

SILICON PLANAR
SWITCHING TRANSISTOR

2N 2904A,05A-TD-39

2N 2906A,07A-TD-18

PNP



SWITCHING AND LINEAR APPLICATION, DC AND VHF AMPLIFIERS APPLICATIONS.

DESCRIPTION	SYMBOL	2904A,05A	2906A,07A	UNITS
Collector-Emitter Voltage	V _{CEO}	60	60	V
Collector-Base Voltage	V _{CBO}	60	60	V
Emitter-Base Voltage	V _{EB0}	5	5	V
Collector Current	I _{CM}	600	600	mA
Power Dissipation At T _a =25 deg C	P _D	600	400	mW
Derate Above 25deg C		3.43	2.28	mW/deg C
At T _c =25 deg C	P _D	3	1.8	W
Derate Above 25deg C		17.2	10.3	mW/deg C
Operating & Storage Junction	T _j ,T _{stg}	-65 TO +200		deg C

ELECTRICAL CHARACTERISTICS (T_a =25 deg C unless otherwise specified)

CHARACTERISTICS	SYMBOL	TEST CONDITION	VALUE		UNIT
			MIN	MAX	
Collector Emitter Breakdown Voltage	BV _{CEO} †	I _C = 10 mA, I _B =0	60	-	V
Collector Base Breakdown Voltage	BV _{CBO}	I _C = 10 uA, I _E = 0	60	-	V
Emitter Base Breakdown Voltage	BV _{EB0}	I _E = 10 uA, I _C = 0	5	-	V
Collector Cutoff Current	I _{CBO}	V _{CB} =50V, I _E =0	-	10	nA
		V _{CB} =50V, I _E =0 T _a =150 deg C	-	10	nA
Collector Cutoff Current	I _{CEX}	V _{CE} =30V, V _{BE} =0.5V	-	50	nA
Base Current	I _B	V _{CE} =30V, V _{BE} =0.5V	-	50	nA
Collector-Emitter Saturation Voltage	V _{CE (sat)‡}	I _C =150 mA, I _B =15 mA	-	0.4	V
Base-Emitter Saturation Voltage	V _{BE (sat)‡}	I _C =150 mA, I _B =15 mA	-	1.3	V
Collector-Emitter Saturation Voltage		I _C =500 mA, I _B =50 mA	-	1.6	V
Base-Emitter Saturation Voltage		I _C =500 mA, I _B =50 mA	-	2.6	V

CONTD..2

CHARACTERISTICS	SYMBOL	TEST CONDITION	2N2904A, 06A		2N2905A, 07A		UNIT
			MIN	MAX	MIN	MAX	
D.C. Current Gain	hFE	IC=0.1 mA, VCE=10 V	40	-	75	-	
		IC=1mA, VCE=10 V	40	-	100	-	
		IC=10 mA, VCE=10 V	40	-	100	-	
		IC=150 mA, VCE=10 V†	40	120	100	300	
		IC=500 mA, VCE=10V†	40	-	50	-	

DYNAMIC CHARACTERISTICS

CHARACTERISTICS	SYMBOL	TEST CONDITION	MIN	MAX	UNITS
Transition Frequency	fT	IC=50 mA, VCE= 20 V, f=100 MHz	200	-	MHz
Output Capacitance	Cob	VCE=10V, IE=0, f=100KHz	-	8	pF
Input Capacitance	Cib	VBE=2V, IC=0, f=100KHz	-	30	pF

SWITCHING CHARACTERISTICS

Delay Time	td		-	10	ns
Rise Time	tr	IC=150mA, IB1=15mA VCC=30V	-	40	ns
Turn-On Time	ton		-	45	ns
Storage Time	ts		-	80	ns
Fall Time	tf	IC=150 mA, IB1=15mA IB2=15 mA, VCC=6V	-	30	ns
Turn-Off Time	toff		-	100	ns

† Pulse condition : Length ≤ 300 us, Duty cycle ≤ 2%

ZA3009930E/1H