New Jersey Semi-Conductor Products, Inc.

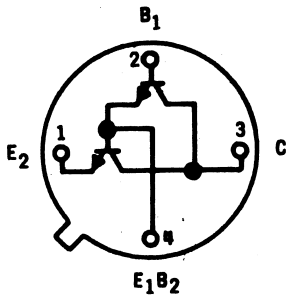
20 STERN AVE.
SPRINGFIELD, NEW JERSEY 07081
U.S.A.

TELEPHONE: (973) 376-2922
(212) 227-6005
FAX: (973) 376-8960

2N2785 (SILICON)

CASE 20(8)
(TO-72)

Two NPN silicon annular transistors connected as a darlington amplifier, and designed for applications requiring very high gain.



MAXIMUM RATINGS (T_A = 25°C unless otherwise noted)

Rating	Symbol	Value	Unit
Collector-Emitter Voltage	V_{CE2O}	40	Vdc
Collector-Base Voltage	V_{CB1}	60	Vdc
Emitter-Base Voltage	V_{E2B1}	15	Vdc
(Pin 4 to Pin 2)		7.5	Vdc
Total Device Dissipation @ T_A = 25°C	P_D	0.5	Watt
Derate above 25°C		3.33	mW/°C
Total Device Dissipation @ T_C = 25°C	P_D	1.8	Watts
T_C = 100°C		1.0	Watt
Derate above 25°C		10	mW/°C
Operating Junction Temperature Range	T_J	-65 to +175	°C
Storage Temperature Range	T_{stg}	-65 to +200	°C

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2N2785 (continued)

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

Characteristic	Symbol	Min	Max	Unit
OFF CHARACTERISTICS				
Collector-Emitter Breakdown Voltage* (I_C = 20 mAdc, I_{B1} = 0)	BV_{CE2O}*	40	-	Vdc
Collector-Base Breakdown Voltage (I_C = 100 μAdc, I_{E2} = 0)	BV_{CB1O}	60	-	Vdc
Emitter-Base Breakdown Voltage (I_{E2} = 100 μAdc, I_C = 0)	BV_{E2B1O}	15	-	Vdc
Collector Cutoff Current (V_{CE} = 20 Vdc, I_B = 0)	I_{CEO}	-	500	nAdc
Collector Cutoff Current (V_{CB1} = 30 Vdc, I_E = 0) (V_{CB1} = 30 Vdc, I_E = 0, T_A = 150°C)	I_{CB1O}	- -	0.05 10	μAdc
Emitter Cutoff Current (V_{E2B1} = 5.0 Vdc, I_C = 0)	I_{E2B1O}	-	20	nAdc
ON CHARACTERISTICS				
DC Current Gain* (I_C = 1.0 mAdc, V_{CE2} = 4.0 Vdc) (I_C = 10 mAdc, V_{CE2} = 5.0 Vdc) (I_C = 100 mAdc, V_{CE2} = 5.0 Vdc)	h_{FE}*	600 1200 2000	- - 20,000	-
Collector-Emitter Saturation Voltage (I_C = 15 mAdc, I_{B1} = 3.0 mAdc)	$V_{CE2(sat)}$	-	1.0	Vdc
SMALL SIGNAL CHARACTERISTICS				
Current-Gain—Bandwidth Product (I_C = 1.0 mAdc, V_{CE2} = 5.0 Vdc, f = 10 MHz)	f_T	10	-	MHz
Output Capacitance (V_{CB1} = 10 Vdc, I_{E2} = 0, f = 1.0 MHz)	C_{ob1}	-	30	pF
Input Impedance (I_C = 1.0 mAdc, V_{CB1} = 5.0 Vdc, f = 1.0 kHz)	h_{ib}	30	80	Ohm
Voltage Feedback Ratio (I_C = 1.0 mAdc, V_{CE2} = 5.0 Vdc, f = 1.0 kHz)	h_{rb}	-	10	x 10^{-4}
Small-Signal Current Gain (I_C = 1.0 mAdc, V_{CE2} = 5.0 Vdc, f = 1.0 kHz)	h_{fe}	600	-	-
Output Admittance (I_C = 1.0 mAdc, V_{CB1} = 5.0 Vdc, f = 1.0 kHz)	h_{ob}	-	0.5	μmhos

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