GHz TECHNOLOGY
RF·MICROWAVE SILICON POWER TRANSISTORS

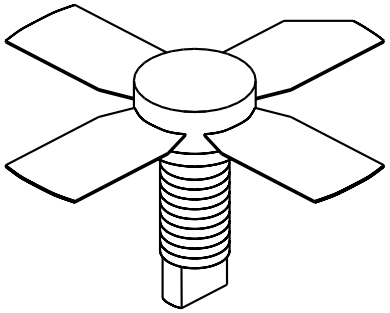
# *10A060*

6 Watts, 20 Volts, Class A
Linear to 1000 MHz

## GENERAL DESCRIPTION

The 10A060 is a COMMON EMITTER transistor capable of providing 6 Watts of Class A, RF output power to 1000 MHz. This transistor is specifically designed for general Class A amplifier applications. It utilizes gold metalization and diffused ballasting to provide high reliability and supreme ruggedness.

## CASE OUTLINE
## 55FT, STYLE 2



## ABSOLUTE MAXIMUM RATINGS

Maximum Power Dissipation @ 25ºC 21 Watts

**Maximum Voltage and Current**

| | | |
|---|---|---|
| BVces | Collector to Emitter Voltage | 50 Volts |
| BVebo | Emitter to Base Voltage | 3.5 Volts |
| Ic | Collector Current | 3.0 Amps |

**Maximum Temperatures**

| | |
|---|---|
| Storage Temperature | - 65 to + 150ºC |
| Operating Junction Temperature | + 200ºC |

## ELECTRICAL CHARACTERISTICS @ 25 $^{O}$C

| SYMBOL | CHARACTERISTICS | TEST CONDITIONS | MIN | TYP | MAX | UNITS |
|---|---|---|---|---|---|---|
| **Pout** | Power Out | F = 1 GHz | 6.0 | | | Watts |
| **Pin** | Power Input | Ic = 880 mA | | | 0.95 | Watts |
| **Pg** | Power Gain | Vcc = 20 Volts | 8.0 | 8.5 | | dB |
| **VSWR** | Load Mismatch Tolerance | | | | 10:1 | |

| | | | | | | |
|---|---|---|---|---|---|---|
| **BVebo** | Emitter to Base Breakdown | Ie = 4 mA | 3.5 | | | Volts |
| **BVces** | Collector to Emitter Breakdown | Ic = 40 mA | 50 | | | Volts |
| **BVceo** | Collector to Emitter Breakdown | Ic = 40 mA | 24 | | | Volts |
| $\mathbf{h_{FE}}$ | DC Current Gain | Vce = 5 V, Ic = 400 mA | 20 | | | |
| **Cob** | Output Capacitance | Vcb = 28 V, f = 1 MHz | | 10.8 | | pF |
| $\theta$**jc** | Thermal Resistance | | | 6.0 | 8.3 | ºC/W |

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# 10A060-2 (20V , 0.88A)

