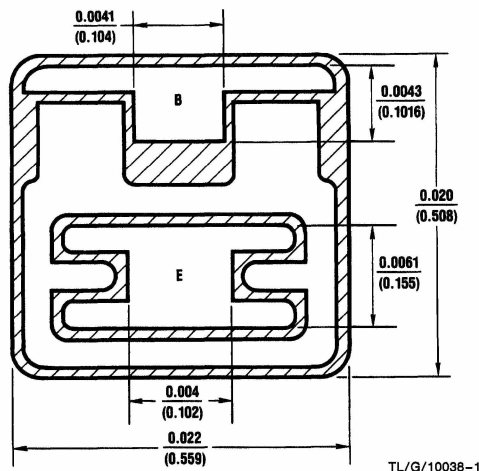



DESCRIPTION

Process 61 is a monolithic, double-diffused, silicon epitaxial Darlington. Complement to Process 05.

APPLICATION

This device is designed for applications requiring extremely high current gain at collector currents to 1A.

PRINCIPAL DEVICE TYPES

TO-202 EBC: D41K1-4, NSDU95

TO-226 EBC: MPSW63

TO-92 EBC: MPSA63

TO-116: MPQA63

TO-236: MMBTA63

16-SOIC: MMPQA63

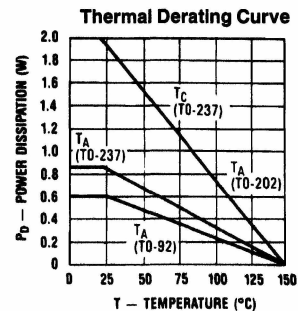
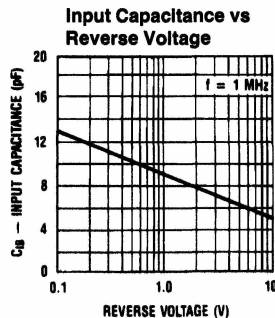
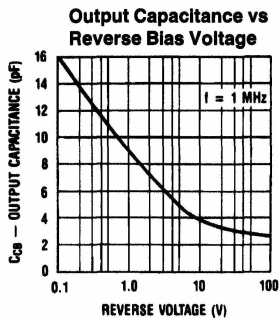
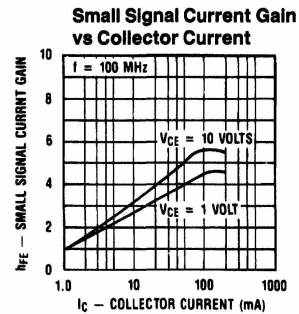
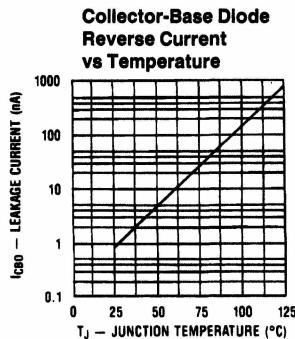
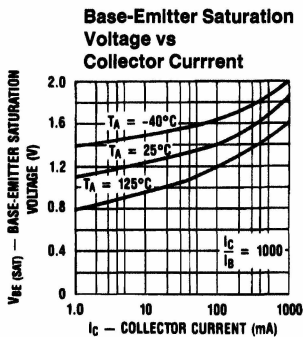
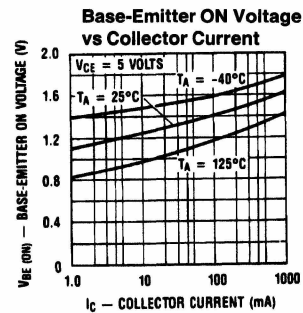
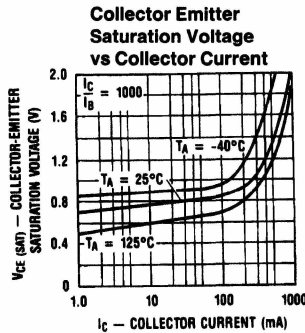
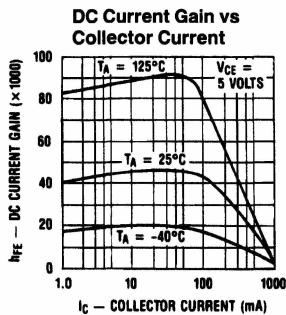
ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$)

Symbol	Conditions	Min	Typ	Max	Units
NF	$I_C = 1 \text{ mA}$, $V_{CE} = 5 \text{ V}$, $R_S = 100 \text{ k}$, $f = 1 \text{ kHz}$		2		dB
C_{CB}	$V_{CB} = 10 \text{ V}$, $I_E = 0$, $f = 1 \text{ MHz}$		5	8	pF
h_{FE}	$I_C = 10 \text{ mA}$, $V_{CE} = 5 \text{ V}$ $I_C = 100 \text{ mA}$, $V_{CE} = 5 \text{ V}$ $I_C = 1 \text{ A}$, $V_{CE} = 5 \text{ V}$	5,000 5,000 1,500	40,000	200,000	
$V_{CE(SAT)}$	10 mA , 0.01 mA 100 mA , 0.1 mA			1.0 1.5	V
$V_{BE(ON)}$	10 mA , 5 V 100 mA , 5 V		1.2 1.25	1.4 2.0	V
h_{fe}	$I_C = 10 \text{ mA}$, $V_{CE} = 5.0 \text{ V}$, $f = 1 \text{ kHz}$		50,000		
BV_{CES}	$I_C = 100 \mu\text{A}$	40			V
BV_{EBO}	$I_E = 10 \mu\text{A}$	12			V
I_{CES}	$V_{CE} = 15 \text{ V}$, $V_{BE} = 0$			100	nA
I_{CBO}	$V_{CB} = 15 \text{ V}$, $I_E = 0$			100	nA
I_{EBO}	$V_{EB} = 10 \text{ V}$, $I_C = 0$			100	nA
$P_{D(max)}$					
TO-202	$T_C = 25^\circ\text{C}$ $T_A = 25^\circ\text{C}$	10 2			W W
TO-226	$T_C = 25^\circ\text{C}$ $T_A = 25^\circ\text{C}$	2 1			W W
TO-237	$T_C = 25^\circ\text{C}$ $T_A = 25^\circ\text{C}$	2 850			W mW
TO-92	$T_A = 25^\circ\text{C}$	600			mW
TO-236	$T_C = 25^\circ\text{C}$	350			mW

Process 61

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

Symbol	Conditions	Min	Typ	Max	Units
θ_{JC}					
TO-202	$T_C = 25^\circ\text{C}$			12.5	$^\circ\text{C/W}$
TO-237	$T_C = 25^\circ\text{C}$			62.5	$^\circ\text{C/W}$
θ_{JA}					
TO-202	$T_A = 25^\circ\text{C}$			62.5	$^\circ\text{C/W}$
TO-226	$T_A = 25^\circ\text{C}$			125	$^\circ\text{C/W}$
TO-237	$T_A = 25^\circ\text{C}$			147	$^\circ\text{C/W}$
TO-92	$T_A = 25^\circ\text{C}$			208	$^\circ\text{C/W}$
$T_{J(\text{max})}$	All Plastic Parts	150			$^\circ\text{C}$



TL/G/10038-2