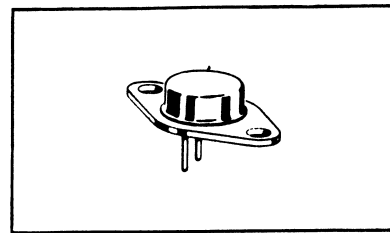


2N4233A*

*Motorola preferred device

**5.0 AMPERE
 SILICON
 POWER TRANSISTOR**

**80 VOLTS
 75 WATTS**



MEDIUM-POWER SILICON TRANSISTOR

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

- Low Collector-Emitter Saturation Voltage – $V_{CE(sat)} = 0.7 \text{ Vdc (Max) @ } I_C = 1.5 \text{ Adc}$
- Low Leakage Current – $I_{CEX} = 0.1 \text{ mAdc (Max)}$
- Excellent DC Current Gain – $h_{FE} = 25-100 @ I_C = 1.5 \text{ Adc}$
- High Current Gain – Bandwidth Product – $f_T = 4.0 \text{ MHz @ } I_C = 0.25 \text{ Adc}$

***MAXIMUM RATINGS**

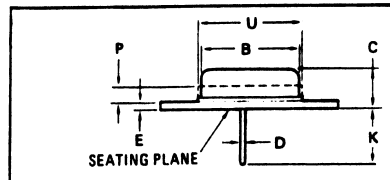
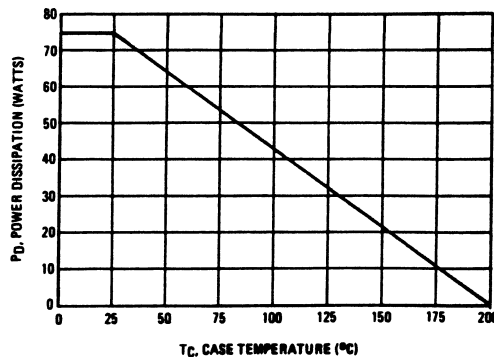
Rating	Symbol	Value	Unit
Collector-Emitter Voltage	V_{CEO}	80	Vdc
Collector-Base Voltage	V_{CB}	80	Vdc
Emitter-Base Voltage	V_{EB}	5.0	Vdc
Collector Current — Continuous	I_C	5.0	Adc
Peak		10	
Base Current	I_B	2.0	Adc
Total Device Dissipation @ $T_C = 25^\circ\text{C}$	P_D	75	Watts
Derate above 25°C		0.43	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}	2.32	°C/W

*Indicates JEDEC registered data. (All values meet or exceed JEDEC registered data).

FIGURE 1 - POWER DERATING

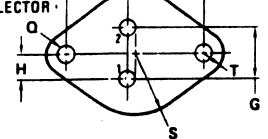


STYLE 1:

PIN 1: BASE

2: EMITTER

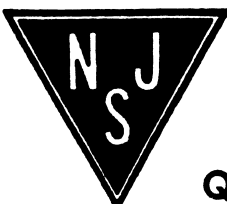
CASE: COLLECTOR



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	0.86	0.028	0.034
E	1.27	1.91	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	2.67	0.095	0.105
J	14.48	14.99	0.570	0.590
K	9.14	-	0.360	-
P	-	1.27	-	0.050
Q	3.61	3.86	0.142	0.152
S	-	8.89	-	0.350
T	-	3.68	-	0.145
U	-	15.75	-	0.620

All JEDEC Dimensions and Notes Apply.

CASE 90-02
 TO-213AA
 (TO-18)



2N4233A

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

Characteristic	Symbol	Min	Max	Unit
*OFF CHARACTERISTICS				
Collector-Emitter Sustaining Voltage (1) (I _C = 100 mA, I _B = 0)	V _{CE(sus)}	80	—	Vdc
Collector Cutoff Current (V _{CE} = 70 Vdc, I _B = 0)	I _{CEO}	—	1.0	mA
Collector Cutoff Current (V _{CE} = 80 Vdc, V _{BE(off)} = 1.5 Vdc, V _{CE} = 80 Vdc, V _{BE(off)} = 1.5 Vdc, T _C = 150°C)	I _{CEx}	—	0.1 1.0	mA
Collector Cutoff Current (V _{CB} = 80 Vdc, I _E = 0)	I _{CBO}	—	0.05	mA
Emitter Cutoff Current (V _{BE} = 5.0 Vdc, I _C = 0)	I _{EBO}	—	0.5	mA
ON CHARACTERISTICS				
DC Current Gain (1) *(I _C = 0.5 Adc, V _{CE} = 2.0 Vdc) *(I _C = 1.5 Adc, V _{CE} = 2.0 Vdc) *(I _C = 3.0 Adc, V _{CE} = 2.0 Vdc) *(I _C = 5.0 Adc, V _{CE} = 4.0 Vdc)	h _{FE}	40 25 10 4.0	— 100 — —	—
*Collector-Emitter Saturation Voltage (1) (I _C = 1.5 Adc, I _B = 0.15 Adc) (I _C = 3.0 Adc, I _B = 0.3 Adc) (I _C = 5.0 Adc, I _B = 1.25 Adc)	V _{CE(sat)}	— — —	0.7 2.0 4.0	Vdc
*Base-Emitter On Voltage (1) (I _C = 1.5 Adc, V _{CE} = 2.0 Vdc)	V _{BE(on)}	—	1.4	Vdc
*DYNAMIC CHARACTERISTICS				
Current Gain — Bandwidth Product (I _C = 0.5 Adc, V _{CE} = 10 Vdc, f _{test} = 1.0 MHz)	f _T	4.0	—	MHz
Output Capacitance (V _{CB} = 10 Vdc, I _E = 0, f = 0.1 MHz)	C _{ob}	—	300	pF
Small-Signal Current Gain (I _C = 0.5 Adc, V _{CE} = 10 Vdc, f = 1.0 kHz)	h _{fe}	20	—	—

*Indicates JEDEC registered data.
 (1) Pulse Test: Pulse Width < 300 μs, Duty Cycle < 2.0%.

