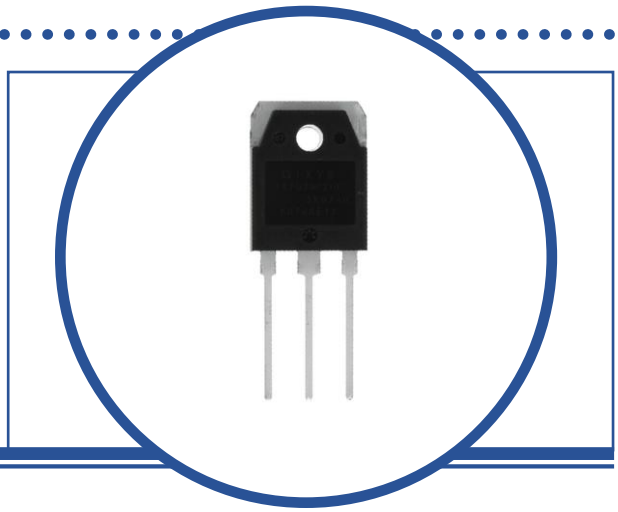
SILICON EPITAXIAL PLANAR NPN TRANSISTOR

MAG6331, MAG6331-R

- TO-3P Plastic Package
- Complimentary PNP – MAG9411
- Designed specifically for audio power amplifier applications
- Highest Current audio bipolar available on the market with widest Safe Operating Area in TO-3P package



ABSOLUTE MAXIMUM RATINGS (T_A = 25°C unless otherwise stated)

		MAG6331	MAG6331-R
V_{CBO}	Collector – Base Voltage	230V	260V
V_{CEO}	Collector – Emitter Voltage	230V	260V
V_{EBO}	Emitter – Base Voltage	5V	
I_C	Continuous Collector Current	18A	
I_B	Base Current	4A	
P_D	Total Power Dissipation at T_A = 25°C	300W	
T_J	Maximum Junction Temperature	150°C	
T_{stg}	Storage Temperature Range	-55 to +150°C	

THERMAL PROPERTIES

Symbols	Parameters	Min.	Typ.	Max.	Units
$R_{\theta JC}$	Thermal Resistance, Junction To Case			0.42	°C/W

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SILICON EPITAXIAL PNP TRANSISTOR MAG6331, MAG6331-R

ELECTRICAL CHARACTERISTICS (T_A = 25°C unless otherwise stated)

Symbols	Parameters	Test Conditions		Min.	Typ	Max.	Units
I_{CBO}	Collector-Cut-Off Current	MAG6331	V_{CB} = 230V			10	µA
		MAG6331-R	V_{CB} = 260V				
I_{EBO}	Emitter-Cut-Off-Current	V_{EB} = 5V				10	µA
$V_{(BR)CEO}$	Collector-Base Breakdown Voltage	I_C = 25mA	MAG6331	230			V
			MAG6331-R	260			
$V_{CE(sat)}$[(1)]	Collector-Emitter Saturation Voltage	I_C = 5A	I_B = 0.5A			2.0	V
h_{FE}	Forward-current transfer ratio	I_C = 5A	V_{CE} = 4V	70		140	

DYNAMIC CHARACTERISTICS

f_T	Transition Frequency	I_E = -2A	V_{CE} = 12V		60		MHz
C_{OB}	Output Capacitance	V_{CB} = 10V	f = 1.0MHz		250		pF

Notes
Pulse Width ≤ 300us, δ ≤ 2%t

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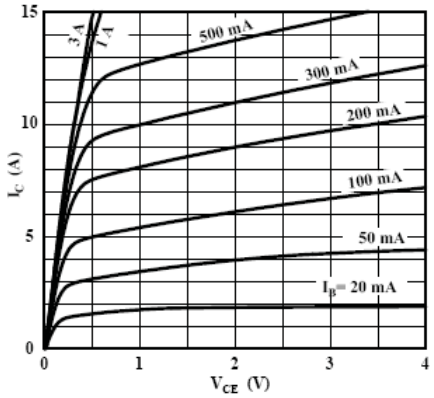
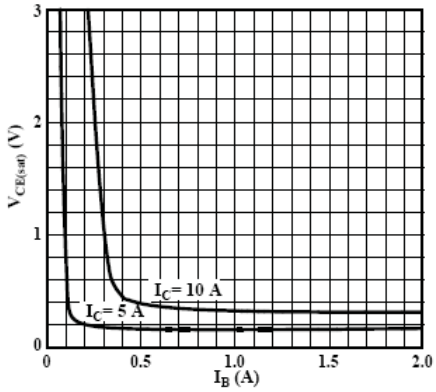
TYPICAL CHARACTERISTICS (T_A = 25°C unless otherwise stated)

