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2N5879, 2N5880, PNP
2N5881, 2N5882 NPN

15 AMPERE

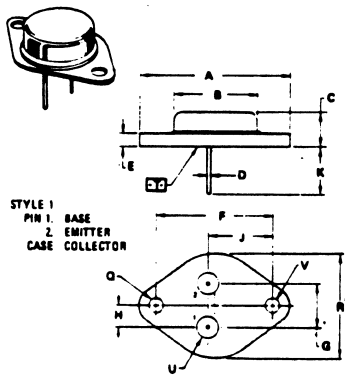
COMPLEMENTARY SILICON POWER TRANSISTORS

60-80 VOLTS
160 WATTS

COMPLEMENTARY SILICON HIGH-POWER TRANSISTORS

. . . designed for general-purpose power amplifier and switching applications.

- Collector-Emitter Sustaining Voltage –
  $V_{CEO(sus)}$ = 60 Vdc (Min) – 2N5879, 2N5881
  = 80 Vdc (Min) – 2N5880, 2N5882
- DC Current Gain –
  h_{FE} = 20 (Min) @ I_C = 6.0 Adc
- Low Collector – Emitter Saturation Voltage –
  $V_{CE(sat)}$ = 1.0 Vdc (Max) @ I_C = 7.0 Adc
- High Current – Gain-Bandwidth Product –
  f_T = 4.0 MHz (Min) @ I_C = 1.0 Adc
- Recommended for New Circuit Designs



TO-3

DIM	MILLIMETERS MIN	MILLIMETERS MAX	INCHES MIN	INCHES MAX
A	–	39.37	–	1.550
B	–	21.08	–	0.830
C	6.35	7.62	0.250	0.300
D	0.99	1.09	0.039	0.043
E	–	3.43	–	0.135
F	29.90	30.40	1.177	1.197
G	10.67	11.18	0.420	0.440
H	5.33	5.59	0.210	0.220
J	16.64	17.15	0.655	0.675
K	11.18	12.19	0.440	0.480
Q	3.84	4.09	0.151	0.161
R	–	26.67	–	1.050

NOTE:
1. DIM "Q" IS DIA.

Collector connected to case.

*MAXIMUM RATINGS

Rating	Symbol	2N5879 2N5881	2N5880 2N5882	Unit
Collector-Emitter Voltage	V_{CEO}	60	80	Vdc
Collector-Base Voltage	V_{CB}	60	80	Vdc
Emitter-Base Voltage	V_{EB}	5.0		Vdc
Collector Current – Continuous Peak	I_C	15 30		Adc
Base Current	I_B	5.0		Adc
Total Device Dissipation @ T_C = 25°C Derate above 25°C	P_D	160 0.915		Watts W/°C
Operating and Storage Junction Temperature Range	T_J,T_{stg}	-65 to +200		°C

THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Thermal Resistance, Junction to Case	θ_{JC}	1.1	°C/W

*Indicates JEDEC registered data. Limits and conditions differ on some parameters and re-registration reflecting these changes has been requested. All above values meet or exceed present JEDEC registered data.

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

Characteristic		Symbol	Min	Max	
OFF CHARACTERISTICS					
Collector-Emitter Sustaining Voltage (1) (I_C = 200 mAdc, I_B = 0)	2N5879, 2N5881 2N5880, 2N5882	$V_{CEO(sus)}$	60 80	– –	
Collector Cutoff Current (V_{CE} = 30 Vdc, I_B = 0) (V_{CE} = 40 Vdc, I_B = 0)	2N5879, 2N5881 2N5880, 2N5882	I_{CEO}	– –	1.0 1.0	m
Collector Cutoff Current (V_{CE} = 60 Vdc, $V_{BE(off)}$ = 1.5 Vdc) (V_{CE} = 80 Vdc, $V_{BE(off)}$ = 1.5 Vdc) (V_{CE} = 60 Vdc, $V_{BE(off)}$ = 1.5 Vdc, T_C = 150°C) (V_{CE} = 80 Vdc, $V_{BE(off)}$ = 1.5 Vdc, T_C = 150°C)	2N5879, 2N5881 2N5880, 2N5882 2N5879, 2N5881 2N5880, 2N5882	I_{CEX}	– – – –	0.5 0.5 5.0 5.0	m
Collector Cutoff Current (V_{CB} = 60 Vdc, I_E = 0) (V_{CB} = 80 Vdc, I_E = 0)	2N5879, 2N5881 2N5880, 2N5882	I_{CBO}	– –	0.5 0.5	m
Emitter Cutoff Current (V_{EB} = 5.0 Vdc, I_C = 0)		I_{EBO}	–	1.0	m
ON CHARACTERISTICS					
DC Current Gain (1) (I_C = 2.0 Adc, V_{CE} = 4.0 Vdc) (I_C = 6.0 Adc, V_{CE} = 4.0 Vdc) (I_C = 15 Adc, V_{CE} = 4.0 Vdc)		h_{FE}	35 20 4.0	– 100 –	
Collector-Emitter Saturation Voltage (1) (I_C = 7.0 Adc, I_B = 0.7 Adc) (I_C = 15 Adc, I_B = 3.75 Adc)		$V_{CE(sat)}$	– –	1.0 4.0	V
Base-Emitter Saturation Voltage (1) (I_C = 15 Adc, I_B = 3.75 Adc)		$V_{BE(sat)}$	–	2.5	V
Base-Emitter On Voltage (1) (I_C = 6.0 Adc, V_{CE} = 4.0 Vdc)		$V_{BE(on)}$	–	1.5	V
DYNAMIC CHARACTERISTICS					
Current-Gain–Bandwidth Product (2) (I_C = 1.0 Adc, V_{CE} = 10 Vdc, f_{test} = 1.0 MHz)		f_T	4.0	–	M
Output Capacitance (V_{CB} = 10 Vdc, I_E = 0, f = 100 kHz)	2N5879, 2N5880 2N5881, 2N5882	C_{ob}	– –	600 400	p
Small-Signal Current Gain (I_C = 2.0 Adc, V_{CE} = 4.0 Vdc, f = 1.0 kHz)		h_{fe}	20	–	
SWITCHING CHARACTERISTICS					
Rise Time Storage Time Fall Time	(V_{CC} = 30 Vdc, I_C = 6.0 Adc, I_{B1} = I_{B2} = 0.6 Adc See Figure 2)	t_r t_s t_f	– – –	0.7 1.0 0.8	μ μ μ

*Indicates JEDEC Registered Data.
(1) Pulse Test: Pulse Width ≤ 300 μs, Duty Cycle ≤ 2.0%
(2) $f_T = |h_{fe}| \cdot f_{test}$