

NPN SILICON POWER TRANSISTORS 2SC2690, 2SC2690A

DESCRIPTION The 2SC2690, 2SC2690A 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_T
 $V_{CEO} = 120 \text{ V}/160 \text{ V}$ (2SC2690, 2SC2690A)
 $f_T = 175 \text{ MHz}$ (@ $V_{CE} = 5.0 \text{ V}$, $I_C = 0.2 \text{ A}$)
- Complementary to the NEC 2SA1220, 2SA1220A PNP Transistors.

ABSOLUTE MAXIMUM RATINGS

Maximum Temperatures

Storage Temperature -55 to $+150^\circ\text{C}$

Junction Temperature 150°C Maximum

Maximum Power Dissipations

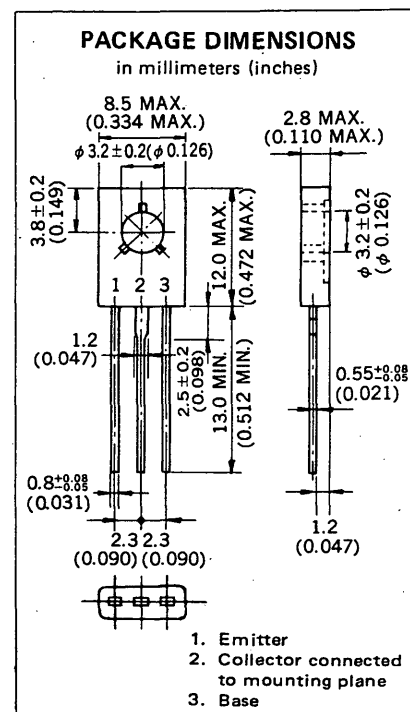
Total Power Dissipation ($T_a = 25^\circ\text{C}$) 1.2 W

Total Power Dissipation ($T_c = 25^\circ\text{C}$) 20 W

Maximum Voltages and Currents ($T_a = 25^\circ\text{C}$)

		2SC2690	2SC2690A
V_{CBO}	Collector to Base Voltage. . .	120	160 V
V_{CEO}	Collector to Emitter Voltage. .	120	160 V
V_{EBO}	Emitter to Base Voltage.	5.0	V
$I_{C(DC)}$	Collector Current.	1.2	A
$I_{C(pulse)}$	Collector Current.	2.5	A
$I_{B(DC)}$	Base Current.	0.3	A

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



ELECTRICAL CHARACTERISTICS ($T_a = 25^\circ\text{C}$)

SYMBOL	CHARACTERISTIC	MIN.	TYP.	MAX.	UNIT	TEST CONDITIONS
h_{FE1} **	DC Current Gain	35	150		—	$V_{CE} = 5.0 \text{ V}$, $I_C = 5.0 \text{ mA}$
h_{FE2} **	DC Current Gain	60	140	320	—	$V_{CE} = 5.0 \text{ V}$, $I_C = 0.3 \text{ A}$
f_T	Gain Bandwidth Product		175		MHz	$V_{CE} = 5.0 \text{ V}$, $I_C = 0.2 \text{ A}$
C_{ob}	Output Capacitance		26		pF	$V_{CB} = 10 \text{ V}$, $I_E = 0$, $f = 1.0 \text{ MHz}$
I_{CBO}	Collector Cutoff Current			1.0	μA	$V_{CB} = 120 \text{ V}$, $I_E = 0$
I_{EBO}	Emitter Cutoff Current			1.0	μA	$V_{EB} = 3.0 \text{ V}$, $I_C = 0$
$V_{CE(sat)}$ **	Collector Saturation Voltage		0.4	0.7	V	$I_C = 1.0 \text{ A}$, $I_B = 0.2 \text{ A}$
$V_{BE(sat)}$ **	Base Saturation Voltage		1.0	1.3	V	$I_C = 1.0 \text{ A}$, $I_B = 0.2 \text{ A}$

** Pulsed / $PW \leq 350 \mu\text{s}$, Duty Cycle $\leq 2\%$

Classification of h_{FE2}

Rank	R	Q	P
Range	60 to 120	100 to 200	160 to 320

Test Condition: $V_{CE} = 5.0 \text{ V}$, $I_C = 0.3 \text{ A}$

TYPICAL CHARACTERISTICS ($T_a = 25^\circ\text{C}$)