

2N696 (SILICON)**2N697****MOTOROLA**www.datasheetcatalog.com**CASE 31**
(TO-5)

NPN silicon annular transistors designed for small-signal amplifier and general purpose switching applications.

MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Collector-Emitter Voltage	V_{CER}	40	Vdc
Collector-Base Voltage	V_{CB}	60	Vdc
Emitter-Base Voltage	V_{EB}	5.0	Vdc
Total Device Dissipation @ $T_A = 25^\circ\text{C}$ Derate above 25°C	P_D	0.6 13.3	Watt mW/ $^\circ\text{C}$
Total Device Dissipation @ $T_C = 25^\circ\text{C}$ Derate above 25°C	P_D	2.0 13.3	Watts mW/ $^\circ\text{C}$
Operating and Storage Junction Temperature Range	T_J, T_{stg}	-65 to +200	$^\circ\text{C}$

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

Characteristic	Symbol	Min	Max	Unit
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OFF CHARACTERISTICS

Collector-Emitter Breakdown Voltage* ($I_C = 100 \text{ mAdc}$, $R_{BE} = 10 \text{ ohms}$)	BV_{CER}^*	40		Vdc
Collector-Base Breakdown Voltage ($I_C = 100 \mu\text{Adc}$, $I_E = 0$)	BV_{CBO}	60		Vdc
Emitter-Base Breakdown Voltage ($I_E = 100 \mu\text{Adc}$, $I_C = 0$)	BV_{EBO}	5.0		Vdc
Collector Cutoff Current ($V_{CB} = 30 \text{ Vdc}$, $I_E = 0$) ($V_{CB} = 30 \text{ Vdc}$, $I_E = 0$, $T_A = 150^\circ\text{C}$)	I_{CBO}	-	1.0 100	μAdc

ON CHARACTERISTICS

DC Current Gain* ($I_C = 150 \text{ mAdc}$, $V_{CE} = 10 \text{ Vdc}$)	h_{FE}^*	20 40	60 120	-
Collector-Emitter Saturation Voltage* ($I_C = 150 \text{ mAdc}$, $I_B = 15 \text{ mAdc}$)	$V_{CE(sat)}^*$	-	1.5	Vdc
Base-Emitter Saturation Voltage* ($I_C = 150 \text{ mAdc}$, $I_B = 15 \text{ mAdc}$)	$V_{BE(sat)}^*$	-	1.3	Vdc

DYNAMIC CHARACTERISTICS

Current Gain-Bandwidth Product ($I_C = 50 \text{ mAdc}$, $V_{CE} = 10 \text{ Vdc}$, $f = 20 \text{ MHz}$)	f_T	40 50	- -	MHz
Output Capacitance ($V_{CB} = 10 \text{ Vdc}$, $I_E = 0$)	C_{ob}	-	35	pF

* Pulse Test: Pulse Length $\leq 12 \text{ ms}$, Duty Cycle $\leq 2.0\%$.