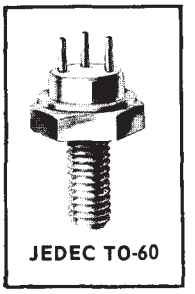
HG Semiconductors

HG RF POWER TRANSISTOR
2N4932
ROHS Compliance,Silicon NPN POWER TRANSISTOR

HG-2N4932* and HG -2N4933▲ are epitaxial silicon n-p-n planar transistors of the "overlay" emitter electrode construction. They are especially intended to provide high power as class C rf amplifiers for International VHF Mobile and Portable Communications service (66 to 88 MHz). The 2N4932 is designed to operate from a 13.5-volt power supply; the 2N4933, from a 24-volt power supply.

The transistors feature protection against load mismatch.

In the overlay structure, there are a number of individual emitter sites which are all connected in parallel and used in conjunction with a common collector region. When compared with other structures, this arrangement provides a substantial increase in emitter periphery for higher current or power, and a corresponding decrease in emitter and collector areas for lower input and output capacitances. The overlay structure thus offers greater power output, gain, efficiency, frequency capability, and linearity.



JEDEC TO-60

For International VHF Mobile and Portable Communication, 66 to 88 MHz

Operation From a Power Supply of –
13.5 volts (2N4932)
24 volts (2N4933)

Power Output (Min.) at 88 MHz
12 watts (2N4932)
20 watts (2N4933)

Load Protection
High Voltage Ratings

Note : Above parameters , ratings , limits and conditions are subject to change.

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ELECTRICAL CHARACTERISTICS FOR 2N4932
Case Temperature = 25° C

Characteristic	Symbol	TEST CONDITIONS						Limits		Units
		DC Collector Volts		DC Base Volts	DC Current (Milliamperes)					
		V_{CB}	V_{CE}	V_{BE}	I_E	I_B	I_C	Min.	Max.	
Collector-Cutoff Current	I_{CEO}		15			0			1.0	mA
	I_{CBO}	40			0				10	mA
Collector-to-Emitter Breakdown Voltage	$V_{CEV(sus)}$			−1.5			200[a]	50		V
	$V_{CEO(sus)}$					0	200[a]	25		V
Emitter-to-Base Breakdown Voltage	BV_{EBO}				10		0	4		V
Collector-to-Base Capacitance	C_{ob}	15			0				120	pF
RF Power Output (See *Fig.2*)	P_{out}							12[c]		W

ELECTRICAL CHARACTERISTICS FOR 2N4933
Case Temperature = 25° C

Characteristic	Symbol	TEST CONDITIONS						Limits		Units
		DC Collector Volts		DC Base Volts	DC Current (Milliamperes)					
		V_{CB}	V_{CE}	V_{BE}	I_E	I_B	I_C	Min.	Max.	
Collector-Cutoff Current	I_{CEO}		30			0			1.0	mA
	I_{CBO}	50			0				10	mA
Collector-to-Emitter Breakdown Voltage	$V_{CEV(sus)}$			−1.5			200[a]	70		V
	$V_{CEO(sus)}$					0	200[a]	35		V
Emitter-to-Base Breakdown Voltage	BV_{EBO}				10		0	4		V
Collector-to-Base Capacitance	C_{ob}	30			0				85	pF
RF Power Output (See *Fig.3*)	P_{out}							20[b]		W

[a] Pulsed through an inductor (25mH), duty factor = 50%
[b] For P_{in} = 3.5 W, at 88 MHz; V_{cc} = 24V, minimum efficiency = 70%
[c] For P_{in} = 3.5 W, at 88 MHz; V_{cc} = 13.5V, minimum efficiency = 70%

Note : Above parameters , ratings , limits and conditions are subject to change.