

SILICON POWER TRANSISTOR  
2SC2690, 2690A

NPN SILICON EPITAXIAL TRANSISTOR  
FOR LOW/HIGH FREQUENCY POWER AMPLIFICATION

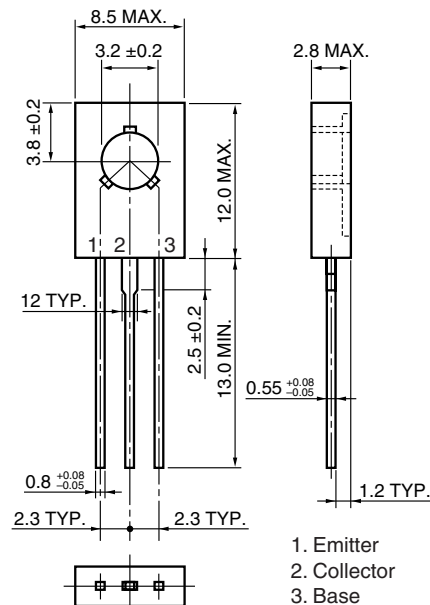
DESCRIPTION

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 <sup>Note</sup>	TO-126 (MP-5)
2SC2690A	TO-126 (MP-5)
2SC2690A-AZ <sup>Note</sup>	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) <sup>Note</sup>	$I_{C(pulse)}$		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<sub>A</sub> = 25°C)**

CHARACTERISTICS	SYMBOL	TEST CONDITIONS	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current	I <sub>CB0</sub>	V <sub>CB</sub> = 120 V, I <sub>E</sub> = 0			1.0	μA
Emitter Cut-off Current	I <sub>EB0</sub>	V <sub>EB</sub> = 3.0 V, I <sub>C</sub> = 0			1.0	μA
DC Current Gain <sup>Note</sup>	h <sub>FE1</sub>	V <sub>CE</sub> = 5.0 V, I <sub>C</sub> = 5.0 mA	35	150		
	h <sub>FE2</sub>	V <sub>CE</sub> = 5.0 V, I <sub>C</sub> = 0.3 A	60	140	320	
Collector Saturation Voltage <sup>Note</sup>	V <sub>CE(sat)</sub>	I <sub>C</sub> = 1.0 A, I <sub>B</sub> = 0.2 A		0.4	0.7	V
Base Saturation Voltage <sup>Note</sup>	V <sub>BE(sat)</sub>			1.0	1.3	V
Gain Bandwidth Product	f <sub>T</sub>	V <sub>CE</sub> = 5.0 V, I <sub>C</sub> = 0.2 A		175		MHz
Output Capacitance	C <sub>ob</sub>	V <sub>CB</sub> = 10 V, I <sub>E</sub> = 0, f = 1.0 MHz		26		pF

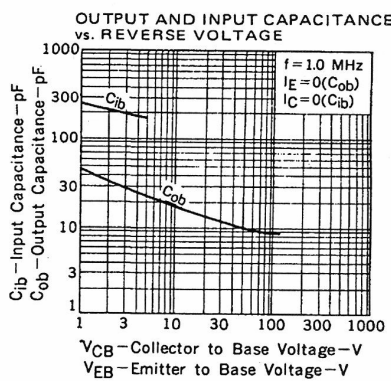
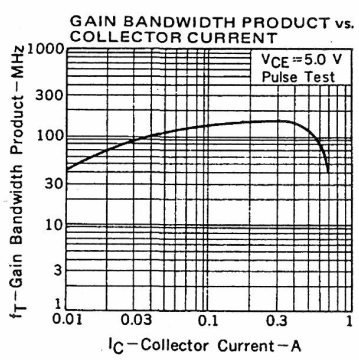
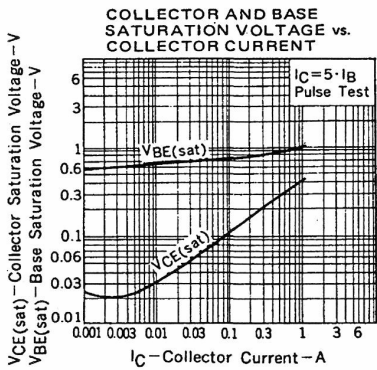
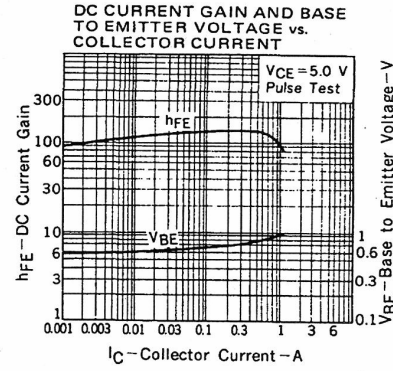
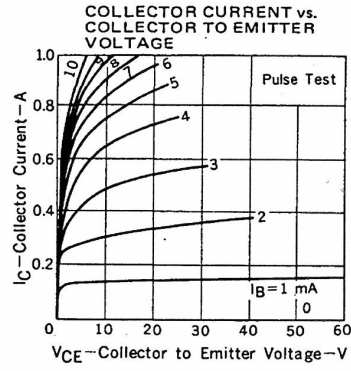
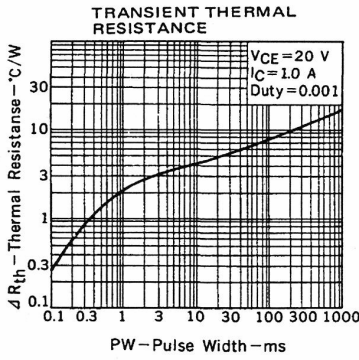
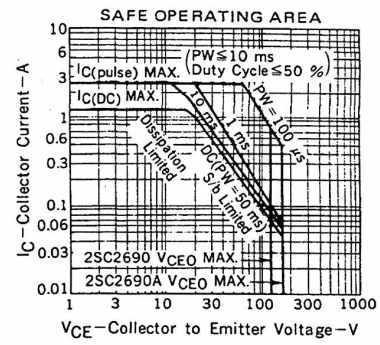
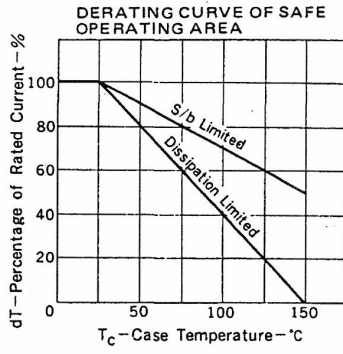
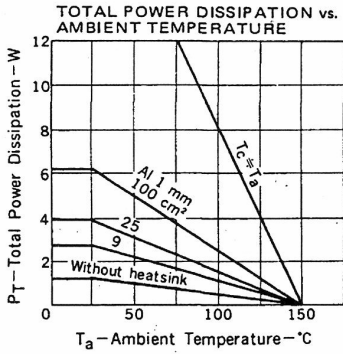
**Note** Pulsed: PW ≤ 350 μs, Duty Cycle ≤ 2%

**h<sub>FE</sub> CLASSIFICATION**

MARKING	R	Q	P
h <sub>FE2</sub>	60 to 120	100 to 200	160 to 320

**Remark** Test condition: V<sub>CE</sub> = 5.0 V, I<sub>C</sub> = 0.3 A

TYPICAL CHARACTERISTICS (T<sub>A</sub> = 25°C)



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