

# BC160 BC161

PNP SILICON AF MEDIUM POWER AMPLIFIERS & SWITCHES

THE BC160, BC161 ARE PNP SILICON PLANAR EPITAXIAL TRANSISTORS RECOMMENDED FOR AF DRIVERS AND OUTPUTS, AS WELL AS FOR SWITCHING APPLICATIONS UP TO 1 AMPERE. THE BC160, BC161 ARE COMPLEMENTARY TO THE NPN TYPE BC140, BC141 RESPECTIVELY.

CASE T0-39



C E B

## ABSOLUTE MAXIMUM RATINGS

		BC160	BC161
Collector-Emitter Voltage ( $V_{BE}=0$ )	- $V_{CES}$	40V	60V
Collector-Emitter Voltage ( $I_B=0$ )	- $V_{CEO}$	40V	60V
Emitter-Base Voltage	- $V_{EBO}$	5V	5V
Collector Current	- $I_C$		1A
Total Power Dissipation (@ $T_C \leq 45^\circ C$ )	$P_{tot}$		3.7W
(@ $T_A \leq 45^\circ C$ )			650mW
Operating Junction & Storage Temperature	$T_j, T_{stg}$		-55 to 175°C

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

PARAMETER	SYMBOL	BC160		BC161		UNIT	TEST CONDITIONS
		MIN	TYP MAX	MIN	TYP MAX		
Collector-Emitter Breakdown Voltage	- $V_{CES}$	40		60		V	- $I_C=0.1mA$ $V_{BE}=0$
Collector-Emitter Breakdown Voltage	- $V_{CEO} *$	40		60		V	- $I_C=50mA$ $I_B=0$
Emitter-Base Breakdown Voltage	- $V_{EBO}$	5		5		V	- $I_E=0.1mA$ $I_C=0$
Collector Cutoff Current	- $I_{CES}$		100		100	nA	$V_{CE}=V_{CES}$
			100		100	$\mu A$	$V_{CE}=V_{CES}$ $T_A=150^\circ C$
Collector-Emitter Saturation Voltage	- $V_{CE(sat)} *$		1		1	V	- $I_C=1A$ - $I_B=0.1A$
Base-Emitter Voltage	- $V_{BE} *$		1.7		1.7	V	- $I_C=1A$ - $V_{CE}=1V$
D.C. Current Gain	$H_{FE} *$	40	250	40	250		- $I_C=100mA$ - $V_{CE}=1V$
		Group 6	40	100	40	100	
		Group 10	63	160	63	160	
		Group 16	100	250	100	250	
HFE Matched Pair Ratio	$\frac{H_{FE} 1}{H_{FE} 2} *$		1.41		1.41		- $I_C=100mA$ - $V_{CE}=1V$
Current Gain-Bandwidth Product	$f_T$	50	140	50	140	MHz	- $I_C=50mA$ - $V_{CE}=10V$
Collector-Base Capacitance	$C_{ob}$		18 30		18 30	pF	- $V_{CB}=10V$ $I_E=0$ $f=1MHz$
Emitter-Base Capacitance	$C_{ib}$		180		180	pF	- $V_{EB}=0.5V$ $I_C=0$ $f=1MHz$
Turn-On Time	$t_{on}$		500		500	nS	- $I_C=100mA$ - $I_B=5mA$
Turn-Off Time	$t_{off}$		650		650	nS	- $I_C=100mA$ - $I_{B1}=I_{B2}=5mA$

\* Pulse Test : Pulse Width=0.3mS, Duty Cycle=1%

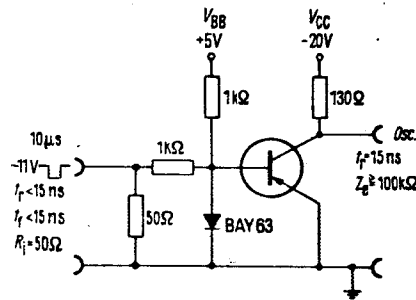
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SWITCHING TIME TEST CIRCUIT ( $t_{on}$ ,  $t_{off}$ )



TYPICAL CHARACTERISTICS

