PN4248, PN4249, PN4250

PNP SILICON AF LOW NOISE SMALL SIGNAL TRANSISTORS

MICROELECTRONICS

PN42248, PN4249, PN4250 are PNP silicon planar transistors for AF low noise preamplifier applications.

CASE TO-92A

EBC

ABSOLUTE MAXIMUM RATINGS

		PN4248	PN4250	PN4249
Collector-Base Voltage	$-V_{CBO}$	40V	40V	60V
Collector-Emitter Voltage	$-V_{CEO}$	40V	40V	60V
Emitter-Base Voltage	$-V_{EBO}$	5V	5V	5V
Collector Current	$-I_C$		50mA	
Total Power Dissipation ($T_C \leq 65^oC$)	P_{tot}		300mW	
($T_A \leq 25^oC$)			200mW	
Operating Junction & Storage Temperature	T_j, T_{stg}		-55 to 125°C	

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

PARAMETER	SYMBOL	PN4248 MIN	PN4248 MAX	P N4249 MIN	P N4249 MAX	PN4250 MIN	PN4250 MAX	UNIT	TEST CONDITIONS
Collector-Base Breakdown Voltage	$-BV_{CBO}$	40		60		40		V	$-I_C$=0.01mA I_E=0
Collector-Emitter Breakdown Voltage	$-BV_{CES}$	40		60		40		V	$-I_C$=0.01mA V_{BE}=0
Collector-Emitter Breakdown Voltage	$-LV_{CEO}$	40		60		40		V	$-I_C$=5mA (Pulsed) I_B=0
Emitter-Base Breakdown Voltage	$-BV_{EBO}$	5		5		5		V	$-I_E$=0.01mA I_C=0
Collector Cutoff Current	$-I_{CBO}$		10		10		10	nA	$-V_{CB}$=40V I_E=0
			3		3		3	µA	$-V_{CB}$=40V I_E=0 $T_A=65^oC$
Emitter Cutoff Current	$-I_{EBO}$		20		20		20	nA	$-V_{EB}$=3V I_C=0
Collector-Emitter Saturation Voltage	$-V_{CE(sat)}$		0.25		0.25		0.25	V	$-I_C$=10mA $-I_B$=0.5mA
Base-Emitter Saturation Voltage	$-V_{BE(sat)}$		0.9		0.9		0.9	V	-IC=10mA -IB=0.5mA
D.C. Current Gain	H_{FE}	50		100	300	250	700		-IC=100µA -VCE=5V
		50		100		250			-IC=1mA -VCE=5V
		50		100		250			-IC=10mA -VCE=5V

MICRO ELECTRONICS LTD. 38 HUNG TO ROAD, KWUN TONG, HONG KONG. TELEX 43510
KWUN TONG P. O. BOX69477 CABLE ADDRESS "MICROTRON" FAX: 3-410321
TELEPHONE:- 3-430181-6 ~~3-893363, 3-892423~~

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PARAMETER	SYMBOL	PN4248 MIN	PN4248 MAX	PN4249 MIN	PN4249 MAX	PN4250 MIN	PN4250 MAX	UNIT	TEST CONDITIONS
Small Signal Current Gain	h_{fe}	50	1000	100	550	250	800		$-I_C$=1mA $-V_{CE}$=5V f=1kHz
Input Impedance	h_{ie}			2.5	17	6	20	KΩ	$-I_C$=1mA $-V_{CE}$=5V f=1kHz
Output Admittance	h_{oe}			5	40	5	50	μU	$-I_C$=1mA $-V_{CE}$=5V f=1kHz
Voltage Feedback Ratio	h_{re}				10		10	$x10^{-4}$	$-I_C$=1mA $-V_{CE}$=5V f=1kHz
Current Gain-Bandwidth Product	f_T	40		40		50		MHz	$-I_C$=0.5mA $-V_{CE}$=5V
Collector-Base Capacitance	Cob		6		6		6	pF	$-V_{CB}$=5V I_E=0 f=1MHz
Emitter-Base Capacitance	Cib		16		16		16	pF	$-V_{EB}$=0.5V I_C=0 f=1MHz
Noise Figure	NF				3		2	dB	$-I_C$=20μA $-V_{CE}$=5V R_G=10KΩ f=1kHz
					3		2	dB	$-I_C$=20μA $-V_{CE}$=5V R_G=10KΩ f=10Hz-10kHz
					3		2	dB	$-I_C$=250μA $-V_{CE}$=5V R_G=1KΩ f=1kHz