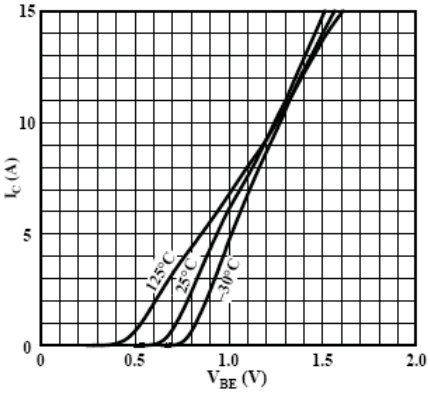
I_C vs. V_{CE}



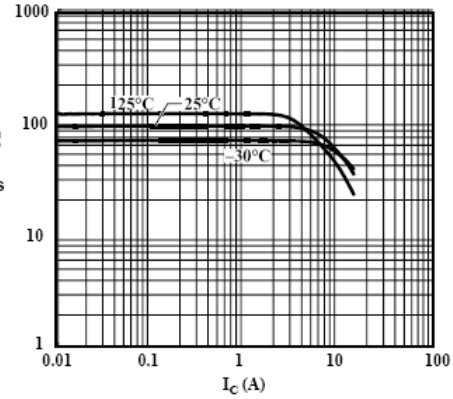
$V_{CE(sat)}$ vs. I_B



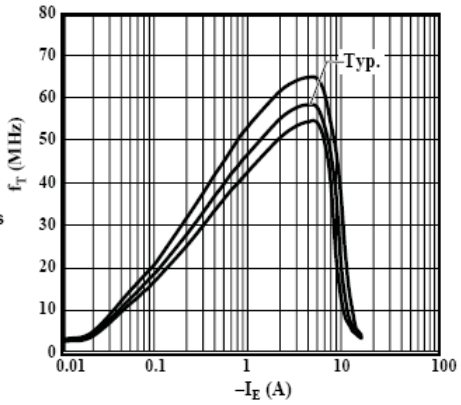
I_C vs. V_{BE}
V_{CE} = 4 V Continuous



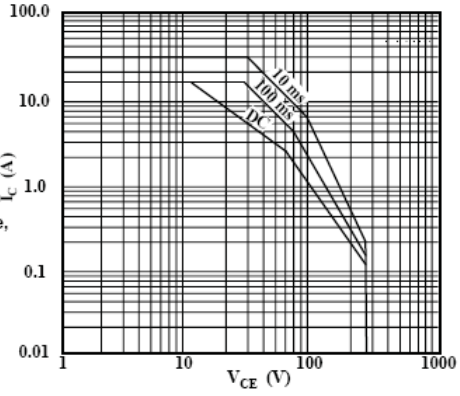
h_{FE} vs. I_C
V_{CE} = 4 V Continuous



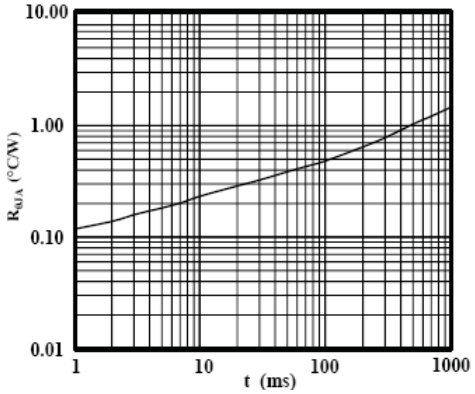
f_T vs. I_E
V_{CE} = 12 V Continuous



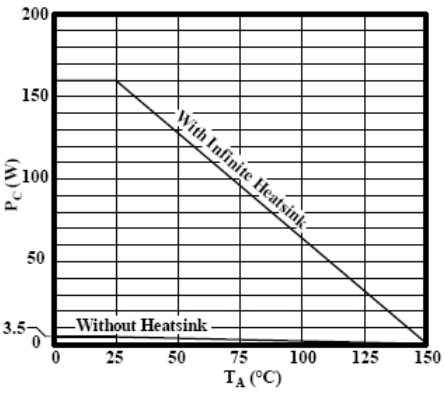
Safe Operating Area
T_A= 25°C, single pulse, no heatsink, natural cooling