MMICAD for Windows Fri Jul 08 09:08:19 1994
CIRCUIT: MES

| FREQ | --- S11 --- | | --- S21 --- | | --- S12 --- | | --- S22 --- | |
|---|---|---|---|---|---|---|---|---|
| MHz | MAG | ANG | MAG | ANG | MAG | ANG | MAG | ANG |
| 0.100 | 0.94271 | -179.573 | 7.12288 | 96.5812 | 0.01233 | 33.7103 | 0.65876 | -167.948 |
| 0.200 | 0.94727 | 177.858 | 3.62706 | 85.4778 | 0.01647 | 47.8074 | 0.67089 | -175.431 |
| 0.300 | 0.95070 | 175.505 | 2.43251 | 77.9640 | 0.02142 | 55.0390 | 0.67357 | -178.205 |
| 0.400 | 0.95041 | 173.576 | 1.83322 | 71.6625 | 0.02655 | 58.3877 | 0.67753 | 179.766 |
| 0.500 | 0.94994 | 171.682 | 1.47310 | 65.8580 | 0.03196 | 61.7919 | 0.67968 | 178.147 |
| 0.600 | 0.94891 | 169.677 | 1.22939 | 60.2535 | 0.03781 | 62.8415 | 0.68417 | 176.702 |
| 0.700 | 0.94871 | 167.771 | 1.05741 | 54.8390 | 0.04404 | 62.8241 | 0.68874 | 175.321 |
| 0.800 | 0.94922 | 166.042 | 0.92763 | 49.6810 | 0.05024 | 61.5847 | 0.69219 | 173.913 |
| 0.900 | 0.94826 | 164.053 | 0.82656 | 44.8156 | 0.05539 | 60.8856 | 0.69672 | 172.527 |
| 1.000 | 0.94768 | 162.008 | 0.74603 | 40.1010 | 0.06133 | 60.6678 | 0.70214 | 171.294 |
| 1.100 | 0.94625 | 160.046 | 0.67929 | 35.5930 | 0.06750 | 59.7681 | 0.70830 | 169.944 |
| 1.200 | 0.94374 | 158.140 | 0.62325 | 31.3563 | 0.07362 | 58.9085 | 0.71639 | 168.543 |
| 1.300 | 0.94531 | 156.152 | 0.57768 | 27.3923 | 0.08065 | 57.9289 | 0.72283 | 167.093 |
| 1.400 | 0.94555 | 154.251 | 0.53768 | 23.6191 | 0.08711 | 56.4243 | 0.73219 | 165.498 |
| 1.500 | 0.94592 | 152.071 | 0.50349 | 19.9982 | 0.09428 | 55.1832 | 0.73909 | 163.888 |
| 1.600 | 0.94633 | 149.927 | 0.47263 | 16.6599 | 0.10148 | 53.8199 | 0.74559 | 162.202 |
| 1.700 | 0.94599 | 147.693 | 0.44551 | 13.5279 | 0.10844 | 52.1853 | 0.75251 | 160.556 |
| 1.800 | 0.94481 | 145.266 | 0.42183 | 10.7585 | 0.11624 | 50.5467 | 0.76093 | 159.086 |
| 1.900 | 0.94402 | 143.041 | 0.40145 | 8.31590 | 0.12442 | 48.9853 | 0.76754 | 157.185 |
| 2.000 | 0.94419 | 140.703 | 0.38429 | 6.10001 | 0.13302 | 47.2784 | 0.77503 | 155.615 |
| 2.100 | 0.94370 | 138.110 | 0.36947 | 3.87082 | 0.14146 | 45.1797 | 0.78561 | 153.938 |
| 2.200 | 0.94023 | 135.581 | 0.35630 | 1.65459 | 0.14990 | 42.9679 | 0.79686 | 151.980 |
| 2.300 | 0.93548 | 132.993 | 0.34411 | -0.25137 | 0.15902 | 41.0646 | 0.80921 | 149.678 |
| 2.400 | 0.93254 | 130.426 | 0.33311 | -1.96004 | 0.16785 | 39.0122 | 0.81694 | 147.278 |
| 2.500 | 0.92767 | 128.017 | 0.32451 | -3.38401 | 0.17831 | 36.8112 | 0.82221 | 144.669 |
| 2.600 | 0.92883 | 125.459 | 0.31791 | -4.56093 | 0.18803 | 34.6957 | 0.82413 | 142.309 |
| 2.700 | 0.92688 | 122.824 | 0.31318 | -5.88049 | 0.19912 | 32.1332 | 0.82678 | 139.708 |
| 2.800 | 0.92422 | 120.051 | 0.30902 | -7.08452 | 0.20989 | 29.5946 | 0.82748 | 136.917 |
| 2.900 | 0.91917 | 117.395 | 0.30597 | -8.05195 | 0.22055 | 27.1436 | 0.82550 | 134.192 |
| 3.000 | 0.91601 | 114.692 | 0.30506 | -8.93238 | 0.23205 | 24.6123 | 0.82134 | 131.416 |