NPN MJ1000 – MJ1001

COMPLEMENTARY POWER DARLINGTONS

The MJ1000, MJ1001 are silicon epitaxial-bas 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.
Their complementary PNP types are the MJ900 and MJ901 respectively.
Compliance to RoHS

ABSOLUTE MAXIMUM RATINGS

Symbol	Ratings			Value	Unit
V_{CBO}	Collector-Base Voltage		MJ1000	60	V
			MJ1001	80	
V_{CEO}	Collector-Emitter Voltage	I_B=0	MJ1000	60	V
			MJ1001	80	
V_{EBO}	Emitter-Base Voltage		MJ1000	5.0	V
			MJ1001		
I_C	Collector Current	$I_{C(RMS)}$	MJ1000	8.0	A
			MJ1001		
I_B	Base Current		MJ1000	0.1	A
			MJ1001		
P_T	Power Dissipation	@ T_C < 25°	MJ1000	90	W
		Derate above 25℃	MJ1001	0.515	W/℃
T_J	Junction Temperature		MJ1000	-65 to +200	℃
			MJ1001		
T_S	Storage Temperature		MJ1000		
			MJ1001		

THERMAL CHARACTERISTICS

Symbol	Ratings	Value	Unit
R_{thJ-C}	Thermal Resistance, Junction to Case	1.94	℃/W

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ELECTRICAL CHARACTERISTICS

TC=25℃ unless otherwise noted

Symbol	Ratings	Test Condition(s)		Min	Typ	Max	Unit
V_{CEO}	Collector-Emitter Breakdown Voltage (*)	I_C=100 mA, I_B=0	MJ1000	60	-	-	V
			MJ1001	80	-	-	
I_{CEO}	Collector Cutoff Current	V_{CE}=30 V, I_B=0	MJ1000	-	-	500	μA
		V_{CE}=40 V, I_B=0	MJ1001	-	-		
I_{EBO}	Emitter Cutoff Current	V_{BE}=5.0 V, I_C=0	MJ1000	-	-	2.0	mA
			MJ1001				
I_{CER}	Collector-Emitter Leakage Current	V_{CB}=60 V, R_{BE}=1.0 kΩ	MJ1000	-	-	1.0	mA
		V_{CB}=80 V R_{BE}=1.0 kΩ	MJ1001	-	-		
		V_{CB}=60 V R_{BE}=1.0 kΩ T_C=150℃	MJ1000	-	-	5.0	
		V_{CB}=80 V R_{BE}=1.0 kΩ T_C=150℃	MJ1001	-	-		
$V_{CE(SAT)}$	Collector-Emitter saturation Voltage (*)	I_C=3.0 A, I_B=2 mA	MJ1000	-	-	2.0	V
			MJ1001				
		I_C=8.0 A, I_B=40 mA	MJ1000	-	-	4.0	
			MJ1001				
V_F	Forward Voltage (pulse method)	I_F=3 A	MJ1000	-	1.8	-	V
			MJ1001				
V_{BE}	Base-Emitter Voltage (*)	I_C=3.0 A, V_{CE}=3.0 V	MJ1000	-	-	2.5	V
			MJ1001				
H_{FE}	DC Current Gain (*)	V_{CE}=3.0 V, I_C=3.0 A	MJ1000	1000	-	-	-
			MJ1001				
		V_{CE}=3.0 V, I_C=4.0 A	MJ1000	750	-	-	
			MJ1001				

(*) Pulse Width ≈ 300 μs, Duty Cycle ∠ 2.0%

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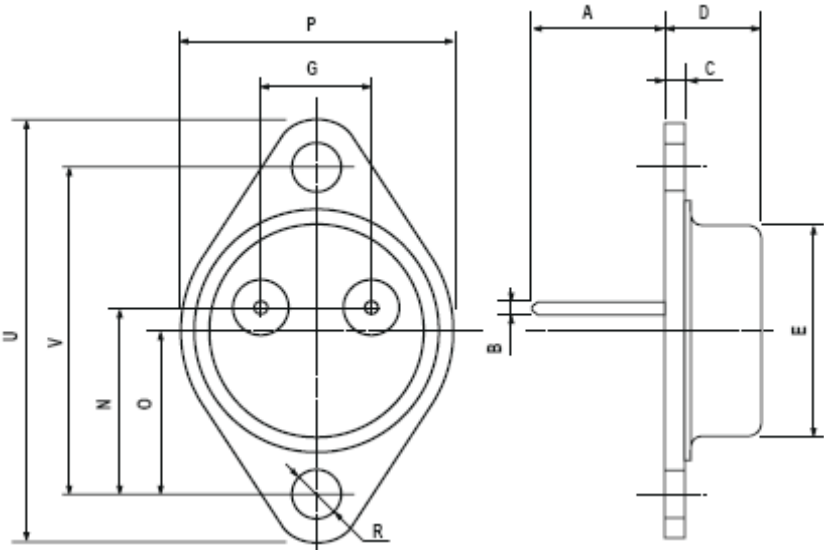
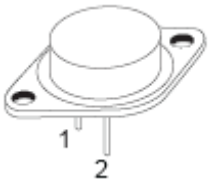
MECHANICAL DATA CASE TO-3

DIMENSIONS (mm)		
	min	max
A	11	13.10
B	0.97	1.15
C	1.5	1.65
D	8.32	8.92
F	19	20
G	10.70	11.1
N	16.50	17.20
P	25	26
R	4	4.09
U	38.50	39.30
V	30	30.30



Pin 1 :	Base
Pin 2 :	Emitter
Case :	Collector



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