

SILICON POWER TRANSISTOR
2SC2690, 2690A

NPN SILICON EPITAXIAL TRANSISTOR
FOR LOW/HIGH FREQUENCY POWER AMPLIFICATION

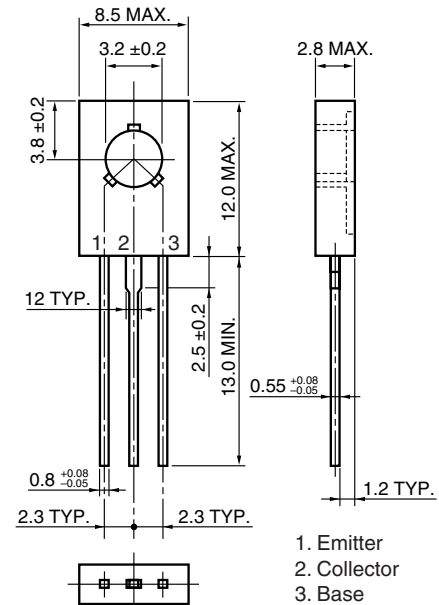
DESCRIPTION

These products are general purpose transistors designed for use in audio and radio frequency power amplifiers.

FEATURES

- Suitable for use in driver stage of 50 to 100 W audio amplifiers and output stage of TV vertical deflection circuit.
- High voltage and high f_r
 $V_{CE0} = 120 \text{ V (2SC2690) / 160 V (2SC2690A)}$
 $f_r = 175 \text{ MHz (} V_{CE} = 5.0 \text{ V, } I_C = 0.2 \text{ A)}$
- Complementary to the 2SA1220 and 2SA1220A PNP transistors.

★ PACKAGE DRAWING (Unit: mm)



★ ORDERING INFORMATION

| PART NUMBER | PACKAGE |
|-----------------------------|---------------|
| 2SC2690 | TO-126 (MP-5) |
| 2SC2690-AZ ^{Note} | TO-126 (MP-5) |
| 2SC2690A | TO-126 (MP-5) |
| 2SC2690A-AZ ^{Note} | TO-126 (MP-5) |

Note Pb-free (This product does not contain Pb in external electrode.)

ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$)

| | | 2SA2690 | 2SA2690A | |
|--|----------------|-------------|----------|------------------|
| Collector to Base Voltage | V_{CBO} | 120 | 160 | V |
| Collector to Emitter Voltage | V_{CEO} | 120 | 160 | V |
| Emitter to Base Voltage | V_{EBO} | | 5.0 | V |
| Collector Current (DC) | $I_{C(DC)}$ | | 1.2 | A |
| Collector Current (pulse) ^{Note} | $I_{C(pulse)}$ | | 2.5 | A |
| Base Current (DC) | $I_{B(DC)}$ | | 0.3 | A |
| Total Power Dissipation ($T_A = 25^\circ\text{C}$) | P_T | | 1.2 | W |
| Total Power Dissipation ($T_C = 25^\circ\text{C}$) | P_T | | 20 | W |
| Junction Temperature | T_j | | 150 | $^\circ\text{C}$ |
| Storage Temperature | T_{stg} | -55 to +150 | | $^\circ\text{C}$ |

Note $PW \leq 10 \text{ ms, Duty Cycle} \leq 50\%$

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ELECTRICAL CHARACTERISTICS (T_A = 25°C)

| CHARACTERISTICS | SYMBOL | TEST CONDITIONS | MIN. | TYP. | MAX. | UNIT |
|--|----------------------|---|------|------|------|------|
| Collector Cut-off Current | I _{CB0} | V _{CB} = 120 V, I _E = 0 | | | 1.0 | μA |
| Emitter Cut-off Current | I _{EB0} | V _{EB} = 3.0 V, I _C = 0 | | | 1.0 | μA |
| DC Current Gain ^{Note} | h _{FE1} | V _{CE} = 5.0 V, I _C = 5.0 mA | 35 | 150 | | |
| | h _{FE2} | V _{CE} = 5.0 V, I _C = 0.3 A | 60 | 140 | 320 | |
| Collector Saturation Voltage ^{Note} | V _{CE(sat)} | I _C = 1.0 A, I _B = 0.2 A | | 0.4 | 0.7 | V |
| Base Saturation Voltage ^{Note} | V _{BE(sat)} | | | 1.0 | 1.3 | V |
| Gain Bandwidth Product | f _T | V _{CE} = 5.0 V, I _C = 0.2 A | | 175 | | MHz |
| Output Capacitance | C _{ob} | V _{CB} = 10 V, I _E = 0, f = 1.0 MHz | | 26 | | pF |

