

TYPES 2N910, 2N911, 2N912, 2N1973, 2N1974, 2N1975
N-P-N DOUBLE-DIFFUSED PLANAR SILICON TRANSISTORS

*electrical characteristics at 25°C free-air temperature (unless otherwise noted)

PARAMETER	TEST CONDITIONS	TO-18 →	2N910		2N911		2N912		UNIT
		TO-5 →	2N1973	2N1974	2N1975				
BV _{CB0} Collector-Base Breakdown Voltage	I _C = 100 μa, I _E = 0		MIN	MAX	MIN	MAX	MIN	MAX	
BV _{CEO} Collector-Emitter Breakdown Voltage	I _C = 30 ma, I _B = 0 (See Note 7)		100		100		100		v
BV _{CER} Collector-Emitter Breakdown Voltage	I _C = 100 ma, R _{BE} = 10 Ω (See Note 7)		80		80		80		v
BV _{EB0} Emitter-Base Breakdown Voltage	I _E = 100 μa, I _C = 0		7.0		7.0		7.0		v
I _{CB0} Collector Cutoff Current	V _{CB} = 75 v, I _E = 0			25		25		25	na
I _{EB0} Emitter Cutoff Current	V _{EB} = 5 v, I _C = 0			15		15		15	μa
h _{FE} Static Forward Current Transfer Ratio	V _{CE} = 10 v, I _C = 10 ma (See Note 7)		35		20		10		
	V _{CE} = 10 v, I _C = 10 ma, T _A = 150°C		75		35		15		
	V _{CE} = 10 v, I _C = 10 ma, T _A = -55°C (See Note 7)		30		15		10		
V _{BE} Base-Emitter Voltage	I _B = 1 ma, I _C = 10 ma		0.6	0.8	0.6	0.8	0.6	0.8	v
	I _B = 5 ma, I _C = 50 ma			0.9		0.9		0.9	v
V _{CE(sat)} Collector-Emitter Saturation Voltage	I _B = 1 ma, I _C = 10 ma			0.4		0.4		0.4	v
	I _B = 5 ma, I _C = 50 ma			1.2		1.2		1.2	v
h _{ib} Small-Signal Common-Base Input Impedance	V _{CB} = 5 v, I _C = 1 ma, f = 1 kc		20	30	20	30	20	30	ohm
	V _{CB} = 5 v, I _C = 5 ma, f = 1 kc		4.0	8.0	4.0	8.0	4.0	8.0	ohm
h _{rb} Small-Signal Common-Base Reverse Voltage Transfer Ratio	V _{CB} = 5 v, I _C = 1 ma, f = 1 kc		3 x 10 ⁻⁴		1.25 x 10 ⁻⁴		1.25 x 10 ⁻⁴		
	V _{CB} = 5 v, I _C = 5 ma, f = 1 kc		4 x 10 ⁻⁴		1.75 x 10 ⁻⁴		1.75 x 10 ⁻⁴		
h _{ob} Small-Signal Common-Base Output Admittance	V _{CB} = 5 v, I _C = 1 ma, f = 1 kc			0.5		0.5		0.5	μmho
	V _{CB} = 5 v, I _C = 5 ma, f = 1 kc			1.0		1.0		1.0	μmho
h _{ie} Small-Signal Common-Emitter Input Impedance	V _{CE} = 5 v, I _C = 5 ma, f = 1 kc		1800		1000		600		ohm
h _{fe} Small-Signal Common-Emitter Forward Current Transfer Ratio	V _{CE} = 5 v, I _C = 1 ma, f = 1 kc		76	200	36	90	18	50	
	V _{CE} = 5 v, I _C = 5 ma, f = 1 kc		80	200	40	100	20	50	
h _{oe} Small-Signal Common-Emitter Output Admittance	V _{CE} = 5 v, I _C = 5 ma, f = 1 kc		100		50		25		μmho
h _{re} Small-Signal Common-Emitter Reverse Current Transfer Ratio	V _{CE} = 10 v, I _C = 50 ma, f = 20 mc		3.0		2.5		2.0		
C _{ob} Common-Base Open-Circuit Output Capacitance	V _{CB} = 10 v, I _E = 0, f = 1 mc		15		15		15		pf
C _{ib} Common-Base Open-Circuit Input Capacitance	V _{EB} = 0.5 v, I _C = 0, f = 1 mc		85		85		85		pf

*operating characteristics at 25°C free-air temperature

PARAMETER	TEST CONDITIONS	TO-18 →	2N910	2N911	2N912	UNIT
		TO-5 →	2N1973	2N1974	2N1975	
NF Spot Noise Figure	V _{CB} = 10 v, I _C = 300 μa, R _B = 510 Ω f = 1 kc, Noise Bandwidth = 200 cps		MAX	MAX	MAX	
			12	15	18	db

NOTE 7: These parameters must be measured using pulse techniques. PW ≤ 300 μsec, Duty Cycle ≤ 2%. Pulse width must be such that halving or doubling does not cause a change greater than the required accuracy of the measurement.

*Indicates JEDEC Registered Data.