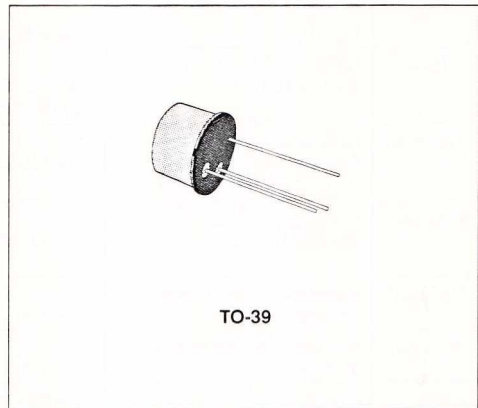


MEDIUM POWER AMPLIFIER

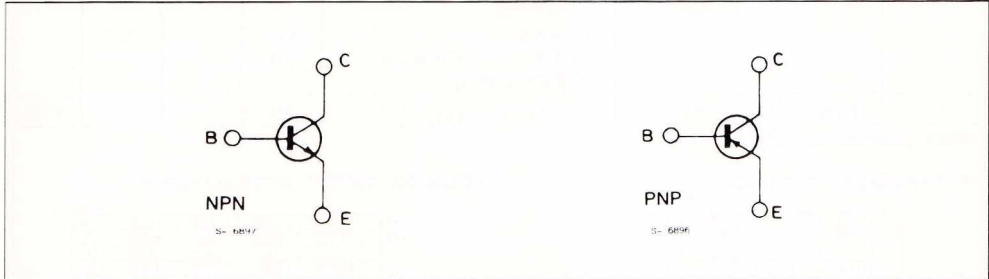
DESCRIPTION

The BC440 and BC441 are silicon planar epitaxial NPN transistors in TO-39 metal case. They are intended for general purpose applications, especially for driver stages.

The complementary PNP types are respectively the BC460 and BC461.



INTERNAL SCHEMATIC DIAGRAM



ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value		Unit
		BC440	BC441	
V_{CBO}	Collector-base Voltage ($I_E = 0$)	50	70	V
$V_{CEO(SUS)}$	Collector-emitter Voltage ($I_B = 0$)	40	60	V
V_{CER}	Collector-emitter Voltage ($R_{BE} \leq 100 \Omega$)	50	70	V
V_{EBO}	Emitter-base Voltage ($I_C = 0$)	5		V
I_{CM}	Collector Peak Current	2		A
P_{tot}	Total Power Dissipation at $T_{amb} \leq 25^\circ C$ at $T_{case} \leq 25^\circ C$	1		W
		10		W
T_{stg}	Storage Temperature	- 65 to 200		$^\circ C$
T_j	Junction Temperature	200		$^\circ C$

THERMAL DATA

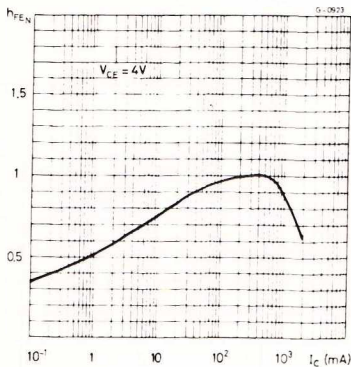
$R_{th\ j-case}$	Thermal Resistance Junction-case	Max	17.5	°C/W
$R_{th\ j-amb}$	Thermal Resistance Junction-ambient	Max	175	°C/W

ELECTRICAL CHARACTERISTICS ($T_{case} = 25\text{ °C}$ unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I_{CBO}	Collector Cutoff Current ($I_E = 0$)	$V_{CB} = 40\text{ V}$			100	nA
I_{CER}	Collector Cutoff Current ($R_{BE} = 100\ \Omega$)	For BC440 $V_{CE} = 50\text{ V}$ For BC441 $V_{CE} = 70\text{ V}$			10 10	μA μA
$V_{(BR)\ EBO}$	Emitter Base Breakdown Voltage ($I_C = 0$)	$I_E = 100\ \mu\text{A}$	5			V
$V_{(BR)\ CEO}^*$	Collector-emitter Breakdown Voltage ($I_B = 0$)	$I_C = 10\text{ mA}$ For BC440 For BC441	40 60			V V
$V_{CE(sat)}^*$	Collector-emitter Saturation Voltage	$I_C = 1\text{ A}$ $I_B = 100\text{ mA}$			1	V
$V_{BE(sat)}$	Base-emitter Saturation Voltage	$I_C = 1\text{ A}$ $I_B = 100\text{ mA}$			1.5	V
h_{FE}^*	DC Current Gain	Gr. 4 $I_C = 500\text{ mA}$ $V_{CE} = 4\text{ V}$ Gr. 5 $I_C = 500\text{ mA}$ $V_{CE} = 4\text{ V}$ Gr. 6 $I_C = 500\text{ mA}$ $V_{CE} = 4\text{ V}$ $I_C = 1\text{ A}$ $V_{CE} = 2\text{ V}$ (for BC440 only)	40 60 115 20		70 130 250	
f_T	Transition frequency	$I_C = 50\text{ mA}$ $V_{CE} = 4\text{ V}$	50			MHz

* Pulsed : pulse duration = 300 μs , duty cycle = 1 %.

DC Normalized Current Gain.



Collector-emitter Saturation Voltage.

