT GAIN (H_{FE}, h_{fe}) AT V_{CE}=5V T_A=25°C

PARAMETER \ NPN / PNP	2N3707 / 2N4058		2N3708 / 2N4059		2N3709 / 2N4060		2N3710 / 2N4061		2N3711 / 2N4062	
	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX
H_{FE} at I_C=0.1mA	100	400								
H_{FE} at I_C=1mA			45	660	45	165	90	330	180	660
h_{fe} at I_C=0.1mA f=1KHz	100	550								
h_{fe} at I_C=1mA f=1KHz			45	800	45	250	90	450	180	800

TYPICAL CHARACTERISTICS AT T_A=25°C