

TL/G/10037-7

**DESCRIPTION**

Process 37 is a double-diffused, silicon epitaxial planar device. Complement to Process 77.

**APPLICATION**

This device was designed for general purpose medium power amplifiers and switching circuits that require collector currents to 2A.

**PRINCIPAL DEVICE TYPES**

**TO-202 EBC:** NSDU01

**TO-237 EBC:** 2N6714, 92PU01

**TO-226 EBC:** MPS6714

**TO-92 EBC:** PN6714

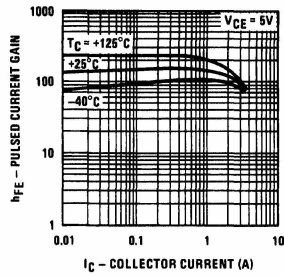
**ELECTRICAL CHARACTERISTICS ( $T_A = 25^\circ\text{C}$ )**

Symbol	Conditions	Min	Typ	Max	Units
$BV_{CEO}$	$I_C = 10 \text{ mA}$	25			V
$BV_{CBO}$	$I_C = 100 \mu\text{A}$	40			V
$BV_{EBO}$	$I_E = 10 \mu\text{A}$	5			V
$I_{CBO}$	$V_{CB} = 20\text{V}$			100	nA
$I_{EBO}$	$V_{EB} = 4\text{V}$			100	nA
$h_{FE}$	$I_C = 1 \text{ mA}, V_{CE} = 1\text{V}$ $I_C = 100 \text{ mA}, V_{CE} = 1\text{V}$ $I_C = 1 \text{ A}, V_{CE} = 1\text{V}$	40 60 40	160	360	
$V_{CE(SAT)}$	$I_C = 1 \text{ A}, I_B = 0.1 \text{ A}$			0.5	V
$V_{BE(SAT)}$	$I_C = 1 \text{ A}, I_B = 0.1 \text{ A}$			1.25	V
$f_T$	$I_C = 100 \text{ mA}, V_{CE} = 10\text{V}$	150	300		MHz
$C_{ob}$	$V_{CB} = 10\text{V}, f = 1 \text{ MHz}$		17	20	pF
$P_{D(max)}$					
TO-202	$T_C = 25^\circ\text{C}$	10			W
	$T_A = 25^\circ\text{C}$	2			
TO-226	$T_C = 25^\circ\text{C}$	2			W
	$T_A = 25^\circ\text{C}$	1			
TO-237	$T_C = 25^\circ\text{C}$	2			W
	$T_A = 25^\circ\text{C}$	850			mW
TO-92	$T_A = 25^\circ\text{C}$	600			mW
$\theta_{JC}$					
TO-202	$T_C = 25^\circ\text{C}$			12.5	$^\circ\text{C/W}$
TO-226	$T_C = 25^\circ\text{C}$			62.5	$^\circ\text{C/W}$
TO-237	$T_C = 25^\circ\text{C}$			62.5	$^\circ\text{C/W}$
TO-92	$T_C = 25^\circ\text{C}$			125	$^\circ\text{C/W}$

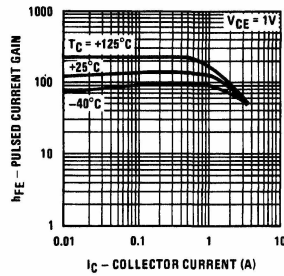
# Process 37

Symbol	Conditions	Min	Typ	Max	Units
$\theta_{JA}$	TO-202	$T_A = 25^\circ\text{C}$		62.5	$^\circ\text{C}/\text{W}$
	TO-226	$T_A = 25^\circ\text{C}$		125	$^\circ\text{C}/\text{W}$
	TO-237	$T_A = 25^\circ\text{C}$		147	$^\circ\text{C}/\text{W}$
	TO-92	$T_A = 25^\circ\text{C}$		208	$^\circ\text{C}/\text{W}$
$T_{J(\text{max})}$	All Plastic Parts	150			$^\circ\text{C}$

