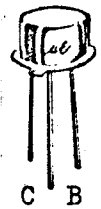
MICRO ELECTRONICS

2N/PN2904A
2N/PN2905A

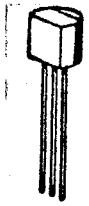
PNP
SILICON
TRANSISTORS

2N/PN2904A & 2N/PN2905A are PNP silicon planar epitaxial transistors. It is intended for high speed medium power switching and general purpose amplifier applications.

TO-39



TO-92A



ABSOLUTE MAXIMUM RATINGS

		2N2904A 2N2905A	PN2904A PN2905A
Collector-Base Voltage	V_{CBO}	60V	60V
Collector-Emitter Voltage	V_{CEO}	60V	60V
Emitter-Base Voltage	V_{EBO}	5V	5V
Collector Current	I_C	600mA	600mA
Total Power Dissipation @ $T_A \leq 25^\circ C$	P_{tot}	600mW	500mW
@ $T_C \leq 25^\circ C$		3W	1.2W
Operating Junction & Storage Temperature	T_j, T_{stg}	-65 to +200°C	-55 to +150°C

ELECTRICAL CHARACTERISTICS @ $T_A=25^\circ C$ (unless otherwise stated) :

PARAMETER	SYMBOL	2N/PN2904A MIN	2N/PN2904A MAX	2N/PN2905A MIN	2N/PN2905A MAX	UNIT	TEST CONDITIONS
Collector-Base Cutoff Current	I_{CBO}		10		10	nA	$V_{CB}=50V$ $I_E=0$
Collector-Base Cutoff Current	I_{CBO}		10		10	uA	$V_{CB}=50V$ $I_E=0$ $T_A=150^\circ C$
Collector Cutoff Current	I_{CEX}		50		50	nA	$V_{CE}=30V$ $V_{BE}=0.5V$
Base Cutoff Current	I_B		50		50	nA	$V_{CE}=30V$ $V_{BE}=0.5V$
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$		1.6		1.6	V	$I_C=500mA$ $I_B=50mA$
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$		0.4		0.4	V	$I_C=150mA$ $I_B=15mA$
Base-Emitter Saturation Voltage	$V_{BE(sat)}$		1.3		1.3	V	$I_C=150mA$ $I_B=15mA$
Base-Emitter Saturation Voltage	$V_{BE(sat)}$		2.6		2.6	V	$I_C=500mA$ $I_B=50mA$
D.C. Current Gain	h_{FE}	40		75			$I_C=0.1mA$ $V_{CE}=10V$

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PARAMETER	SYMBOL	2N/PN2904 A MIN	2N/PN2904 A MAX	2N/PN2905A MIN	2N/PN2905A MAX	UNIT	TEST CONDITIONS
D.C. Current Gain	h_{FE}	40		100			I_C=1mA V_{CE}=10V
D.C. Current Gain	h_{FE}	40		100			I_C=10mA V_{CE}=10V
D.C. Current Gain	h_{FE}	40	120	100	300		I_C=150mA V_{CE}=10V
D.C. Current Gain	h_{FE}	40		50			I_C=500mA V_{CE}=10V
Output Capacitance	Cob		8		8	pF	V_{CB}=10V I_E=0 f=1MHz
Input Capacitance	Cib		30		30	pF	V_{EB}=2V I_C=0 f=1MHz
High Frequency Current Gain	h_{fe}	2		2			V_{CE}=20V I_C=50mA f=100MHz

SWITCHING CHARACTERISTICS :

PARAMETER	SYMBOL	MIN	TYP	MAX	UNIT	TEST CONDITIONS
Delay Time	t_d		6	10	nsec	I_C=150mA I_B=15mA
Rise Time	t_r		15	40	nsec	V_C=30V
Turn-On Time	t_{on}		21	45	nsec	
Storage Time	t_s		60	80	nsec	I_C=150mA
Fall Time	t_f		20	20	nsec	I_{B1}=I_{B2}=15mA
Turn-Off Time	t_{off}		80	100	nsec	V_C=6V