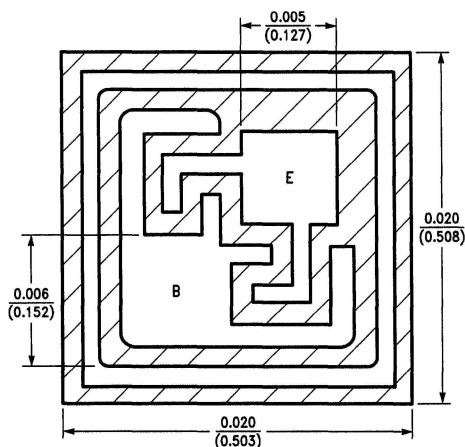




TL/G/10038-26

DESCRIPTION

Process 69 is a non-overlay, double-diffused, silicon epitaxial device. Complement to Process 11.

APPLICATION

These devices are designed for general purpose amplifier applications to 300 mA collector current.

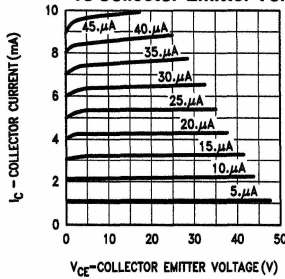
PRINCIPAL DEVICE TYPES
TO-92 EBC: PN201

TO-236: MMBT201

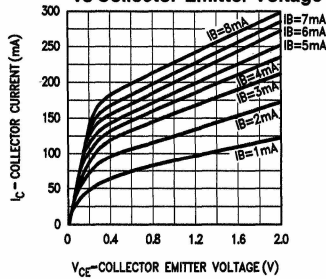
ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$)

Symbol	Conditions	Min	Typ	Max	Units
C_{ob}	$V_{CB} = 10\text{V}, f = 1\text{ MHz}$		3.0	4.0	pF
C_{ib}	$V_{EB} = 0.5\text{V}, f = 1\text{ MHz}$		16	25	pF
NF	$I_C = 100\text{ }\mu\text{A}, V_{CE} = 5\text{V}$ $R_S = 2\text{ k}\Omega, f = 1\text{ KHz}$		2.0		dB
f_T	$V_{CE} = 10\text{V}, I_C = 20\text{ mA}$	150	250		MHz
h_{FE}	$V_{CE} = 1.0\text{V}, I_C = 1\text{ mA}$ $V_{CE} = 1.0\text{V}, I_C = 100\text{ mA}$ $V_{CE} = 1.0\text{V}, I_C = 150\text{ mA}$	40 100 75	200	400	
$V_{CE(SAT)}$	$I_C = 150\text{ mA}, I_B = 15\text{ mA}$			0.5	V
$V_{BE(SAT)}$	$I_C = 150\text{ mA}, I_B = 15\text{ mA}$			1.0	V
BV_{CBO}	$I_C = 10\text{ }\mu\text{A}$	80			
BV_{CEO}	$I_C = 1\text{ mA}$	65			
BV_{EBO}	$I_E = 10\text{ }\mu\text{A}$	6.0			
I_{CBO}	$V_{CB} = 40\text{V}$			50	nA
I_{CES}	$V_{CE} = 30\text{V}$			50	nA
I_{EBO}	$V_{EB} = 4.0\text{V}$			50	nA
$P_{D(max)}$	$T_A = 25^\circ\text{C}$	600			mW
TO-92	$T_C = 25^\circ\text{C}$	350			mW
TO-236					

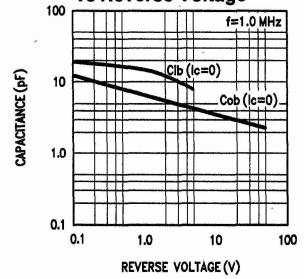
Collector Current vs Collector-Emitter Voltage



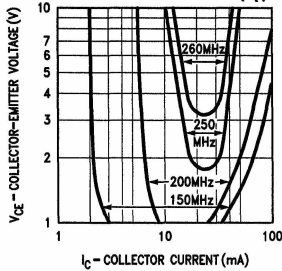
Collector Current vs Collector-Emitter Voltage



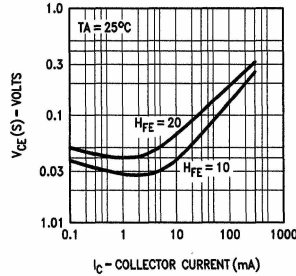
Input and Output Capacitance vs Reverse Voltage



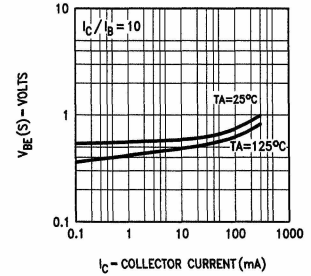
Contours of Constant Gain Bandwidth Product (f_T)



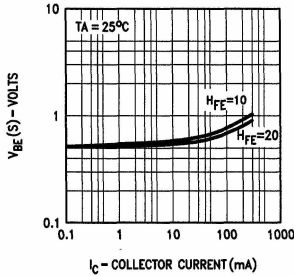
Collector Saturation Voltage vs Collector Current



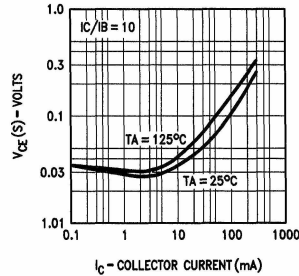
Base Saturation Voltage vs Collector Current



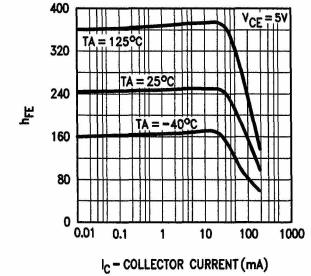
Base Saturation Voltage vs Collector Current



Collector Saturation Voltage vs Collector Current



DC Current Gain vs Collector Current



Total Power Dissipation vs Ambient Temperature

