

# New Jersey Semi-Conductor Products, Inc.

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**BC440**  
**BC441**

**BC460**  
**BC461**

THE BC440, BC441, BC460, BC461 ARE SILICON PLANAR EPITAXIAL TRANSISTORS FOR AF DRIVERS AND OUTPUTS, AS WELL AS FOR SWITCHING APPLICATIONS UP TO 1 AMPERE. THE BC440, BC441 ARE NPN AND ARE COMPLEMENTARY TO THE PNP BC460, BC461 RESPECTIVELY.

CASE TO-39



**ABSOLUTE MAXIMUM RATINGS**

For p-n-p devices, voltage and current values are negative.

		BC440(NPN) BC460(PNP)	BC441(NPN) BC461(PNP)
Collector-Emitter Voltage ( $R_{BE} \leq 100 \Omega$ )	$V_{CER}$	50V	75V
Collector-Emitter Voltage ( $I_B=0$ )	$V_{CEO}$	40V	60V
Emitter-Base Voltage	$V_{EBO}$	5V	5V
Collector Current	$I_C$		1A
Collector Peak Current	$I_{CM}$		2A
Total Power Dissipation ( $T_C \leq 25^\circ C, V_{CE} \leq 10V$ ) ( $T_A \leq 25^\circ C$ )	$P_{tot}$	10W	1W
Operating Junction & Storage Temperature	$T_j, T_{stg}$	-55 to 200°C	

**ELECTRICAL CHARACTERISTICS** ( $T_A=25^\circ C$  unless otherwise noted)

PARAMETER	SYMBOL	BC440 BC460		BC441 BC461		UNIT	TEST CONDITIONS
		MIN	MAX	MIN	MAX		
Collector-Emitter Breakdown Voltage	$V_{CEO}^*$	40		60		V	$I_C=100mA, I_B=0$
Emitter-Base Breakdown Voltage	$V_{EBO}$	5		5		V	$I_E=0.1mA, I_C=0$
Collector Cutoff Current	$I_{CBO}$		100		100	nA	$V_{CB}=40V, I_E=0$
Collector Cutoff Current	$I_{CER}$		10		10	$\mu A$	$V_{CE}=50V, R_{BE}=100\Omega$
						$\mu A$	$V_{CE}=70V, R_{BE}=100\Omega$
Collector-Emitter Saturation Voltage	$V_{CE(sat)}^*$		1		1	V	$I_C=1A, I_B=0.1A$
Base-Emitter Saturation Voltage	$V_{BE(sat)}^*$		1.5		1.5	V	$I_C=1A, I_B=0.1A$
D.C. Current Gain	$H_{FE}^*$	40	250	40	250	V	$I_C=500mA, V_{CE}=4V$
	Group 4	40	70	40	70		
	Group 5	60	130	60	130		
	Group 6	115	250	115	250		
		20					$I_C=1A, V_{CE}=2V$
Current Gain-Bandwidth Product	$f_T$	50		50		MHz	$I_C=50mA, V_{CE}=4V$
Collector-Base Capacitance	$C_{ob}$		25		25	pF	$V_{CB}=10V, I_E=0$ $f=1MHz$

**Quality Semi-Conductors**