

TL/G/10037-14

DESCRIPTION

Process 38 is a double-diffused, silicon epitaxial planar device. Complement to Process 78.

APPLICATION

This device was designed for general purpose medium power amplifiers and switching circuits that require collector currents to 1.5A.

PRINCIPAL DEVICE TYPES

TO-202 EBC: D40D1-6, NSDU05

TO-237 EBC: 2N6715, 92PU05

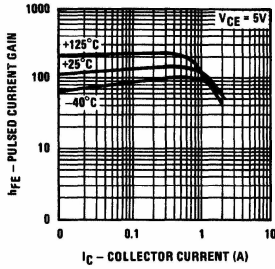
TO-92 EBC: PN6715

TO-226 EBC: MPS6715

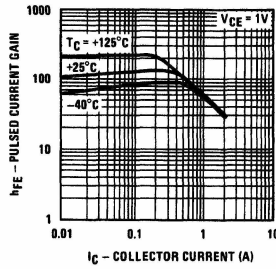
ELECTRICAL CHARACTERISTICS (T_A = 25°C)

Symbol	Conditions	Min	Typ	Max	Units
BV _{CEO}	I _C = 10 mA	40			V
BV _{CBO}	I _C = 100 μA	65			V
BV _{EBO}	I _E = 10 μA	5			V
I _{CBO}	V _{CB} = 40V			100	nA
I _{EBO}	V _{EB} = 4V			100	nA
h _{FE}	I _C = 1 mA, V _{CE} = 1V I _C = 100 mA, V _{CE} = 1V I _C = 1A, V _{CE} = 1V	40 60 20	160	360	
V _{CE(SAT)}	I _C = 500 mA, I _B = 50 mA			0.5	V
V _{BE(SAT)}	I _C = 500 mA, I _B = 50 mA			1.25	V
f _T	I _C = 100 mA, V _{CE} = 10V	125	250		MHz
C _{ob}	V _{CB} = 10V, f = 1 MHz		14	18	pF
P _{D(max)}					
TO-202	T _C = 25°C T _A = 25°C	10 2			W
TO-226	T _C = 25°C T _A = 25°C	2 1			W
TO-237	T _C = 25°C T _A = 25°C	2 850			W mW
TO-92	T _A = 25°C	600			mW
θ _{JC}					
TO-202	T _C = 25°C			12.5	°C/W
TO-237	T _C = 25°C			62.5	°C/W
θ _{JA}					
TO-202	T _A = 25°C			62.5	°C/W
TO-226	T _A = 25°C			125	°C/W
TO-237	T _A = 25°C			147	°C/W
TO-92	T _A = 25°C			208	°C/W
T _{J(max)}	All Plastic Parts	150			°C

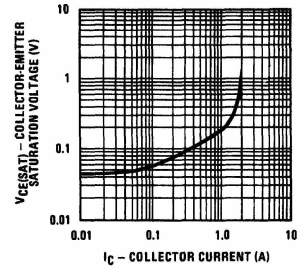
Typical Pulsed Current Gain vs Collector Current



Typical Pulsed Current Gain vs Collector Current

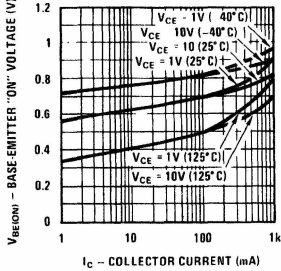


Collector-Emitter Saturation Voltage vs Collector Current

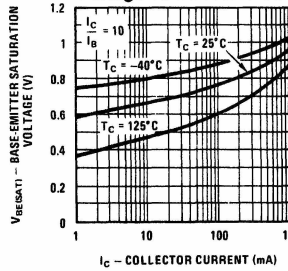


TL/G/10037-15

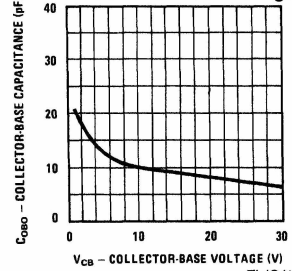
Base-Emitter ON Voltage vs Collector Current



Base-Emitter Saturation Voltage vs Collector Current

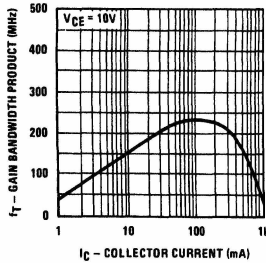


Collector-Base Capacitance vs Collector-Base Voltage

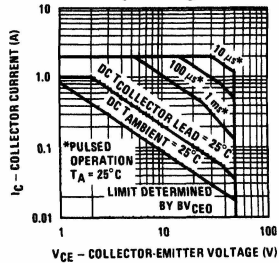


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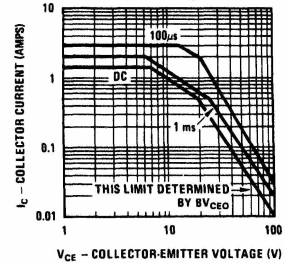
Gain Bandwidth Product vs Collector Current



Safe Operating Area TO-237

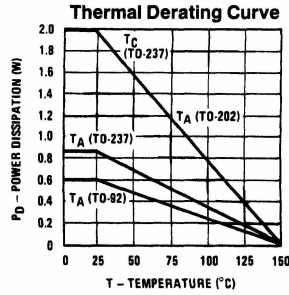
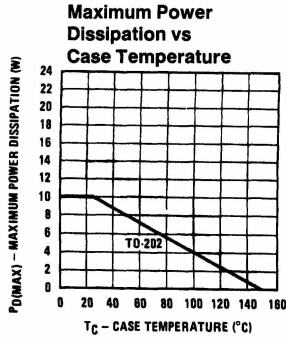


Safe Operating Area TO-202

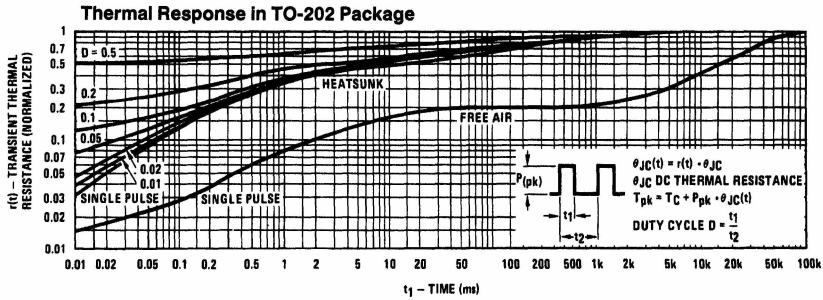


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Process 38



TL/G/10037-18



TL/G/10037-20