

2N 3707 through 2N 3711

2N 4058 through 2N 4062

NPN . PNP SILICON AF SMALL SIGNAL TRANSISTORS



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)		(PNP)	
		2N3707 thru'	2N3711	2N4058 thru'	2N4062
Collector-Base Voltage	V <sub>CB0</sub>	30V		30V	
Collector-Emitter Voltage	V <sub>CEO</sub>	30V		30V	
Emitter-Base Voltage	V <sub>EB0</sub>	6V		6V	
Collector Current	I <sub>C</sub>	200mA		100mA	**
Total Power Dissipation (T <sub>A</sub> ≤ 25°C)	P <sub>tot</sub>	360mW		derate 2.88mW/°C above 25°C	
Operating Junction & Storage Temperature T <sub>j</sub> , T <sub>stg</sub>		-55 to 150°C			

\*\* 30mA in JEDEC registration.

ELECTRICAL CHARACTERISTICS (T<sub>A</sub>=25°C unless otherwise noted)

PARAMETER	SYMBOL	NPN		PNP		UNIT	TEST CONDITIONS
		MIN	MAX	MIN	MAX		
Collector-Base Breakdown Voltage	BV <sub>CB0</sub>	30		30		V	I <sub>C</sub> =0.01mA I <sub>E</sub> =0
Collector-Emitter Breakdown Voltage	LV <sub>CEO</sub>	30		30		V	I <sub>C</sub> =1mA I <sub>B</sub> =0 (Pulsed)
Collector Cutoff Current	I <sub>CB0</sub>		100		100	nA	V <sub>CB</sub> =20V I <sub>E</sub> =0
Emitter Cutoff Current	I <sub>EB0</sub>		100		100	nA	V <sub>EB</sub> =6V I <sub>C</sub> =0
Collector-Emitter Saturation Voltage	V <sub>CE(sat)</sub>		1		0.7	V	I <sub>C</sub> =10mA I <sub>B</sub> =0.5mA
Base-Emitter Voltage	V <sub>BE</sub>	0.5	1	0.5	1	V	I <sub>C</sub> =1mA V <sub>CE</sub> =5V
Noise Figure *	NF				5	dB	I <sub>C</sub> =0.1mA V <sub>CE</sub> =5V R <sub>G</sub> =5KΩ f=30Hz-15KHz
			5			dB	I <sub>C</sub> =0.1mA V <sub>CE</sub> =5V R <sub>G</sub> =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  $V_{CE}=5V$   $T_A=25^\circ C$

PARAMETER	NPN	2N3707		2N3708		2N3709		2N3710		2N3711	
	PNP	2N4058		2N4059		2N4060		2N4061		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  $T_A=25^\circ C$

