

2N3691

NPN SMALL SIGNAL GENERAL PURPOSE AMPLIFIER

ABSOLUTE MAXIMUM RATINGS [Note 1]

Maximum Temperatures

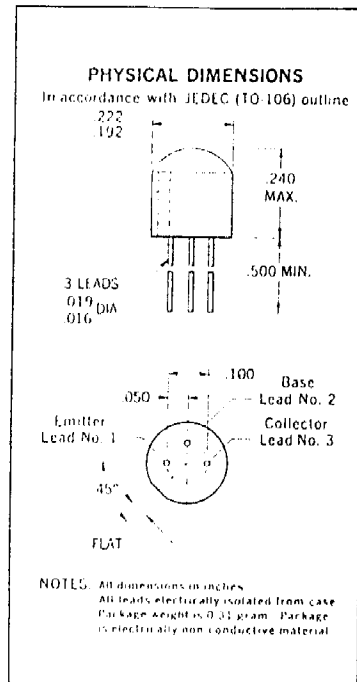
Storage Temperature	-55°C to +125°C
Operating Junction Temperature	125°C Maximum
Soldering Temperature (10 sec time limit)	260°C Maximum

Maximum Power Dissipation

Total Dissipation at 25°C Case Temperature [Note 2]	0.5 Watt
at 65°C Case Temperature [Note 2]	0.3 Watt
at 25°C Ambient Temperature [Note 2]	0.2 Watt

Maximum Voltages

V_{CBO} Collector to Base Voltage	35 Volts
V_{CEO} Collector to Emitter Voltage [Note 3]	25 Volts
V_{EBO} Emitter to Base Voltage	4.0 Volts



ELECTRICAL CHARACTERISTICS (25°C Free Air Temperature unless otherwise noted)

Symbol	Characteristic	Min.	Max.	Units	Test Conditions
h_{FE}	DC Pulse Current Gain [Note 4]	40	160		$I_C = 10 \text{ mA}$ $V_{CE} = 1.0 \text{ V}$
h_{fe}	High Frequency Current Gain ($f = 100 \text{ MHz}$)	2.0			$I_C = 10 \text{ mA}$ $V_{CE} = 15 \text{ V}$
$V_{CE(sat)}$	Collector Saturation Voltage		0.7	Volts	$I_C = 10 \text{ mA}$ $I_B = 1.0 \text{ mA}$
$V_{BE(sat)}$	Base Saturation Voltage		0.9	Volts	$I_C = 10 \text{ mA}$ $I_B = 1.0 \text{ mA}$
I_{CBO}	Collector Cutoff Current		50	nA	$I_E = 0$ $V_{CB} = 30 \text{ V}$
$I_{CBO(65^\circ\text{C})}$	Collector Cutoff Current		5.0	μA	$I_E = 0$ $V_{CB} = 30 \text{ V}$
C_{obo}	Common-Base, Open-Circuit Output Capacitance		6.0	pF	$I_E = 0$ $V_{CB} = 10 \text{ V}$
$V_{CEO(sust)}$	Collector to Emitter Sustaining Voltage [Notes 3 and 4]	25		Volts	$I_C = 10 \text{ mA}$ $I_B = 0$ (pulsed)
BV_{CBO}	Collector to Base Breakdown Voltage	35		Volts	$I_C = 100 \mu\text{A}$ $I_E = 0$
BV_{EBO}	Emitter to Base Breakdown Voltage	4.0		Volts	$I_C = 0$ $I_E = 10 \mu\text{A}$

NOTES:

- These ratings are limiting values above which the serviceability of any individual semiconductor device may be impaired.
- These ratings give a maximum junction temperature of 125°C and junction-to-case thermal resistance of 200°C/Watt (derating factor of 5.0 mW/°C); junction-to-ambient thermal resistance of 500°C/Watt (derating factor of 2.0 mW/°C).
- Rating refers to a high-current point where collector-to-emitter voltage is lowest.
- Pulse Conditions: length = 300 μs ; duty cycle = 1%.

