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2N6249 – 2N6250 – 2N6251

HIGH VOLTAGE NPN SILICON POWER TRANSISTORS

The 2N6249 – 2N6250 – 2N6251 are NPN silicon transistors in Jedec TO-3. They are designed for high voltage inverters, switching regulators and line operated amplifier applications. Especially well suited for switching power supply applications.

- High Voltage Breakdown Rating
- Low Saturation Voltages
- Fast Switching Capability
- High $E_{s/b}$ Energy Handling Capability

ABSOLUTE MAXIMUM RATINGS

Symbol	Ratings			Value	Unit
V_{CEO}	#Collector-Emitter Voltage (1)		2N6249 2N6250 2N6251	200 275 350	V
V_{CER}	#Collector-Emitter Voltage (1)	R_{BE}=50Ω	2N6249 2N6250 2N6251	225 300 375	V
V_{CB}	Collector-Base Voltage (1)		2N6249 2N6250 2N6251	300 375 450	Vdc
V_{EB}	Emitter-Base Voltage		2N6249 2N6250 2N6251	6.0	Vdc
I_C	Collector Current	Continuous (1)	2N6249 2N6250 2N6251	15	Adc
		Peak	2N6249 2N6250 2N6251	30	
I_B	Base Current	Continuous (1)	2N6249 2N6250 2N6251	10	Adc
		Peak	2N6249 2N6250 2N6251	20	
I_E	Emitter Current	Continuous	2N6249 2N6250 2N6251	25	Adc
		Peak	2N6249 2N6250 2N6251	50	

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P_t	Total Power Dissipation	@ T_C = 25°	2N6249 2N6250 2N6251	175	Watts
		@ T_C = 100°	2N6249 2N6250 2N6251	100	
		Derate above 25° (1)	2N6249 2N6250 2N6251	1.0	W/°C
T_J	Junction Temperature (1)		2N6249 2N6250 2N6251	-65 to +200	°C
T_{stg}	Storage Temperature (1)		2N6249 2N6250 2N6251	-65 to +200	°C

(1) This data guaranteed in addition to JEDEC registered data.

THERMAL CHARACTERISTICS

Symbol	Ratings		Value	Unit
R_{thJC}	Thermal Resistance, Junction to Case	2N6249 2N6250 2N6251	1	°C/W
T_L	Maximum Lead Temperature for Soldering Purposes : 1/8" from Case for 5 Secondes	2N6249 2N6250 2N6251	275	°C

ELECTRICAL CHARACTERISTICS

TC=25°C unless otherwise noted

Symbol	Ratings	Test Condition(s)		Min	Typ	Mx	Unit
$V_{CEO(SUS)}$	Collector-Emitter Sustaining Voltage	I_C=200 mAdc, I_B=0	2N6249	200	-	-	Vdc
			2N6250	275	-	-	
			2N6251	350	-	-	
$V_{CER(SUS)}$	Collector-Emitter Sustaining Voltage	I_C=0.2 Adc, R_{BE}=50Ω	2N6249	225	-	-	V
			2N6250	300	-	-	
			2N6251	375	-	-	
I_{CEO}	Collector-Emitter Current	V_{CE}=150 Vdc, I_B=0	2N6249	-	-	5.0	mAdc
		V_{CE}=225 Vdc, I_B=0	2N6250	-	-	5.0	
		V_{CE}=300 Vdc, I_B=0	2N6251	-	-	5.0	
I_{CEX}	Collector Cutoff Current	V_{CE}=225 Vdc, $V_{EB(off)}$=1.5 Vdc		-	-	5.0	mAdc
		V_{CE}=225 Vdc, $V_{EB(off)}$=1.5 Vdc, T_C = 150°C	2N6249	-	-	10	
		V_{CE}=300 Vdc, $V_{EB(off)}$=1.5 Vdc		-	-	5.0	
		V_{CE}=300 Vdc, $V_{EB(off)}$=1.5 Vdc, T_C = 150°C	2N6250	-	-	10	
		V_{CE}=375 Vdc, $V_{EB(off)}$=1.5 Vdc		-	-	5.0	
		V_{CE}=375 Vdc, $V_{EB(off)}$=1.5 Vdc, T_C = 150°C	2N6251	-	-	10	

