

2N3565 • PN3565

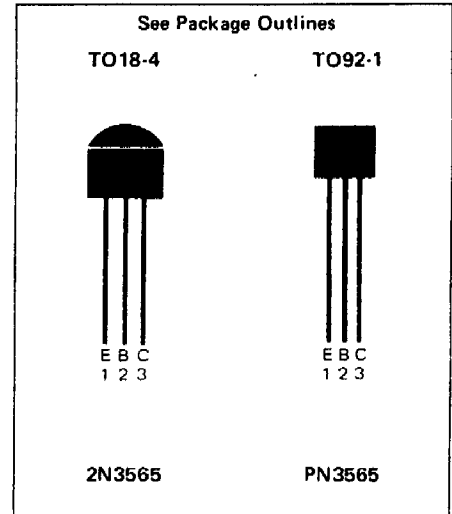
NPN LOW LEVEL HIGH GAIN AMPLIFIERS

DIFFUSED SILICON PLANAR* EPITAXIAL TRANSISTORS

- $P_D \dots 625 \text{ mW} @ T_A = 25^\circ\text{C}$
- $h_{FE} \dots 150 - 600 @ 1.0 \text{ mA}$
- $V_{CEO} \dots 25 \text{ V (MIN)}$

ABSOLUTE MAXIMUM RATINGS (Note 1)

	2N3565	PN3565
Maximum Temperatures		
Storage Temperature	-55°C to +125°C	-55°C to +150°C
Operating Junction Temperature	125°C	150°C
Lead Temperature	260°C	260°C
Maximum Power Dissipation (Note 2)		
Total Dissipation at 25°C Case Temperature	0.5 W	1.0 W
at 65°C Case Temperature	0.3 W	
at 25°C Ambient Temperature	0.2 W	0.625 W
Maximum Voltages and Current		
V_{CB0} Collector to Base Voltage	30 V	30 V
V_{CEO} Collector to Emitter Voltage (Note 3)	25 V	25 V
V_{EBO} Emitter to Base Voltage	6.0 V	6.0 V
I_C Collector Current	50 mA	50 mA



ELECTRICAL CHARACTERISTICS (25°C Ambient Temperature unless otherwise noted)

SYMBOL	CHARACTERISTIC	MIN.	MAX.	UNITS	TEST CONDITIONS
h_{FE}	DC Current Gain	150	600		$I_C = 1.0 \text{ mA}, V_{CE} = 10 \text{ V}$
th_{FE}	DC Current Gain	70			$I_C = 100 \mu\text{A}, V_{CE} = 10 \text{ V}$
h_{fe}	High Frequency Current Gain	2.0	12		$I_C = 1.0 \text{ mA}, V_{CE} = 5.0 \text{ V}, f = 20 \text{ MHz}$
$V_{CE(sat)}$	Collector Saturation Voltage		0.35	V	$I_C = 1.0 \text{ mA}, I_B = 0.1 \text{ mA}$
I_{CBO}	Collector Cutoff Current		50	nA	$I_E = 0, V_{CB} = 25 \text{ V}$
I_{CBO}	Collector Cutoff Current		3.0	μA	$I_E = 0, V_{CB} = 25 \text{ V}, T_A = 65^\circ\text{C}$
C_{ob}	Open Circuit Output Capacitance		4.0	pF	$I_E = 0, V_{CB} = 5.0 \text{ V}, f = 140 \text{ kHz}$
V_{VCBO}	Collector to Base Breakdown Voltage	30		V	$I_E = 0, I_C = 100 \mu\text{A}$
$V_{VCEO(sus)}$	Collector to Emitter Sustaining Voltage	25		V	$I_B = 0, I_C = 2.0 \text{ mA}$
V_{VEBO}	Emitter to Base Breakdown Voltage	6.0		V	$I_C = 0, I_E = 10 \mu\text{A}$
h_{ie}	Input Resistance	2.0	20	$k\Omega$	$I_C = 1.0 \text{ mA}, V_{CE} = 5.0 \text{ V}, f = 1.0 \text{ kHz}$
h_{oe}	Output Conductance	0.5	100	μmhos	$I_C = 1.0 \text{ mA}, V_{CE} = 5.0 \text{ V}, f = 1.0 \text{ kHz}$
h_{fe}	Small Signal Current Gain	120	750		$I_C = 1.0 \text{ mA}, V_{CE} = 5.0 \text{ V}, f = 1.0 \text{ kHz}$