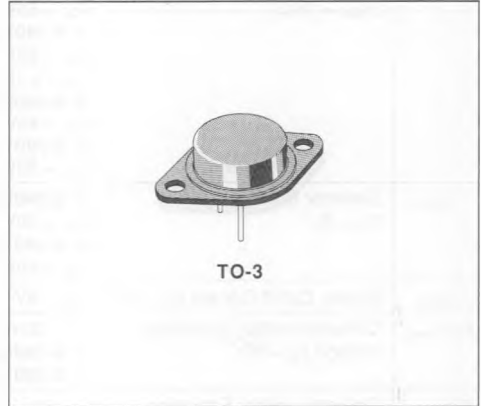


## COMPLEMENTARY POWER DARLINGTONS

### DESCRIPTION

The MJ900, MJ901, MJ1000 and MJ1001 are silicon epitaxial-base transistors in monolithic Darling-  
 ton configuration, and are mounted in Jedec TO-3  
 metal case. They are intended for use in power li-  
 near and switching applications.

The PNP types are the MJ900 and MJ901 and their  
 complementary NPN types are the MJ1000 and  
 MJ1001 respectively.



### INTERNAL SCHEMATIC DIAGRAMS



### ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	PNP° NPN	Value		Unit
			MJ900 MJ1000	MJ901 MJ1001	
$V_{CB0}$	Collector-base Voltage ( $I_E = 0$ )		60	80	V
$V_{CE0}$	Collector-emitter Voltage ( $I_B = 0$ )		60	80	V
$V_{EB0}$	Emitter-base Voltage ( $I_C = 0$ )		5		V
$I_C$	Collector Current		8		A
$I_B$	Base Current		0.1		A
$P_{tot}$	Total Power Dissipation at $T_{case} \leq 25^\circ\text{C}$		90		W
$T_{stg}$	Storage Temperature		- 65 to 200		$^\circ\text{C}$
$T_J$	Junction Temperature		200		$^\circ\text{C}$

For PNP types voltage and current values are negative.

**THERMAL DATA**

$R_{th(j-case)}$	Thermal Resistance Junction-case	Max	1.94	$^{\circ}C/W$
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**ELECTRICAL CHARACTERISTICS** ( $T_{case} = 25^{\circ}C$  unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
$I_{CER}$	Collector Cutoff Current ( $R_{BE} = 1K\Omega$ )	for <b>MJ900</b> and <b>MJ1000</b> $V_{CE} = 60V$			1	mA
		for <b>MJ901</b> and <b>MJ1001</b> $V_{CE} = 80V$			1	mA
		$T_{case} = 150^{\circ}C$ for <b>MJ900</b> and <b>MJ1000</b> $V_{CE} = 60V$			5	mA
		for <b>MJ901</b> and <b>MJ1001</b> $V_{CE} = 80V$			5	mA
$I_{CEO}$	Collector Cutoff Current ( $I_B = 0$ )	for <b>MJ900</b> and <b>MJ1000</b> $V_{CE} = 30V$			0.5	mA
		for <b>MJ901</b> and <b>MJ1001</b> $V_{CE} = 40V$			0.5	mA
$I_{EBO}$	Emitter Cutoff Current ( $I_C = 0$ )	$V_{EB} = 5V$			2	mA
$V_{CEO(sus)}^*$	Collector-emitter Sustaining Voltage ( $I_B = 0$ )	$I_C = 100mA$ for <b>MJ900</b> and <b>MJ1000</b> for <b>MJ901</b> and <b>MJ1001</b>	60			V
			80			V
$V_{CE(sat)}^*$	Collector-emitter Saturation Voltage	$I_C = 3A$	$I_B = 12mA$		2	V
		$I_C = 8A$		$I_B = 40mA$		4
$V_{BE}^*$	Base-emitter Voltage	$I_C = 3A$	$V_{CE} = 3V$		2.5	V
$h_{FE}^*$	DC Current Gain	$I_C = 3A$	$V_{CE} = 3V$	1000		
		$I_C = 4A$	$V_{CE} = 3V$	750		

\* Pulsed : pulse duration = 300 $\mu$ s, duty cycle = 1.5%.  
For PNP types current and voltage values are negative.  
For characteristic curves see the 2N6053/55 series.