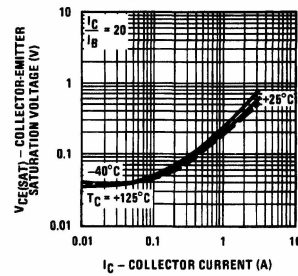
Typical Pulsed Current Gain vs Collector Current



Typical Pulsed Current Gain vs Collector Current

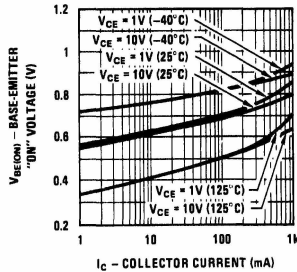


Collector-Emitter Saturation Voltage vs Collector Current

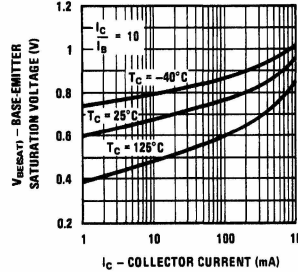


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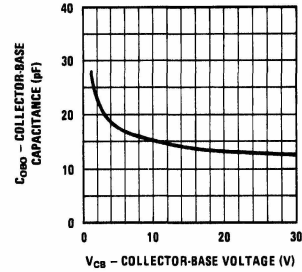
Base-Emitter ON Voltage vs Collector Current



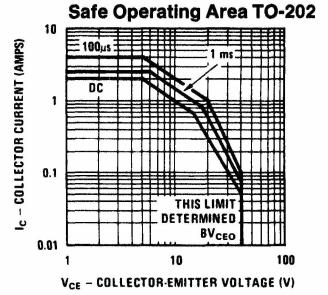
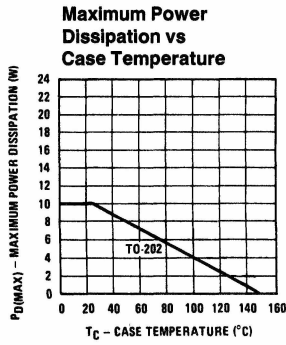
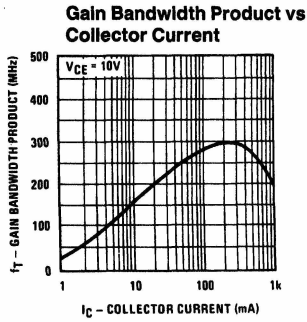
Base-Emitter Saturation Voltage vs Collector Current



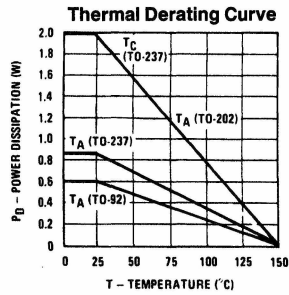
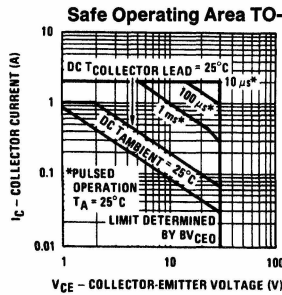
Collector-Base Capacitance vs Collector-Base Voltage



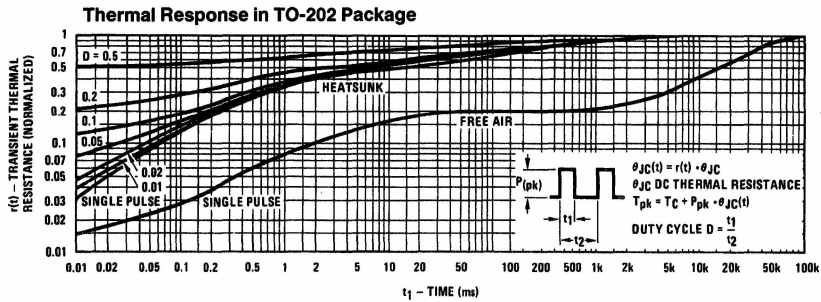
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TL/G/10037-11



TL/G/10037-13