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MPS6565 (SILICON)
MPS6566

NPN SILICON ANNULAR TRANSISTORS

. . . designed for low-current amplifier applications.

- Collector-Emitter Breakdown Voltage – BV_{CEO} = 45 Vdc (Min) @ I_C = 1.0 mAdc
- Output Capacitance – C_{ob} = 3.5 pF (Max) @ V_{CB} = 10 mAdc
- Full Designers Curves

NPN SILICON AMPLIFIER TRANSISTORS

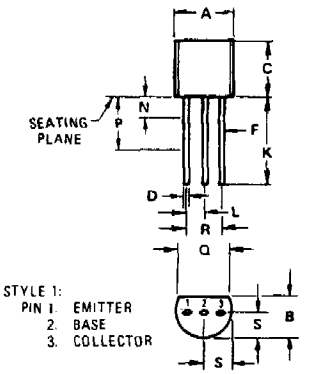
MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Collector-Emitter Voltage	V_{CEO}	45	Vdc
Collector-Base Voltage	V_{CB}	60	Vdc
Emitter-Base Voltage	V_{EB}	4.0	Vdc
Collector Current – Continuous	I_C	200	mAdc
Total Power Dissipation @ T_A = 25°C Derate above 25°C	P_D	350 2.8	mW mW/°C
Total Power Dissipation @ T_C = 25°C Derate above 25°C	P_D	1.0 8.0	Watt mW/°C
Operating and Storage Junction Temperature Range	T_J,T_{stg}	-55 to +150	°C

THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$(1)	357	°C/W
Thermal Resistance, Junction to Case	$R_{\theta JC}$	125	°C/W

(1) $R_{\theta JA}$ is measured with the device soldered into a typical printed circuit board.



DIM	MILLIMETERS MIN	MILLIMETERS MAX	INCHES MIN	INCHES MAX
A	4.450	5.200	0.175	0.205
B	3.180	4.190	0.125	0.165
C	4.320	5.330	0.170	0.210
D	0.407	0.533	0.016	0.021
F	0.407	0.482	0.016	0.019
K	12.700	–	0.500	–
L	1.150	1.390	0.045	0.055
N	–	1.270	–	0.050
P	6.350	–	0.250	–
Q	3.430	–	0.135	–
R	2.410	2.670	0.095	0.105
S	2.030	2.670	0.080	0.105

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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 customers to verify that datasheets are current before placing orders.

Quality Semi-Conductors

MPS6565, MPS6566 (continued)

ELECTRICAL CHARACTERISTICS (T_A = 25°C unless otherwise noted)

Characteristic		Symbol	Min	Typ	Max	Unit
OFF CHARACTERISTICS						
Collector-Emitter Breakdown Voltage (1) (I_C = 1 mAdc, I_B = 0)		BV_{CEO}	45	—	—	Vdc
Collector-Base Breakdown Voltage (I_C = 100 μAdc, I_E = 0)		BV_{CBO}	60	—	—	Vdc
Emitter-Base Breakdown Voltage (I_E = 100 μAdc, I_C = 0)		BV_{EBO}	4.0	—	—	Vdc
Collector Cutoff Current (V_{CB} = 30 Vdc, I_E = 0)		I_{CBO}	—	—	100	nAdc
ON CHARACTERISTICS						
DC Current Gain (1) (I_C = 10 mAdc, V_{CE} = 10 Vdc)	MPS6565 MPS6566	h_{FE}	40 100	— —	160 400	—
Collector-Emitter Saturation Voltage (I_C = 10 mAdc, I_B = 1 mAdc)		$V_{CE(sat)}$	—	0.1	0.4	Vdc
SMALL-SIGNAL CHARACTERISTICS						
Output Capacitance (V_{CB} = 10 Vdc, I_E = 0, f = 100 kHz)		C_{ob}	—	—	3.5	pF
Input Capacitance (V_{BE} = 0.5 Vdc, I_C = 0, f = 100 kHz)		C_{ib}	—	3.7	—	pF
Small Signal Current Gain (I_C = 10 mAdc, V_{CE} = 10 Vdc, f = 100 MHz)		h_{fe}	2.0	—	—	—
Output Admittance (I_C = 10 mAdc, V_{CE} = 10 Vdc, f = 1 kHz)		h_{oe}	—	60	—	μmhos
Input Impedance (I_C = 10 mAdc, V_{CE} = 10 Vdc, f = 1 kHz)		h_{ie}	—	500	—	ohms
Voltage Feedback Ratio (I_C = 10 mAdc, V_{CE} = 10 Vdc, f = 1 kHz)		h_{re}	—	2.5	—	X 10^{-4}
Noise Figure (I_C = 100 μAdc, V_{CE} = 5 Vdc, R_S = 1000 ohms, f = 10 Hz to 15.7 kHz)		NF	—	4.0	—	dB

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