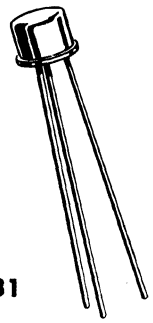
2N3295 (SILICON)



CASE 31
(TO-5)

Collector connected to case

NPN silicon annular Star transistor for linear amplifier applications from 2.0 to 100 MHz.

MAXIMUM RATINGS*

Rating	Symbol	Rating	Unit
Collector-Base Voltage	V_{CB}	60	Vdc
Collector-Emitter Voltage	V_{CES}	60	Vdc
Emitter-Base Voltage	V_{EB}	5.0	Vdc
Collector Current (Continuous)	I_C	250	mAdc
Base Current (Continuous)	I_B	50	mAdc
Total Device Dissipation (25°C Case Temperature) Derate above 25°C	P_D	2.0 13.3	Watts mW/°C
Total Device Dissipation (25°C Ambient Temperature) Derate above 25°C	P_D	0.8 5.33	Watts mW/°C
Junction Temperature Range	T_J	-65 to 175	°C
Storage Temperature Range	T_{stg}	-65 to 175	°C

* The maximum ratings as given for DC conditions can be exceeded on a pulse basis. See Electrical Characteristics.

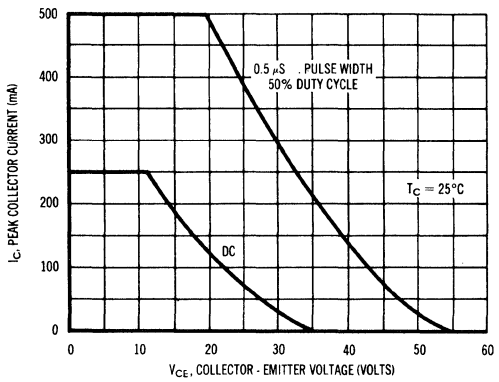
ELECTRICAL CHARACTERISTICS (T_A = 25°C unless otherwise noted)

Characteristic	Symbol	Rating	Min	Typ	Max	Unit
Collector-Emitter Current	I_{CES}	V_{CE} = 60Vdc, V_{BE} = 0	--	--	100	μ Adc
		V_{CE} = 50Vdc, V_{BE} = 0, T_C = 175°C	--	--	500	μ Adc
Collector Cutoff Current	I_{CBO}	V_{CB} = 50Vdc, I_E = 0	--	--	0.1	μ Adc
Emitter Cutoff Current	I_{EBO}	V_{EB} = 5 Vdc, I_C = 0	--	--	100	μ Adc
DC Current Gain	h_{FE}	I_C = 10mAdc, V_{CE} = 10Vdc	20	--	60	--
		I_C = 150mAdc, V_{CE} = 10Vdc [1]	20	--	--	--
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	I_C = 150mAdc, I_B = 15mAdc	--	--	0.5	Vdc
Base-Emitter Saturation Voltage	$V_{BE(sat)}$	I_C = 150mAdc, I_B = 15mAdc	--	--	2.0	Vdc
Collector-Emitter Sustain Voltage	$V_{CES(sus)}$ [1]	I_C = 100mA, R_{BE} = 0	30	--	--	Volts
Collector-Emitter Open Base Sustain Voltage	$V_{CEO(sus)}$ [1]	I_C = 100mA, I_B = 0	20	--	--	Volts
AC Current Gain	$\lvert h_{fe} \rvert$	V_{CE} = 10Vdc, I_C = 10mAdc, f=50MHz	4.0	--	--	--
Collector Output Capacitance	C_{ob}	V_{CB} = 10Vdc, I_E = 0, f = 100kHz	--	--	8.0	pF
Power Input (PEP) (Note 1)	P_{in}	P_{out} = 0.3 Watts PEP (0.15 W rms) f = 30MHz, V_{CE} = 15.0Vdc $I_{C(max)}$ = 40mA	--	--	12	mW
Power Gain	G_e		14	17	--	dB
Intermodulation Distortion Ratio	I_m		30	32	--	dB
Efficiency	η		25	30	--	%

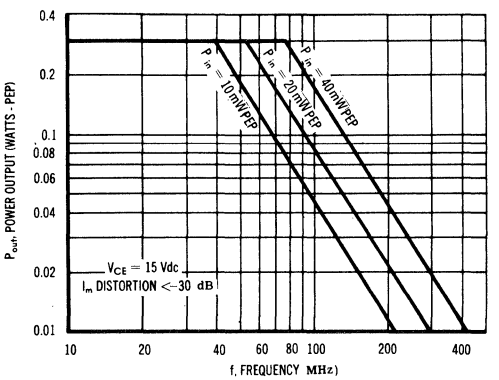
[1] Pulse Test: Pulse Width = 100μs, Duty Cycle = 2 %

Note 1. PEP. Peak Envelope Power

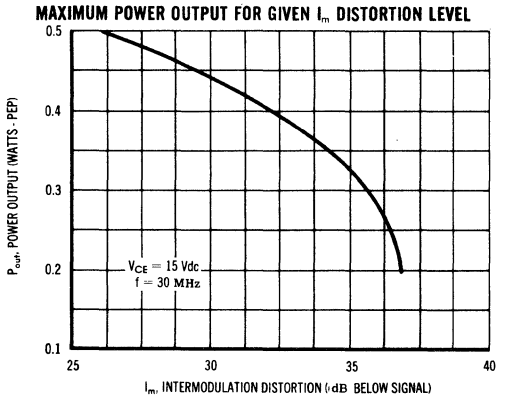
SAFE OPERATING AREA



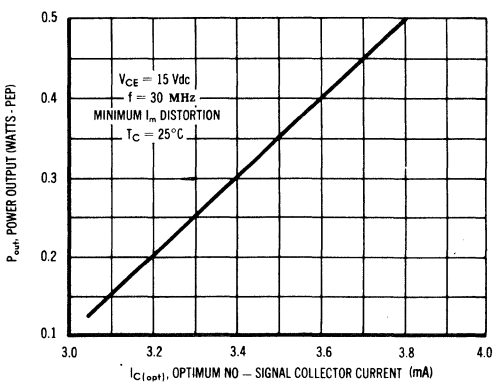
POWER OUTPUT versus FREQUENCY



MAXIMUM POWER OUTPUT FOR GIVEN I_m DISTORTION LEVEL

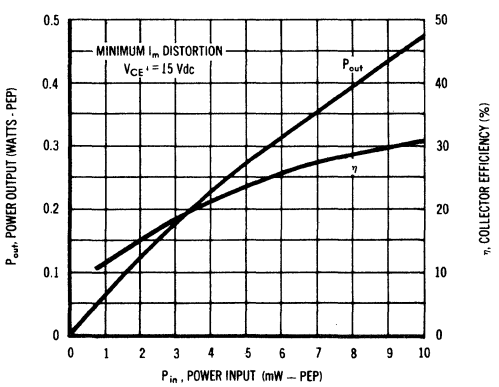


POWER OUTPUT versus OPTIMUM BIAS



OUTPUT CHARACTERISTICS versus POWER INPUT

30 MHz



4 MHz