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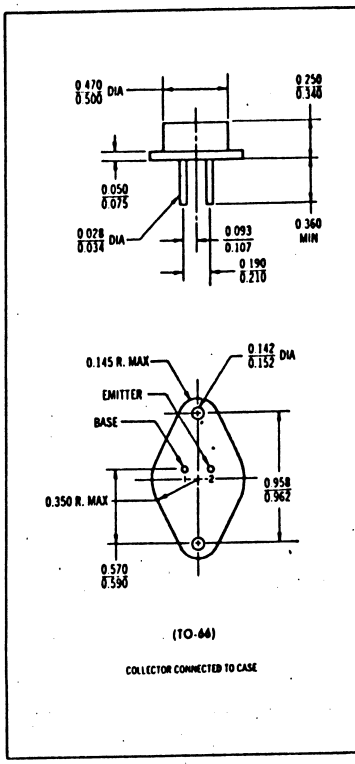
MEDIUM-POWER PNP TRANSISTORS

*MAXIMUM RATINGS

Rating	Symbol		Unit
Collector-Emitter Voltage	V_{CEO}	80	Vdc
Emitter-Base Voltage	V_{EB}	7.0	Vdc
Collector-Base Voltage	V_{CB}	80	vdc
Collector Current – Continuous – Peak	I_C	4.0 10	Adc
Base Current	I_B	2.0	Adc
Total Device Dissipation @ $T_C = 25^oC$ Derate above 25^oC	P_D	25 0.143	Watts W/^oC
Operating and Storage Junction Temperature Range	T_J, T_{stg}	-65 to +200	^oC



*ELECTRICAL CHARACTERISTICS ($T_C = 25^oC$ unless otherwise noted)

Characteristic	Symbol	Min	Max	Unit
OFF CHARACTERISTICS				
Collector-Emitter Sustaining Voltage ① (I_C = 100 mAdc, I_B = 0)	$V_{CEO(sus)}$ ①	80	–	Vdc
Emitter Base Cutoff Current (V_{EB} = 7.0 Vdc)	I_{EBO}	–	0.5	mAdc nAdc
Collector Cutoff Current (V_{CE} = 80 Vdc, $V_{BE(off)}$ = 1.5 Vdc) (V_{CE} = 60 Vdc, $V_{BE(off)}$ = 1.5 Vdc, T_C = 150°C)	I_{CEX}	– –	100 1.0	µAdc mAdc
Collector-Emitter Cutoff Current (V_{CE} = 60 Vdc, I_B = 0)	I_{CEO}	–	1.0	mAdc
Collector Base Cutoff Current (V_{CB} = 80 Vdc, I_E = 0)	I_{CBO}	–	100	µAdc
ON CHARACTERISTICS				
DC Current Gain (I_C = 100 mAdc, V_{CE} = 1.0 Vdc) (I_C = 250 mAdc, V_{CE} = 1.0 Vdc) (I_C = 500 mAdc, V_{CE} = 1.0 Vdc) (I_C = 1.0 Adc, V_{CE} = 1.0 Vdc)	h_{FE}①	40 30 20 10	– 100 – –	–
Collector-Emitter Saturation Voltage (I_C = 1.0 Adc, I_B = 125 mAdc)	$V_{CE(sat)}$①	–	0.6	Vdc
Base-Emitter Voltage (I_C = 250 mAdc, V_{CE} = 1.0 Vdc)	V_{BE}①	–	1.0	Vdc
TRANSIENT CHARACTERISTICS				
Current-Gain–Bandwidth Product (I_C = 100 mAdc, V_{CE} = 10 Vdc, f = 1.0 MHz)	f_T	4.0	–	MHz
Common Base Output Capacitance (V_{CB} = 10 Vdc, I_C = 0, f = 100 kHz)	C_{ob}	–	100	pF
Small-Signal Current Gain (I_C = 50 mAdc, V_{CE} = 10 Vdc, f = 1.0 kHz)	h_{fe}	25	–	–

*Indicates JEDEC Registered Data.

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

SMALL-SIGNAL CHARACTERISTICS

Current-Gain—Bandwidth Product (2) (I_C = 1.0 mAdc, V_{CE} = 10 Vdc, f = 20 MHz) (I_C = 50 mAdc, V_{CE} = 20 Vdc, f = 100 MHz)	f_T	60 200	– 600	MHz
Output Capacitance (V_{CB} = 10 Vdc, I_E = 0, f = 1.0 MHz)	C_{ob}	–	8.0	pF
Input Capacitance (V_{EB} = 0.5 Vdc, I_C = 0, f = 1.0 MHz)	C_{ib}	–	30	pF
Input Impedance (I_C = 1.0 mAdc, V_{CE} = 10 Vdc, f = 1.0 kHz)	h_{ie}	–	11.5	k ohm
Voltage Feedback Ratio (I_C = 1.0 mAdc, V_{CE} = 10 Vdc, f = 1.0 kHz)	h_{re}	–	15	X 10^{-4}
Small-Signal Current Gain (I_C = 1.0 mAdc, V_{CE} = 10 Vdc, f = 1.0 kHz)	h_{fe}	135	420	–
Output Admittance (I_C = 1.0 mAdc, V_{CE} = 10 Vdc, f = 1.0 kHz)	h_{oe}	–	80	μmhos
Noise Figure (I_C = 30 μAdc, V_{CE} = 5.0 Vdc, R_S = 10 k ohms, f = 1.0 kHz, B.W. = 200 Hz)	NF	–	4.0	dB

MATCHING CHARACTERISTICS

DC Current Gain Ratio (3) (I_C = 0.1 mAdc to 1.0 mAdc, V_{CE} = 5.0 Vdc)	h_{FE1}/h_{FE2}	0.9	1.0	–
Base-Emitter Voltage Differential (I_C = 0.1 mAdc to 1.0 mAdc, V_{CE} = 5.0 Vdc)	$\lvert V_{BE1}-V_{BE2}\rvert$	–	2.5	mVdc
Base-Emitter Voltage Differential Change (I_C = 0.1 mAdc to 1.0 mAdc, V_{CE} = 5.0 Vdc, T_A = -55°C to +25°C) (I_C = 0.1 mAdc to 1.0 mAdc, V_{CE} = 5.0 Vdc, T_A = +25°C to +125°C)	$\Delta(V_{BE1}-V_{BE2})$	– –	0.8 1.0	mVdc

*Indicates JEDEC Registered Data.

(1) 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_{FE} reading is taken as h_{FE1}.