



MJ2500 - MJ2501 PNP
MJ3000 - MJ3001 NPN

SILICON EPITAXIAL-BASE DARLINGTON

The MJ2500, and MJ2501 are silicon epitaxial-base NPN power transistors in monolithic Darlington configuration and are mounted in Jedec TO-3 metal case. They are intended for use in power linear and switching applications.

The complementary PNP types are the MJ3000 and MJ3001 respectively.

ABSOLUTE MAXIMUM RATINGS

Symbol	Ratings		Value	Unit	
V_{CBO}	Collector-Base Voltage	$I_E=0$	MJ2500 MJ3000	60	Vdc
			MJ2501 MJ3001	80	
V_{CEO}	Collector-Emitter Voltage	$I_B=0$	MJ2500 MJ3000	60	Vdc
			MJ2501 MJ3001	80	
V_{EBO}	Emitter-Base Voltage	$I_C=0$	MJ2500 MJ3000 MJ2501 MJ3001	5.0	Vdc
I_C	Collector Current		MJ2500 MJ3000 MJ2501 MJ3001	10	Adc

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Symbol	Ratings		Value	Unit
I_B	Base Current	MJ2500 MJ3000 MJ2501 MJ3001	0.2	Adc
P_T	Power Dissipation	@ $T_C < 25^\circ$ MJ2500 MJ3000 MJ2501 MJ3001	150	Watts
$T_J T_s$	Junction Storage Temperature	MJ2500 MJ3000 MJ2501 MJ3001	200 -65 to +200	$^\circ C$

THERMAL CHARACTERISTICS

Symbol	Ratings		Value	Unit
R_{thJ-C}	Thermal Resistance, Junction to Case	MJ2500 MJ3000 MJ2501 MJ3001	1.17	$^\circ C/W$

ELECTRICAL CHARACTERISTICS

TC=25 $^\circ C$ unless otherwise noted

Symbol	Ratings	Test Condition(s)	Min	Typ	Mx	Unit	
BV_{CEO}	Collector-Emitter Breakdown Voltage (*)	$I_C=100 \text{ mAdc}, I_B=0$	MJ2500 MJ3000	60	-	-	Vdc
			MJ2501 MJ3001	80	-	-	

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Symbol	Ratings	Test Condition(s)	Min	Typ	Mx	Unit	
I_{CEO}	Collector Cutoff Current	$V_{CE}=30\text{ Vdc}, I_B=0$	MJ2500 MJ3000	-	-	1.0	mAdc
		$V_{CE}=40\text{ Vdc}, I_B=0$	MJ2501 MJ3001	-	-		
I_{EBO}	Emitter Cutoff Current	$V_{BE}=5.0\text{ Vdc}, I_C=0$	MJ2500 MJ2501 MJ3000 MJ3001	-	-	2.0	mAdc
I_{CER}	Collector-Emitter Leakage Current	$V_{CB}=60\text{ V}, R_{BE}=1.0\text{ k ohm}$	MJ2500 MJ3000	-	-	1.0	mAdc
		$V_{CB}=80\text{ V}, R_{BE}=1.0\text{ k ohm}$	MJ2501 MJ3001	-	-		
		$V_{CB}=60\text{ V}, R_{BE}=1.0\text{ k ohm}, T_C=150^\circ\text{C}$	MJ2500 MJ3000	-	-	5.0	
		$V_{CB}=80\text{ V}, R_{BE}=1.0\text{ k ohm}, T_C=150^\circ\text{C}$	MJ2501 MJ3001	-	-		
$V_{CE(SAT)}$	Collector-Emitter saturation Voltage (*)	$I_C=5.0\text{ A}, I_B=20\text{ mAdc}$	MJ2500 MJ3000 MJ2501 MJ3001	-	-	2.0	Vdc
		$I_C=10\text{ A}, I_B=50\text{ mAdc}$	MJ2500 MJ3000 MJ2501 MJ3001	-	-	4.0	
V_{BE}	Base-Emitter Voltage (*)	$I_C=5.0\text{ Adc}, V_{CE}=3.0\text{ Vdc}$	MJ2500 MJ3000 MJ2501 MJ3001	-	-	3	V
h_{fe}	DC Current Gain (*)	$V_{CE}=3.0\text{ Vdc}, I_C=5.0\text{ Adc}$	MJ2500 MJ3000 MJ2501 MJ3001	1000	-	-	-

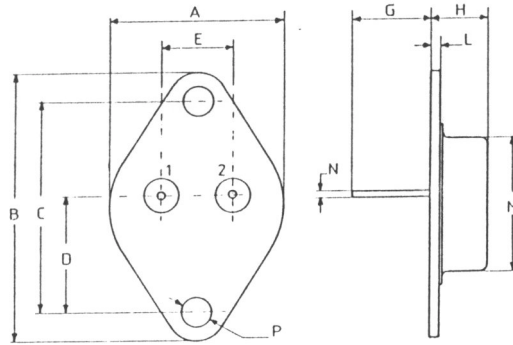
For PNP types current and voltage values are negative

(*) Pulse Width $\approx 300\ \mu\text{s}$, Duty Cycle $\angle 2.0\%$

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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 :	Collector
Case :	Emitter