

## COMPLEMENTARY POWER DARLINGTONS

### DESCRIPTION

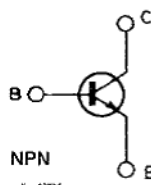
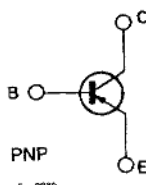
The MJ900, MJ901, MJ1000 and MJ1001 are silicon epitaxial-base transistors in monolithic Darlingon configuration, and are mounted in Jedec TO-3 metal case. They are intended for use in power linear and switching applications.

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



TO-3

### INTERNAL SCHEMATIC DIAGRAMS



### ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	PNP <sup>o</sup> NPN	Value		Unit
			MJ900 MJ1000	MJ901 MJ1001	
$V_{CBO}$	Collector-base Voltage ( $I_E = 0$ )		60	80	V
$V_{CEO}$	Collector-emitter Voltage ( $I_B = 0$ )		60	80	V
$V_{EBO}$	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		$^\circ\text{C}$

<sup>o</sup>For PNP types voltage and current values are negative.

## THERMAL DATA

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

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

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