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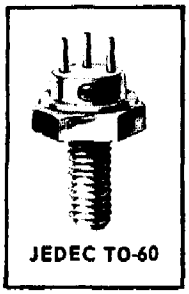
RF Power Transistors

2N4932
2N4933



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

RATINGS

Maximum Ratings, *Absolute-Maximum Values:*

		2N4932	2N4933	
COLLECTOR-TO-BASE VOLTAGE	V_{CBO}	50	70	V
COLLECTOR-TO-EMITTER VOLTAGE:				
With base open	V_{CEO}	25	35	V
With V_{BE} = −1.5V	V_{CEV}	50	70	V
EMITTER-TO-BASE VOLTAGE	V_{EBO}	4.0		V
COLLECTOR CURRENT:				
Peak		10		A
Continuous	I_C	3.3		A
RF INPUT POWER	P_{in}			
At 88 MHz		3.5		W
Below 88 MHz		See *Fig.7*		
TRANSISTOR DISSIPATION	P_T			
At case temperatures up to 25° C		70		W
At case temperatures above 25° C		See *Fig.1*		
TEMPERATURE RANGE:				
Storage & Operating (Junction)		−65 to 200		°C
LEAD TEMPERATURE (During soldering):				
At distances ≥ 1/32 in. from insulating wafer for 10 s max.		230		°C

DISSIPATION DERATING CURVE

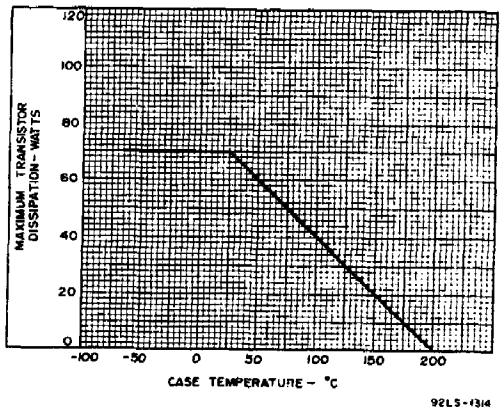


Fig.1

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%