20 STERN AVE. SPRINGFIELD, NEW JERSEY 07081 U.S.A.

2N3741

TELEPHONE: (973) 376-2922 (212) 227-6005

FAX: (973) 376-8960

MEDIUM-POWER PNP TRANSISTORS

***MAXIMUM RATINGS**

Rating	Symbol		Unit
Collector-Emitter Voltage	VCEO	80	Vdc
Emitter-Base Voltage	VEB	7.0	Vdc
Collector-Base Voltage	VCB	80	Vdc
Collector Current — Continuous — Peak.	lc	4.0	Adc
Base Current	l _B	2.0	. Adc
Total Device Dissipation ⊕ T _C = 25°C Derate above 25°C	PD	25 0.143	Watts W/ ^O C
Operating and Storage Junction Temperature Range	T _J ,T _{stg}	-65 to +200	°C

*ELECTRICAL CHARACTERISTICS (TC = 25°C unless otherwise noted)

Characteristic	•	Symbol	Min	Max	Unit
OFF CHARACTERISTICS				,	
Collector-Emitter Sustaining Voltage ①		VCEO(sus) ①		· '	Vdc
(I _C = 100 mAdc, I _B = 0)			80	_	1
Emitter Base Cutoff Current		IEBO	1 -		
(VEB = 7.0 Vdc)		1 .580	_	0.5	mAd
(VEB 1/10 100)					nAdd
Collector Cutoff Current		ICEX			
					l
(V _{CE} = 80 Vdc, V _{BE(off)} = 1.5 Vdc)	•		_	100	μAde
(ACE - 90 AGE, ARE(911) - 1:2 AGE)					
(VCE = 60 Vdc, VBE(off) = 1.5 Vdc, TC = 150°C)		,	_	1.0	mAd
THE STATE OF THE CONT.				L	
Collector-Emitter Cutoff Current		CEO	1		
		,	ł		
(VCE = 60 Vdc, Ig = 0)			l	1.0	mAd
(ACE - 00 Age, 18 - 0)	•				
Collector Base Cutoff Current		СВО			
					l
(VCB = 80 Vdc, IE = 0)			_	100	μAdo
(ACB - 90 Age' IE - 0)	•				
N CHARACTERISTICS					
DC Current Gein		hFE(1)	•		-
(I _C = 100 mAdc, V _{CE} = 1.0 Vdc)		•	40	<i>5</i> .	
(IC = 250 mAdc, VCE = 1.0 Vdc)			30 20	100	
(IC = 500 mAde, VCE = 1.0 Vde)			10	_	
(I _C = 1.0 Adc, V _{CE} = 1.0 Vdc) Collector-Emitter Saturation Voltage		Vost vi		0.6	Vdc
(I _C = 1.0 Adc, I _B = 125 mAdc)	* , * .	VCE (set)		0.0	""
Bese-Emitter Voltage		VBE(1)		1.0	Vdc
(IC = 250 mAde, VCE = 1.0 Vde)		· BE ()			
RANSIENT CHARACTERISTICS					
Current-Gain-Bandwidth Product	1	fr			MHz
(IC = 100 mAdc, VCE = 10 Vdc, f = 1.0 MHz)	l	'	4.0	_	
					l
Common Base Output Capacitance		Cop	-	100	pF
(VCB = 10 Vdc, IC = 0, f = 100 kHz)	1				
-					

customers to verify that datasheets are current before placing orders

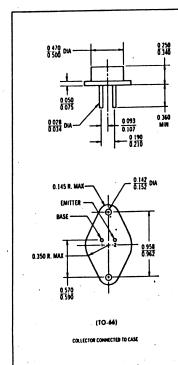
(IC = 50 mAde, VCE = 10 Vdc, f = 1.0 k'+z)

Small-Signal Current Gain

NJ Semi-Conductors reserves the right to change test conditions, parameter limits and package dimensions without notice. Information furnished by NJ Semi-Conductors is believed to be both accurate and reliable at the time of going to press. However NJ Semi-Conductors assumes no responsibility for any errors or omissions discovered in its use. NJ Semi-Conductors encourages



25



^{*}Indicates JEDEC Registered Date.

① Pulse Test: Pulse Width ≤ 300 μs, Duty Cycle ≤2.0%.

SMALL-SIGNAL CHARACTERISTICS

Current-Gain - Bandwidth Product (2)	/T		<u> </u>	MHz
(I _C = 1.0 mAdc, V _{CE} = 10 Vdc, f = 20 MHz) (I _C = 50 mAdc, V _{CE} = 20 Vdc, f = 100 MHz)	.]	60	, - :	
		200	600	
Output Capacitance (VCB = 10 Vdc, IE = 0, f = 1.0 MHz)	Cop	· -	8.0	pF
Input Capacitance (V _{EB} = 0.5 Vdc, I _C = 0, f = 1.0 MHz)	C _{ib}	-	, 30	pF
Input Impedance (IC = 1.0 mAdc, VCE = 10 Vdc, f = 1.0 kHz)	h _{ie}	-	11.5	k ohm
Voltage Feedback Ratio (IC = 1.0 mAdc, V _{CE} = 10 Vdc, f = 1.0 kHz)	hre	-	15	X 10-4
Gmall-Signal Current Gain (IC = 1.0 mAdc, VCE = 10 Vdc, f = 1.0 kHz)	hfe	135	420	-
Output Admittance (IC = 1.0 mAdc, VCE = 10 Vdc, f = 1.0 kHz)	hoe	-	80	μmhos
Noise Figure (IC = 30 µAdc, VCE = 5.0 Vdc, RS = 10 k ohms, f = 1.0 kHz, B.W. = 200 Hz)	NF	-	4.0	dB
ATCHING CHARACTERISTICS				
C Current Gain Ratio (3) (IC = 0.1 mAdc to 1.0 mAdc, V _{CE} = 5.0 Vdc)	hFE1/hFE2	0.9	1.0	-
lase-Emitter Voltage Differential (IC = 0.1 mAdc to 1.0 mAdc, V _{CE} = 5.0 Vdc)	IVBE 1-VBE 2			mVdc
	1 1	1		

(1 _C = 0.1 mAdc to 1.0 mAdc, V _{CE} = 5.0 Vdc)				ſ
Base-Emitter Voltage Differential (IC = 0.1 mAdc to 1.0 mAdc, VCE = 5.0 Vdc)	IVBE1-VBE2			mVde
		-	2.6	ì
Base Emitter Voltage Differential Change (IC = 0.1 mAdc to 1.0 mAdc, VCE = 5.0 Vdc,	∆(VBE1-VBE2)			m∀de
TA = -55°C to +25°C) (IC = 0.1 mAde to 1.0 mAde, VCE = 5.0 Vde,		-	0.8	
TA = +25°C to +125°C)		-	1.0	1

^{&#}x27;Indicates JEDEC Registered Data.

(I) Pulse Test: Pulse Length = 300 µs, Duty Cycle = 1.0%.

(2) f_T is defined as the frequency at which |h_{fe}| extrapolates to unity.

(3) For purposes of this ratio, the lowest h_{EE} reading is taken as h_{EE}1.