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2N6049

MEDIUM-POWER PNP SILICON TRANSISTOR

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

- Excellent Safe Operating Area
- DC Current Gain Specified to 4.0 Amperes
- Complement to NPN Type 2N3054A

**4 AMPERE
POWER TRANSISTOR
PNP SILICON
55 VOLTS
75 WATTS**

*MAXIMUM RATINGS

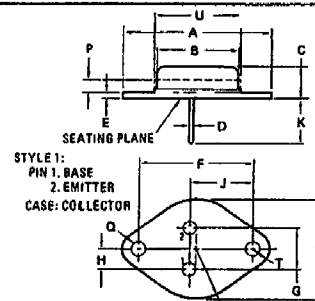
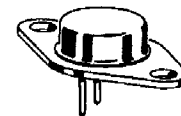
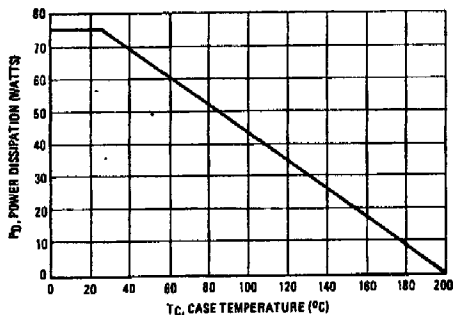
Rating	Symbol	Value	Unit
Collector-Emitter Voltage	V_{CE0}	55	Vdc
Collector-Emitter Voltage ($R_{BE} = 100 \Omega$)	V_{CER}	60	Vdc
Collector-Base Voltage	V_{CB}	90	Vdc
Emitter-Base Voltage	V_{EB}	7.0	Vdc
Collector Current - Continuous	I_C	4.0	A dc
Peak		10	
Base Current	I_B	2.0	A dc
Total Device Dissipation @ $T_C = 25^\circ\text{C}$	P_D	75	Watts
Derate above 25°		0.43	W/ $^\circ\text{C}$
Operating and Storage Junction, Temperature Range	T_J, T_{stg}	-65 to +200	$^\circ\text{C}$

*Indicates JEDEC Registered Data

THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Thermal Resistance, Junction to Case	θ_{JC}	2.33	$^\circ\text{C}/\text{W}$

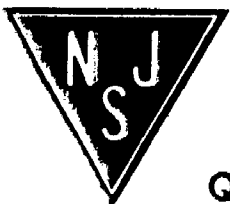
FIGURE 1 - POWER-TEMPERATURE DERATING



DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
B	11.94	12.70	0.470	0.500
C	6.35	8.64	0.250	0.340
D	0.71	0.85	0.028	0.034
E	1.27	1.51	0.050	0.075
F	24.33	24.43	0.958	0.962
G	4.83	5.33	0.190	0.210
H	2.41	2.57	0.095	0.105
J	14.48	14.99	0.570	0.590
K	8.14	-	0.320	-
P	-	1.27	-	0.050
Q	3.81	3.88	0.142	0.152
S	-	8.89	-	0.350
T	-	3.88	-	0.145
U	-	18.75	-	0.720

All JEDEC Dimensions and Notes Apply.

CASE 80-02
TO-213AA



NJ Semi-Conductors reserves the right to change test conditions, parameters 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

2N6049

*ELECTRICAL CHARACTERISTICS (T_C = 26°C unless otherwise noted)

Characteristic	Symbol	Min	Max	Unit
OFF CHARACTERISTICS				
Collector-Emitter Sustaining Voltage (1) (I _C = 100 mA _{dc} , I _B = 0)	V _{CE(sus)}	55	—	V _{dc}
Collector-Emitter Sustaining Voltage (1) (I _C = 100 mA _{dc} , R _{BE} = 100 Ω)	V _{CER(sus)}	60	—	V _{dc}
Collector Cutoff Current (V _{CE} = 30 V _{dc} , I _B = 0)	I _{CEO}	—	500	μA _{dc}
Collector Cutoff Current (V _{CE} = 90 V _{dc} , V _{BE(off)} = 1.5 V _{dc}) (V _{CE} = 90 V _{dc} , V _{BE(off)} = 1.5 V _{dc} , T _C = 150°C)	I _{CEx}	—	1.0 6.0	mA _{dc}
Emitter Cutoff Current (V _{BE} = 7.0 V _{dc} , I _C = 0)	I _{EBO}	—	1.0	mA _{dc}

ON CHARACTERISTICS (1)

DC Current Gain (I _C = 500 mA _{dc} , V _{CE} = 4.0 V _{dc}) (I _C = 3.0 A _{dc} , V _{CE} = 4.0 V _{dc})	h _{FE}	25 6.0	100	—
Collector-Emitter Saturation Voltage (I _C = 500 mA _{dc} , I _B = 50 mA _{dc}) (I _C = 4.0 A _{dc} , I _B = 800 mA _{dc})	V _{CE(sat)}	—	0.5 2.0	V _{dc}
Base-Emitter On Voltage (I _C = 500 mA _{dc} , V _{CE} = 4.0 V _{dc})	V _{BE(on)}	—	1.0	V _{dc}

DYNAMIC CHARACTERISTICS

Current Gain – Bandwidth Product (I _C = 200 mA _{dc} , V _{CE} = 10 V _{dc})	f _T	3.0	—	MHz
Output Capacitance (V _{CB} = 10 V _{dc} , I _E = 0, f = 0.1 MHz)	C _{ob}	—	200	pF
Small-Signal Current Gain (I _C = 100 mA _{dc} , V _{CE} = 4.0 V _{dc} , f = 1.0 kHz)	h _{fe}	25	180	

*Indicates JEDEC Registered Data

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

FIGURE 2 – SWITCHING TIME EQUIVALENT TEST CIRCUIT

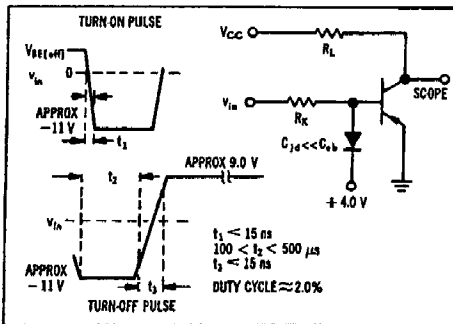


FIGURE 3 – TURN-ON TIME

