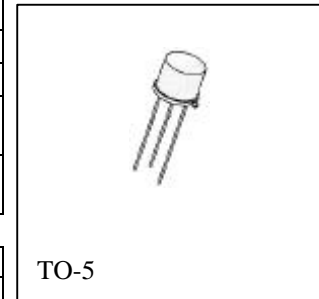


**2N696**  
**2N697**


Processed per MIL-PRF-19500/99

**NPN MEDIUM-POWER SILICON TRANSISTORS**
**MAXIMUM RATINGS**

Ratings	Symbol	Value	Units
Collector-Base Voltage	$V_{CBO}$	60	Vdc
Emitter-Base Voltage	$V_{EBO}$	5.0	Vdc
Total Power Dissipation @ $T_A = 25^{\circ}C$ <sup>(1)</sup> @ $T_C = 25^{\circ}C$ <sup>(2)</sup>	$P_T$	0.6	W
		2.0	W
Operating & Storage Junction Temperature Range	$T_J, T_{stg}$	-65 to +200	$^{\circ}C$


**THERMAL CHARACTERISTICS**

Characteristics	Symbol	Max.	Unit
Thermal Resistance, Junction-to-Case	$R_{\theta JC}$	0.075	$^{\circ}C/mW$

 1) Derate linearly 4.0 mW/ $^{\circ}C$  for  $T_A > 25^{\circ}C$ 

 2) Derate linearly 13.3 mW/ $^{\circ}C$  for  $T_C > 25^{\circ}C$ 
**ELECTRICAL CHARACTERISTICS ( $T_A = 25^{\circ}C$  unless otherwise noted)**

Characteristics	Symbol	Min.	Max.	Unit
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**OFF CHARACTERISTICS**

Collector-Emitter Breakdown Voltage <sup>(3)</sup> $R_{BE} = 10 \Omega, I_C = 100 \text{ mAdc}$	$V_{(BR)CER}$	40		Vdc
Collector-Base Cutoff Current $V_{CB} = 100 \text{ Vdc}$ $V_{CB} = 30 \text{ Vdc}$	$I_{CBO}$		10 0.1	$\mu\text{Adc}$
Emitter-Base Cutoff Current $V_{EB} = 7.0 \text{ Vdc}$	$I_{EBO}$		10	$\mu\text{Adc}$

**ON CHARACTERISTICS <sup>(3)</sup>**

Forward-Current Transfer Ratio $I_C = 150 \text{ mAdc}, V_{CE} = 10 \text{ Vdc}$	$h_{FE}$	20 40	60 120	
Collector-Emitter Saturation Voltage $I_C = 150 \text{ mAdc}, I_B = 15 \text{ mAdc}$	$V_{CE(sat)}$	0.3	1.5	Vdc
Base-Emitter Saturation Voltage $I_C = 150 \text{ mAdc}, I_B = 15 \text{ mAdc}$	$V_{BE(sat)}$		1.3	Vdc

 (3) Pulse Test: Pulse Width 250 to 350 $\mu\text{s}$ , Duty Cycle  $\leq 2.0\%$ .

2N696, 2N697 SERIES

**ELECTRICAL CHARACTERISTICS (con't)**

Characteristics	Symbol	Min.	Max.	Unit
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**DYNAMIC CHARACTERISTICS**

Magnitude of Common Emitter Small-Signal Short-Circuit Forward-Current Transfer Ratio	$h_{fe}$	2.5 3.0	10 12	
$I_C = 50 \text{ mA dc}$ , $V_{CE} = 10 \text{ V dc}$ ; $f = 20 \text{ MHz}$ 2N696 2N697				
Output Capacitance $V_{CB} = 10 \text{ V dc}$ , $I_E = 0$ , $100 \text{ kHz} \leq f \leq 1.0 \text{ MHz}$	$C_{obo}$	2.0	25	pF

**SWITCHING CHARACTERISTICS**

Turn-On Time	$t_{on}$		200	$\eta s$
Turn-Off Time	$t_{off}$		1,000	$\eta s$