

## 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**

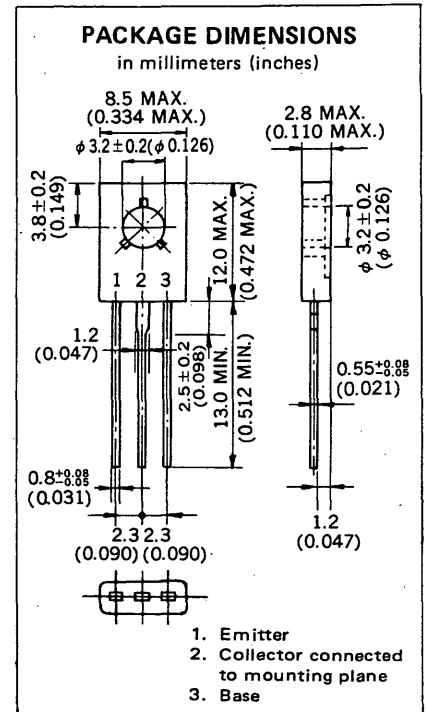
Maximum Temperatures  
 Storage Temperature . . . . .  $-55$  to  $+150\text{ }^\circ\text{C}$   
 Junction Temperature . . . . .  $150\text{ }^\circ\text{C}$  Maximum

Maximum Power Dissipations  
 Total Power Dissipation ( $T_a = 25\text{ }^\circ\text{C}$ ) . . . . .  $1.2\text{ W}$   
 Total Power Dissipation ( $T_c = 25\text{ }^\circ\text{C}$ ) . . . . .  $20\text{ W}$

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

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

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	$\mu\text{A}$	$V_{CB} = 120\text{ V}$ , $I_E = 0$
$I_{EBO}$	Emitter Cutoff Current			1.0	$\mu\text{A}$	$V_{EB} = 3.0\text{ V}$ , $I_C = 0$
$V_{CE(sat)}$ **	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 /  $PW \leq 350\text{ }\mu\text{s}$ , 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 ( $T_a = 25^\circ\text{C}$ )

