

# MICRO ELECTRONICS

## 2N/PN3053 2N/PN4037

COMPLEMENTARY  
SILICON  
TRANSISTORS

2N/PN3053(NPN) & 2N/PN4037(PNP) are complementary silicon planar epitaxial transistors for use in AF medium power drivers and outputs, as well as for switching applications.

T0-39



C E B

2N3053  
2N4037

T0-92A



EBC

PN3053  
PN4037

### ABSOLUTE MAXIMUM RATINGS

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

Collector-Base Voltage  
Collector-Emitter Voltage  
Emitter-Base Voltage  
Collector Current  
Total Power Dissipation @  $T_A \leq 25^\circ\text{C}$

$V_{CB0}$   
 $V_{CE0}$   
 $V_{EB0}$   
 $I_C$   
 $P_{tot}$

2N/PN3053

60V

40V

5V

0.7A

1W (2N3053/2N4037)  
0.625W (PN3053/PN4037)

2N/PN4037

60V

40V

7V

1A

Operating Junction & Storage Temperature

$T_j, T_{stg}$

-65 to +200°C (2N3053/2N4037)  
-55 to +150°C (PN3053/PN4037)

### ELECTRICAL CHARACTERISTICS ( $T_A = 25^\circ\text{C}$ )

PARAMETER	SYMBOL	2N/PN3053		2N/PN4037		UNIT	TEST CONDITIONS
		MIN	MAX	MIN	MAX		
Collector-Base Breakdown Voltage	$BV_{CB0}$	60		60		V	$I_C = 0.1\text{mA}$ $I_E = 0$
Collector-Emitter Breakdown Voltage	$LV_{CER} *$	50				V	$I_C = 100\text{mA}$ $R_{BE} = 10\Omega$
				60		V	$I_C = 100\text{mA}$ $R_{BE} = 200\Omega$
Collector-Emitter Breakdown Voltage	$LV_{CEV} *$			60		V	$I_C = 100\text{mA}$ $V_{EB} = 1.5\text{V}$
Collector-Emitter Breakdown Voltage	$LV_{CEO} *$	40		40		V	$I_C = 100\text{mA}$ $I_B = 0$
Emitter-Base Breakdown Voltage	$BV_{EB0}$	5		7		V	$I_E = 0.1\text{mA}$ $I_C = 0$
Collector Cutoff Current	$I_{CEV}$		0.25			$\mu\text{A}$	$V_{CE} = 30\text{V}$ $V_{EB} = 1.5\text{V}$
Collector Cutoff Current	$I_{CBO}$			0.25		$\mu\text{A}$	$V_{CB} = 60\text{V}$ $I_E = 0$
Collector Cutoff Current	$I_{CEO}$			5		$\mu\text{A}$	$V_{CE} = 30\text{V}$ $I_B = 0$
Emitter Cutoff Current	$I_{EBO}$	0.25				$\mu\text{A}$	$V_{EB} = 4\text{V}$ $I_C = 0$
				1		$\mu\text{A}$	$V_{EB} = 5\text{V}$ $I_C = 0$
Collector-Emitter Saturation Voltage	$V_{CE(sat)} *$	1.4		1.4		V	$I_C = 150\text{mA}$ $I_B = 15\text{mA}$
Base-Emitter Saturation Voltage	$V_{BE(sat)} *$	1.7				V	$I_C = 150\text{mA}$ $I_B = 15\text{mA}$
D.C. Current Gain	$h_{FE} *$			15			$I_C = 1\text{mA}$ $V_{CE} = 10\text{V}$
		50	250	50	250		$I_C = 150\text{mA}$ $V_{CE} = 10\text{V}$
		25					$I_C = 150\text{mA}$ $V_{CE} = 2.5\text{V}$

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PARAMETER	SYMBOL	2N/PN3053		2N/PN4037		UNIT	TEST CONDITIONS
		MIN	MAX	MIN	MAX		
Current Gain-Bandwidth Product	$f_T$	100		60		MHz	$I_C=50\text{mA}$ $V_{CE}=10\text{V}$
Collector-Base Capacitance	$C_{ob}$		15		30	pF	$V_{CB}=10\text{V}$ $I_E=0$ $f=1\text{MHz}$
Emitter-Base Capacitance	$C_{ib}$		80		90	pF	$V_{EB}=0.5\text{V}$ $I_C=0$ $f=1\text{MHz}$

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

### TYPICAL CHARACTERISTICS