$R_{\theta JA}$ vs. t



P_C vs. T_A



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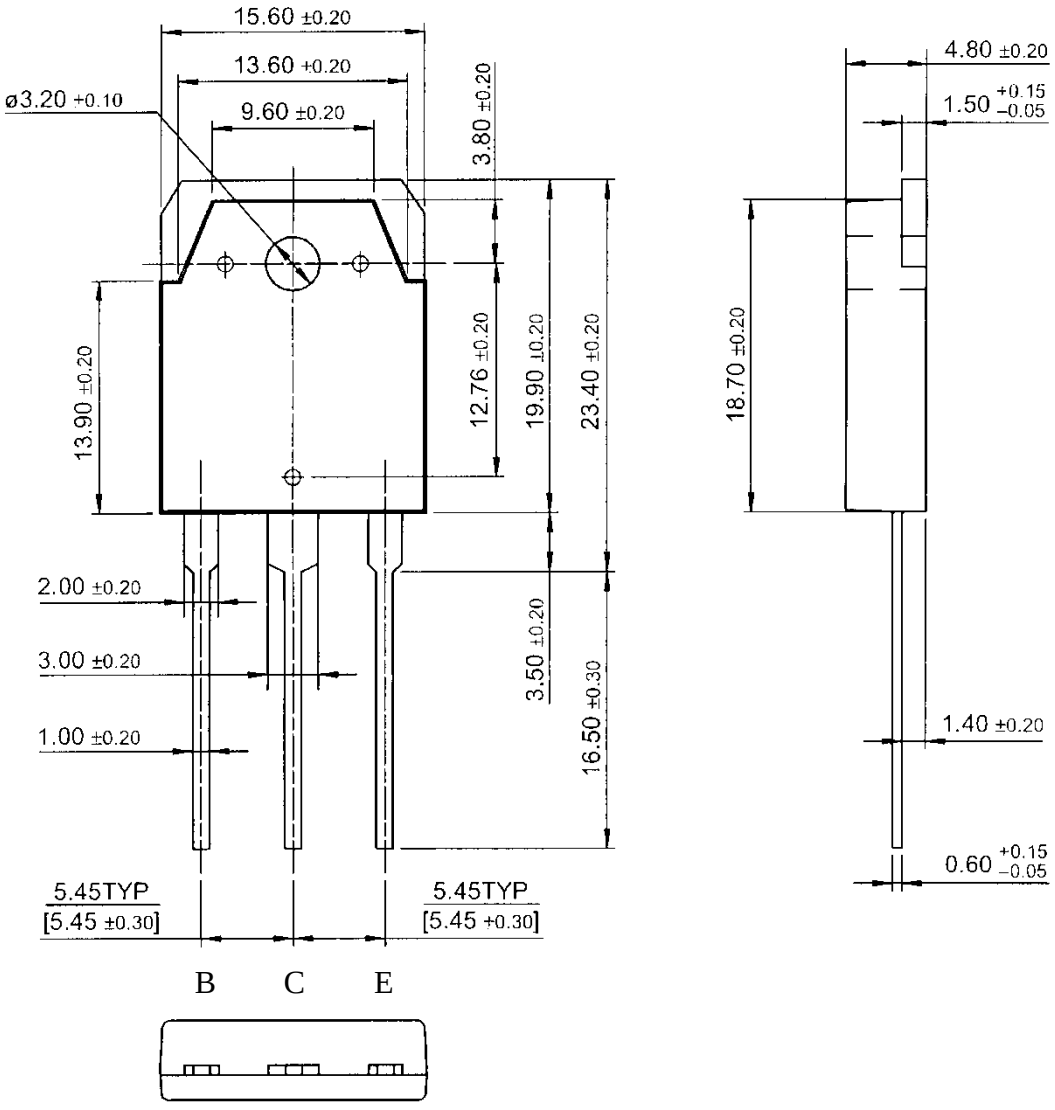
MECHANICAL DATA

Dimensions in mm (inches)



TO3P

Pin1 – Base Pin2 – Collector Pin3 - Emitter