PPC, Inc.
Microsemi
Progress Powered by Technology

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2N2151

APPLICATIONS:

- Fast Switching
- High Frequency Switching and Amplifying

FEATURES:

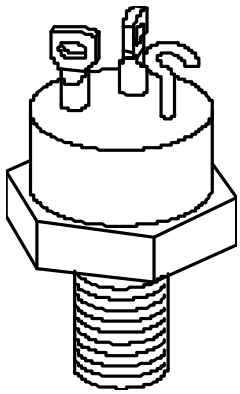
- High Reliability
- Greater Gain Stability

5 Amp, 100V, Planar, NPN Power Transistors JAN, JANTX

DESCRIPTION:

These power transistors are produced by PPC's DOUBLE DIFFUSED PLANAR process. This technology produces high voltage devices with excellent switching speeds, frequency response, gain linearity, saturation voltages, high current gain, and safe operating areas. They are intended for use in Commercial, Industrial, and Military power switching, amplifier, and regulator applications.

Ultrasonically bonded leads and controlled die mount techniques are utilized to further increase the SOA capability and inherent reliability of these devices. The temperature range to 200°C permits reliable operation in high ambients, and the hermetically sealed package insures maximum reliability and long life.



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ABSOLUTE MAXIMUM RATINGS

SYMBOL	CHARACTERISTIC	VALUE	UNITS
V_{CBO}*	Collector-Base Voltage	150	V
V_{CEO}*	Collector-Emitter Voltage	100	V
V_{EBO}*	Emitter-Base Voltage	8	V
I_C*	Peak Collector Current	10	A
I_C*	Continuous Collector Current	5	A
I_B*	Continuous Base Current	2	A
T_{STG}*	Storage Temperature	-65 to 200	°C
T_J*	Operating Junction Temperature	-65 to 200	°C
*	Lead Temperature 1/16" From Case for 10 Sec.	230	°C
P_T*	Power Dissipation T_A = 25°C T_C = 100°C	 2 30	 W W
θ JC	Thermal Resistance Junction to Case	3.33	°C/W

* Indicates JEDEC registered data.

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ELECTRICAL CHARACTERISTICS
(25°Case Temperature Unless Otherwise Noted)

SYMBOL	CHARACTERISTIC	TEST CONDITIONS	VALUE		Units
			Min.	Max	
BV_{CBO}*	Collector-Base Voltage	I_C = 100 μAdc, Cond. D	150	----	Vdc
BV_{CEO}*	Collector-Emitter Voltage (Note 1)	I_C = 50 mAdc, Cond. D	100	----	Vdc
BV_{EBO}*	Emitter-Base Voltage	I_E = 2 μAdc, Cond. D	8	----	Vdc
I_{CEO}*	Collector-Emitter Cutoff Current	V_{CE} = 120 Vdc Cond. D	----	5	μAdc
I_{CEX}*	Collector-Emitter Cutoff Current	V_{CE} = 120 Vdc, V_{EB} = 0.5 Vdc, Cond. A V_{CE} = 120 Vdc, V_{EB} = 0.5 Vdc, Cond. A T_A = 150°C	---- ----	5 100	μAdc μA
I_{CBO}*	Collector-Base Cutoff Current	V_{CB} = 120 Vdc, Cond. D	----	5	μAdc
hFE*	DC Current Gain (Note 1)	I_C = 1 Adc, V_{CE} = 5 Vdc I_C = 0.5 Adc, V_{CE} = 5 Vdc I_C = 0.1 Adc, V_{CE} = 5 Vdc	40 40 40	120 120 ----	---- ---- ----
hFE*	AC Current Gain	I_C = 0.1 Adc, V_{CE} = 30 Vdc, f = 1 KHz	40	160	----
$V_{CE(sat)}$*	Collector Saturation Voltage (Note 1)	I_C = 1 Adc, I_B = 0.1 Adc	----	1.0	Vdc
$V_{BE(sat)}$*	Base Saturation Voltage (Note 1)	I_C = 1 Adc, I_B = 0.1 Adc	----	1.2	Vdc
$V_{BE(on)}$*	Base On-Voltage (Note 1)	I_C = 1 Adc, V_{CE} = 2 Vdc	----	1.2	Vdc
f_T*	Gain-Bandwidth Product	I_C = 1 Adc, V_{CE} = 30 Vdc, f = 10 MHz	10	70	MHz
C_{ob}*	Output Capacitance	V_{CB} = 20 Vdc, 1_E = 0, f = 1 MHz	----	160	pf

Note 1: Pulse Test: PW = 300μs, Duty Cycle ≤ 2%.

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PACKAGE MECHANICAL DATA