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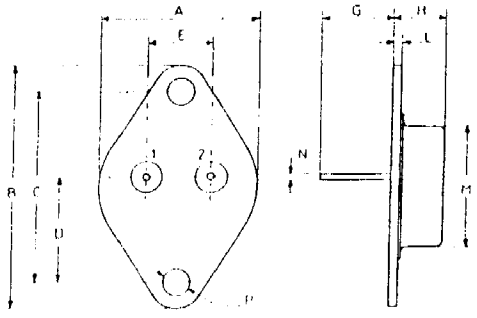
I_{EBO}	Emitter Cutoff Current	V_{BE}=6.0 Vdc, I_C=0	**2N6249** **2N6250** **2N6251**	-	-	1.0	mAdc
$I_{s/b}$	Ssecond Breakdown Collector Current with base forward biased t=1.0S non-repetitive	V_{CE}=30 Vdc	**2N6249** **2N6250** **2N6251**	5.8 5.8 5.8	- - -	- - -	Vdc
$E_{s/b}$	Ssecond Breakdown Energy with base reverse biased t=1.0S non-repetitive	I_C= 10 A, $V_{BE(off)}$ = 4.0Vdc, L = 50 µH	**2N6249** **2N6250** **2N6251**	2.5 2.5 2.5	- - -	- - -	mJ
h_{FE}	DC Current Gain	I_C=10 Adc, V_{CE}=3.0 Vdc	**2N6249** **2N6250** **2N6251**	10 8.0 6.0	- - -	50 50 50	-
$V_{CE(SAT)}$	Collector-Emitter saturation Voltage (1)	I_C=10 Adc, I_B=1 Adc I_C=10 Adc, I_B=1.25 Adc I_C=10 Adc, I_B=1.67 Adc	**2N6249** **2N6250** **2N6251**	- - -	- - -	1.5 1.5 1.5	Vdc
$V_{BE(SAT)}$	Base-Emitter saturation Voltage (1)	I_C=10 Adc, I_B=1 Adc I_C=10 Adc, I_B=1.25 Adc I_C=10 Adc, I_B=1.67 Adc	**2N6249** **2N6250** **2N6251**	- - -	- - -	2.5 2.5 2.5	Vdc

(1) Mesured on a curve tracer (60 Hz full-wave rectified sine wave).

Symbol	Ratings	Test Condition(s)		Min	Typ	Mx	Unit
f_T	Current Gain – Bandwith Product	V_{CE}=10 Vdc, I_C=1.0 Adc, f_{test} = 1.0 Mhz		2.5	-	-	MHz
	V_{CC}= 200 Vdc, I_C= 10 A, Duty Cycle <= 2.0% t_p= 100 µs						
t_r	Rise Time	I_{B1} = I_{B2}=1.0 Adc	**2N6259**	-	-	2.0	µs
t_s	Storage Time	I_{B1} = I_{B2}=1.25 Adc	**2N6250**	-	-	3.5	
t_f	Fall Time	I_{B1} = I_{B2}=1.67 Adc	**2N6251**	-	-	1.0	

MECHANICAL DATA CASE TO-3

DIMENSIONS		
	mm	inches
A	25,51	1,004
B	38,93	1,53
C	30,12	1,18
D	17,25	0,68
E	10,89	0,43
G	11,62	0,46
H	8,54	0,34
L	1,55	0,6
M	19,47	0,77
N	1	0,04
P	4,06	0,16



Pin 1 :	Base
Pin 2 :	Emitter
Case :	Collector