



2N4030 THROUGH 2N4033

PNP SILICON AF MEDIUM POWER AMPLIFIERS & SWITCHES

CASE TO-39

THE 2N4030 THROUGH 2N4033 ARE PNP SILICON PLANAR EPITAXIAL TRANSISTORS FOR AF MEDIUM POWER DRIVERS AND OUTPUTS, AS WELL AS FOR SWITCHING APPLICATIONS UP TO 1 AMPERE. THE 2N4030, 2N4031, 2N4032, 2N4033 ARE COMPLEMENTARY TO THE NPN 2N3108, 2N3020, 2N3107, 2N3019 RESPECTIVELY.



C E B

ABSOLUTE MAXIMUM RATINGS

		2N4030 2N4032	2N4031 2N4033
Collector-Base Voltage	-V _{CB0}	60V	80V
Collector-Emitter Voltage	-V _{CEO}	60V	80V
Emitter-Base Voltage	-V _{EB0}	5V	5V
Collector Current	-I _C		1A
Total Power Dissipation (T _C ≤ 25°C)	P _{tot}		4W
			800mW
Operating Junction & Storage Temperature	T _j , T _{stg}	-65 to 200°C	

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

PARAMETER	SYMBOL	MIN	MAX	UNIT	TEST CONDITIONS
Collector-Base Breakdown Voltage 2N4030, 2N4032	-V _{CB0}	60		V	-I _C =0.01mA I _B =0
2N4031, 2N4033		80		V	
Collector-Emitter Breakdown Voltage	-V _{CEO} *				-I _C =10mA I _B =0
2N4030, 2N4032		60		V	
2N4031, 2N4033		80		V	
Emitter-Base Breakdown Voltage	-V _{EB0}	5		V	-I _E =0.01mA I _C =0
Collector Cutoff Current	-I _{CB0}				
2N4030, 2N4032			50	nA	-V _{CB} =50V I _E =0
2N4031, 2N4033			50	nA	-V _{CB} =60V I _E =0
Collector Cutoff Current	-I _{CB0}				
2N4030, 2N4032			50	μA	-V _{CB} =50V I _E =0 T _A =150°C
2N4031, 2N4033			50	μA	-V _{CB} =60V I _E =0 T _A =150°C
Collector-Emitter Saturation Voltage	-V _{CE(sat)} *	0.15		V	-I _C =150mA -I _B =15mA
		0.5		V	-I _C =500mA -I _B =50mA
2N4030, 2N4032 only	-V _{CE(sat)} *	1.0		V	-I _C =1A -I _B =0.1A
Base-Emitter Saturation Voltage	-V _{BE(sat)} *	0.9		V	-I _C =150mA -I _B =15mA
Base-Emitter Voltage	-V _{BE} *	1.1		V	-I _C =500mA -V _{CE} =0.5V
2N4030, 2N4032 only		1.2		V	-I _C =1A -V _{CE} =1V

MICRO ELECTRONICS LTD.

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PARAMETER	SYMBOL	MIN	MAX	UNIT	TEST CONDITIONS
D.C. Current Gain 2N4030, 2N4031 only	HFE *	30	120		-I _C =0.1mA -V _{CE} =5V -I _C =100mA -V _{CE} =5V -I _C =500mA -V _{CE} =5V
D.C. Current Gain 2N4032, 2N4033 only	HFE *	75	300		-I _C =0.1mA -V _{CE} =5V -I _C =100mA -V _{CE} =5V -I _C =500mA -V _{CE} =5V
D.C. Current Gain 2N4030 2N4031 2N4032 2N4033	HFE *	15	25		-I _C =1A -V _{CE} =5V
D.C. Current Gain 2N4030, 2N4031 2N4032, 2N4033	HFE *	15	40		-I _C =100mA -V _{CE} =5V T _A =-55°C
Current Gain-Bandwidth Product 2N4030, 2N4031 2N4032, 2N4033	f _T	100	500	MHz	-I _C =50mA -V _{CE} =10V
Collector-Base Capacitance	C _{ob}		20	pF	-V _{CB} =10V I _B =0 f=1MHz
Emitter-Base Capacitance	C _{ib}		110	pF	-V _{EB} =0.5V I _C =0 f=1MHz
Turn-On Time	t _{on}		100	nS	-I _C =500mA -I _{B1} =50mA
Storage Time	t _s		350	nS	-I _C =500mA -I _{B1} =I _{B2} =50mA
Fall Time	t _f		50	nS	-I _C =500mA -I _{B1} =I _{B2} =50mA

* Pulse Test : Pulse Width=0.3mS, Duty Cycle=1%

