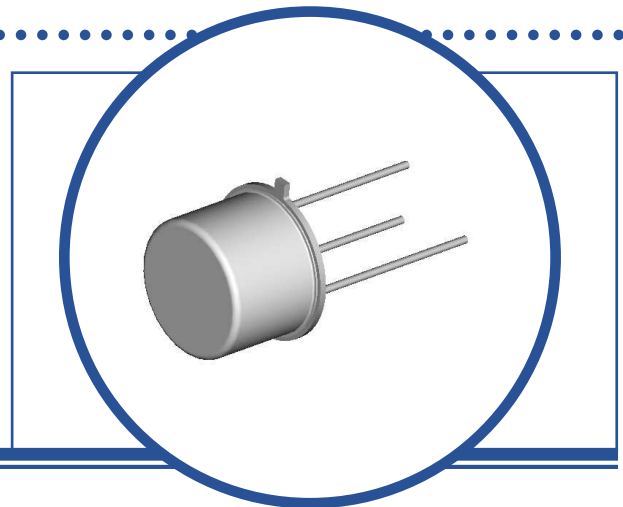


# GENERAL PURPOSE SILICON NPN TRANSISTOR

## 2N697

- Hermetic TO39 (TO-205AD) Metal Package.
- Ideally suited for General Purpose Applications
- Screening Options Available



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

$V_{CBO}$	Collector – Base Voltage		60V
$V_{CER}$	Collector – Emitter Voltage		40V
$V_{EBO}$	Emitter – Base Voltage		5.0V
$P_D$	Total Power Dissipation at	$T_A = 25^\circ\text{C}$	600mW
		Derate Above $25^\circ\text{C}$	4.0mW/ $^\circ\text{C}$
$P_D$	Total Power Dissipation at	$T_C = 25^\circ\text{C}$	2.0W
		Derate Above $25^\circ\text{C}$	13.3mW/ $^\circ\text{C}$
$T_J$	Junction Temperature Range		-65 to $+200^\circ\text{C}$
$T_{stg}$	Storage Temperature Range		-65 to $+200^\circ\text{C}$

### THERMAL PROPERTIES

Symbols	Parameters	Max.	Units
$R_{\theta JA}$	Thermal Resistance, Junction To Ambient	290	$^\circ\text{C}/\text{W}$
$R_{\theta JC}$	Thermal Resistance, Junction To Case	88	$^\circ\text{C}/\text{W}$

Semelab Limited reserves the right to change test conditions, parameter limits and package dimensions without notice. Information furnished by Semelab is believed to be both accurate and reliable at the time of going to press. However Semelab assumes no responsibility for any errors or omissions discovered in its use. Semelab encourages customers to verify that datasheets are current before placing orders.



# SILICON PLANAR EPITAXIAL NPN TRANSISTOR 2N697

## ELECTRICAL CHARACTERISTICS ( $T_A = 25^\circ\text{C}$ unless otherwise stated)

Symbols	Parameters	Test Conditions	Min.	Typ.	Max.	Units
$V_{(BR)CER}^{(1)}$	Collector-Emitter Breakdown Voltage	$I_C = 10\text{mA}$ $R_{BE} = 10\Omega$	40			V
$V_{(BR)CBO}$	Collector-Base Breakdown Voltage	$I_C = 100\mu\text{A}$ $I_E = 0$	60			
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage	$I_E = 100\mu\text{A}$ $I_C = 0$	5.0			
$I_{CBO}$	Collector Cut-Off Current	$V_{CB} = 30\text{V}$ $I_E = 0$			1.0	$\mu\text{A}$
			$T_A = 150^\circ\text{C}$		100	
$V_{CE(sat)}^{(1)}$	Collector-Emitter Saturation Voltage	$I_C = 150\text{mA}$ $I_B = 15\text{mA}$			1.5	V
$V_{BE(sat)}^{(1)}$	Base-Emitter Saturation Voltage	$I_C = 150\text{mA}$ $I_B = 15\text{mA}$			1.3	
$h_{FE}^{(1)}$	Forward-current transfer ratio	$I_C = 150\text{mA}$ $V_{CE} = 10\text{V}$	40		120	

## DYNAMIC CHARACTERISTICS

$ h_{fe} $	Small signal forward-current transfer ratio	$I_C = 50\text{mA}$ $V_{CE} = 10\text{V}$ $f = 20\text{MHz}$	2.5			
$C_{obo}$	Output Capacitance	$V_{CB} = 10\text{V}$ $I_E = 0$ $f = 1.0\text{MHz}$			35	$\text{pF}$

### Notes

(1) Pulse Width  $\leq 300\mu\text{s}$ ,  $\delta \leq 2\%$

## MECHANICAL DATA

Dimensions in mm (inches)

### TO39 (TO-205AD) Underside View

**Pin 1**                      **Pin 2**                      **Pin 3**  
Emitter                      Base                      Collector