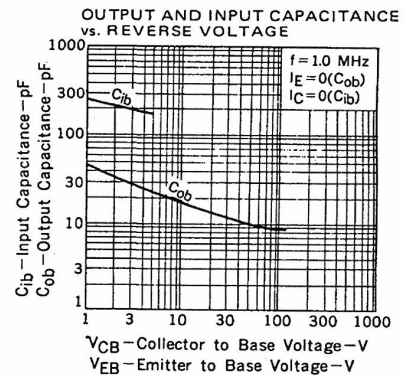
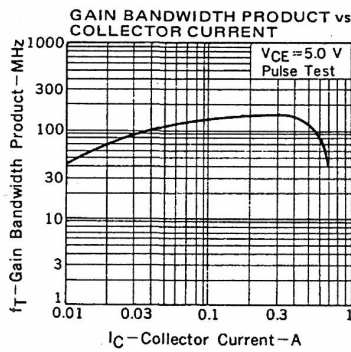
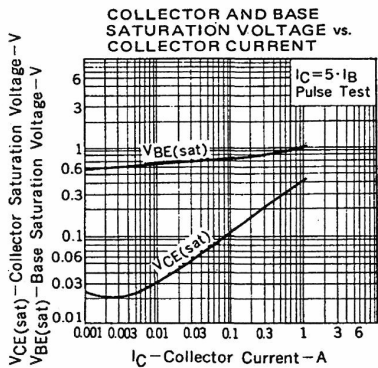
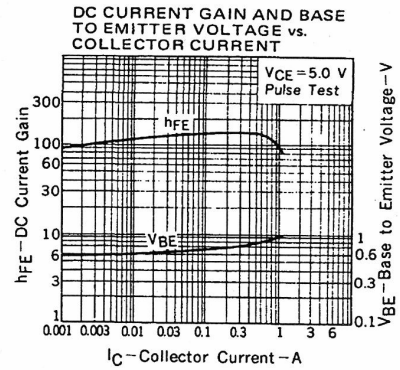
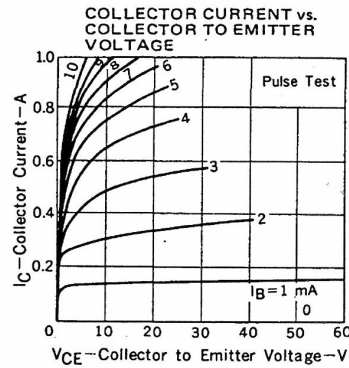
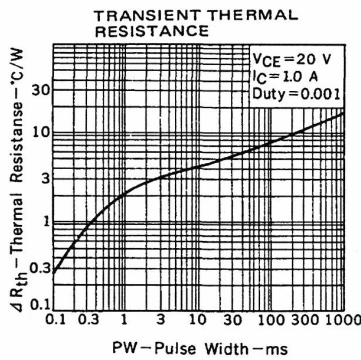
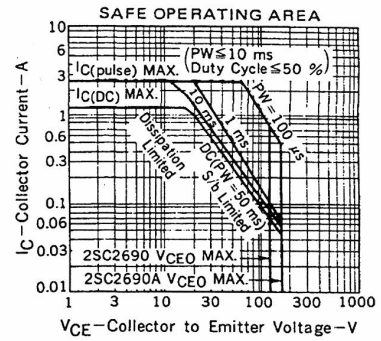
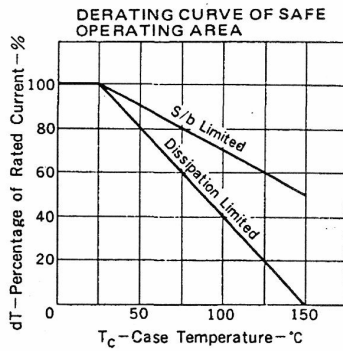
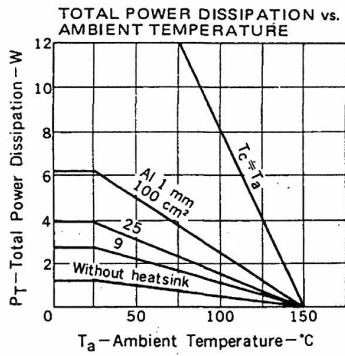
Note Pulsed: PW ≤ 350 μs, Duty Cycle ≤ 2%

h_{FE} CLASSIFICATION

| MARKING | R | Q | P |
|------------------|-----------|------------|------------|
| h _{FE2} | 60 to 120 | 100 to 200 | 160 to 320 |

Remark Test condition: V_{CE} = 5.0 V, I_C = 0.3 A

TYPICAL CHARACTERISTICS (T_A = 25°C)



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